

DEPARTMENT OF LABOR**Mine Safety and Health Administration****30 CFR Parts 42, 47, 56, 57, and 77**

RIN 1219-AA47

Hazard Communication (HazCom)**AGENCY:** Mine Safety and Health Administration (MSHA), Labor.**ACTION:** Interim final rule; request for comments.

SUMMARY: We (MSHA) are establishing this interim final rule entitled "Hazard Communication (HazCom)" (30 CFR Part 47) to reduce injuries and illnesses related to chemicals in the mining industry. The standard requires mine operators to assess the hazards of chemicals they produce or use and provide information to miners concerning chemical hazards by means of a written chemical hazard communication program; labeling containers of hazardous chemicals; providing access to material safety data sheets (MSDSs); and training miners. In response to the National Performance Review and President Clinton's subsequent Executive Memorandum on Plain Language in Government Writing, dated June 1, 1998, we wrote this interim final rule in a different style than the one used in the proposal. Most of the requirements in this interim final rule, however, are substantially the same as the proposed rule.

This interim final rule reflects comments received on the Notice of Proposed Rulemaking, public hearings, and the notice published in the **Federal Register** on March 30, 1999 (64 FR 15144), requesting comments on the impact of certain regulatory mandates and related Executive Orders on the proposed rule. In response to the most recent re-opening of the record, commenters requested an opportunity to address the provisions of the whole rule.

Although not legally required, we think the additional opportunity to comment on the interim final rule is appropriate given the new "plain English" format and the passage of time since the close of the original comment period. For these reasons, we are allowing the public an additional opportunity to comment. All comments received will become part of the rulemaking record. We will publish our response to the comments received during this additional comment period in the **Federal Register**.

DATES: *Effective date:* This interim final rule is effective October 3, 2001.

Comment period: Comments on this interim final rule must be received by November 17, 2000 to ensure consideration.

ADDRESSES: Comments may be transmitted by electronic mail, fax, or mail, or dropped off in person at any MSHA office. Comments by electronic mail must be clearly identified as such and sent to this e-mail address: *comments@MSHA.gov*. Comments by fax must be clearly identified as such and sent to: MSHA, Office of Standards, Regulations, and Variances, 703-235-5551. Send mail comments to: MSHA, Office of Standards, Regulations, and Variances, 4015 Wilson Boulevard, Room 631, Arlington, VA 22203-1984, or to any MSHA district or field office. Interested persons are encouraged to supplement written comments with computer files or disks; please contact the Agency with any questions about format.

FOR FURTHER INFORMATION CONTACT:

Carol J. Jones, Director; MSHA Office of Standards, Regulations, and Variances; 703-235-1910.

SUPPLEMENTARY INFORMATION:**I. Introduction**

We identify our hazard communication standard as "HazCom" to abbreviate the term and to help readers distinguish it from the Occupational Safety and Health Administration's (OSHA) Hazard Communication Standard (HCS). In this interim final rule, "you" refers to production-operators and independent contractors, who have the primary responsibility for complying with our standards. Where needed, we use the terms "operator" or "independent contractor" to avoid confusion.

HazCom's appearance is different from the 1990 proposed rule, which we modeled after OSHA's HCS. We have made a few substantive changes in the interim final rule where comments and information submitted to the record justified a change. Changes from the proposal are also meant to clarify intent, reduce burden, and eliminate unnecessary language and needless repetition. We have tailored provisions to better fit the mining industry. Despite the change of style, the substance of the requirements for most provisions remains the same as in the proposal. We tried to organize the standard in a way that optimized clarity, logic, and accessibility to the requirements.

When HazCom was originally proposed as part 46 in 1990, a Congressional budget rider prohibited us from expending appropriated funds to enforce training requirements at

surface nonmetal mines. The 1999 training rider, however, authorized us to expend funds to propose and promulgate a final training standard for surface nonmetal mines. We, therefore, promulgated new training standards on September 30, 1999, which address the exempted mining operations. We chose part 46 as the proper place in the Code of Federal Regulations for publication of this training rule so that it would be near our other training standards promulgated under section 115 of the Federal Mine Safety and Health Act of 1977. After publication of part 46, we determined that the proper place to publish the HazCom rule would be as a new part 47. This required us to move the existing part 47, National Mine Health and Safety Academy, to part 42 with other administrative provisions.

The following is an outline of this HazCom preamble to help you find information more quickly.

- I. Introduction.
 - A. Overview of Rulemaking.
 - B. Regulatory History.
- II. Paperwork Reduction Act.
- III. Discussion of the Interim Final Rule.
 - A. Subpart A—Purpose and Scope of HazCom.
 - B. Subpart B—Hazard Determination.
 - C. Subpart C—HazCom Program.
 - D. Subpart D—Container Labels and Other Forms of Warning.
 - E. Subpart E—Material Safety Data Sheet (MSDS).
 - F. Subpart F—HazCom Training.
 - G. Subpart G—Making HazCom Information Available.
 - H. Subpart H—Trade Secrets.
 - I. Subpart I—Exemptions.
 - J. Subpart J—Definitions.
 - K. Appendices.
- IV. Legal Authority and Feasibility.
 - A. Statutory Requirements.
 - B. Finding of Significant Risk.
 - C. Finding of Feasibility.
 - D. Petitions for Modification.
- V. The Regulatory Flexibility Act, the Small Business Regulatory Enforcement Fairness Act, and Executive Order 12866.
 - A. Alternatives Considered.
 - B. Consultation with SBA.
 - C. Compliance Costs.
 - D. Regulatory Flexibility Certification and Factual Basis.
 - E. Benefits.
- VI. Other Regulatory Considerations.
 - A. Unfunded Mandates Reform Act of 1995.
 - B. The National Environmental Policy Act of 1969.
 - C. Executive Order 12630: Government Actions and Interference with Constitutionally Protected Property Rights.
 - D. Executive Order 12988: Civil Justice Reform.
 - E. Executive Order 13045: Protection of Children from Environmental Health Risks and Safety Risks.

F. Executive Order 13084: Consultation and Coordination with Indian Tribal Governments.

G. Executive Order 13132: Federalism.

A. Overview of Rulemaking

MSHA's HazCom standard expresses two safety and health principles: miners have a right to know about the chemical hazards where they work and you have a responsibility to know about the chemical hazards at your mine. HazCom requires you to inform miners about chemical hazards. Chemically-related injuries and illnesses in the mining industry indicate that many operators and miners are not as aware of the presence and nature of hazardous chemicals as they should be. Injury and illness reports sent to us describe instances where miners—

- Were using inadequate or improper personal protective equipment,
- Did not know what they had been exposed to that caused their symptoms,
- Failed to follow instructions because they misunderstood or were unaware of the consequences, and
- Inadvertently misused a chemical from an unlabeled container.

We expect the HazCom program—by increasing both knowledge and awareness—to bolster good work procedures, foster safer behavior, and reduce injuries and illnesses related to chemicals. When put into effect at a mine, HazCom should encourage better hazard identification and assessment; more consistent use of personal protective equipment; more informed process decisions; and greater awareness and care when working near hazardous chemicals.

HazCom is an information and training standard about chemical hazards. To be successful in reducing accidents and injuries, your HazCom program must give miners an understanding of chemical hazards by informing them about mine processes and job procedures that can lead to chemical exposures. This can be a difficult technical subject using unfamiliar terms, scientific symbols, and complex physical laws. For the training to be credible, it must balance scientific accuracy against the miner's need to understand.

1. The Need for HazCom

Our existing standards already require you to train miners in occupational health, hazard recognition, and the safety and health aspects of tasks, among other subjects. Except at underground coal mines, you must also label hazardous materials. Other HazCom provisions, however, are not currently required for mines. For

example, currently you are not required to collect material safety data sheets (MSDSs), give copies of hazard information to miners, or keep a list of the hazardous chemicals at your mine. This rule is intended to ensure that your mine has a program that emphasizes chemical hazards.

OSHA's HCS has evolved to apply to all industries in OSHA jurisdiction since it was originally promulgated in 1983 and, consequently, it already impacts some mines. Because of the HCS, manufacturers began sending labeled chemicals and providing MSDSs with product shipments to mines. Some mine operators began labeling their products and sending MSDSs with their products to help customers meet OSHA's HCS requirements. Many operators have segments of their business in OSHA jurisdiction and have created company-wide programs that brought their MSHA properties, as well as their OSHA properties, into compliance with the HCS. Some operators began complying with OSHA requirements in anticipation of a similar MSHA standard, using the unregulated interval as a time to assimilate the requirements into their mine's standard operating procedures. Although some operators on their own initiative have established programs that meet HazCom's provisions and goals, and have integrated OSHA's HCS requirements into the cultures of their mines, most have not made that effort or fully met those objectives.

Coal mine example. In a 1997 case investigated by MSHA, an eastern Kentucky coal miner was periodically assigned to seal permanent brattices using a highly alkaline mortar. The miner had noticed after these assignments that his hands felt as if they were burning. He thought this resulted from the mortar.

Although the operator assigned the miner other jobs for a while, the burning sensation did not go away and the miner was eventually returned to brattice work. On the Friday night after the reassignment, the miner's hands were burning painfully, and the raw, irritated skin eventually erupted in angry, oozing sores. On Sunday, the miner was hospitalized and placed on an intravenous antibiotic. He spent 6 days in the hospital and missed 2 weeks of work.

During his recuperation, his physician referred the miner to a dermatologist, who asked the miner to get a copy of the mortar's MSDS in order to evaluate the problem and provide the proper treatment. When the miner asked the company for a copy of the MSDS, the safety director at first said he would

have to arrange for it and then later refused to give it to him, saying that the miner had no right to the information.

Metal and nonmetal mine example. In another recent case at a large Arizona copper mine, a tailings pond was so acidic it was damaging the system's pumps. The company hired a contractor to place lime in the pond to neutralize the acid and assigned a miner to the project, a job he had never done, and one presenting hazards the miner had never been trained for.

About 4:00 p.m., the miner, trying to get the work done, walked down the slope of the pond and stepped onto an area of lime that appeared solid. His right leg sank into the lime up to his hips and he had to put his other leg into the material before he could get out. No emergency showers were available at the pond site for washing. Covered in wet lime, the miner drove himself 2 miles to the front gate while calling for help into a two-way radio.

Through a series of unfortunate circumstances, the victim was not admitted to a hospital until 5:25 p.m. After stabilizing him, the hospital staff moved him the next day to the burn center, where he spent over a month with second- and third-degree burns over the lower half of both legs and the upper part of his right leg. He missed more than 2 months of work at the mine, returning to restricted duty while receiving a series of skin grafts.

Chemical hazards in mining. Between 1984 and 1989, the National Institute for Occupational Safety and Health (NIOSH) surveyed almost 500 individual mines covering 70 commodities and about 60,000 miners for the National Occupational Health Survey of Mining (NOHSM). NOHSM documented over 10,000 individual hazardous chemicals and mixtures of hazardous chemicals to which miners could be exposed.

Chemicals in the mining industry pose a range of hazards, from mild health effects to death. Some chemicals cause or contribute to chronic health problems, such as heart or kidney disease or cancer. The relationship between these injuries and illnesses and exposure to a chemical can be obscured by years of latency between the exposure and the onset of symptoms. Other chemicals cause acute injuries or illnesses such as dermatitis, burns, and poisonings. Some chemicals pose hazards by contributing to fires and explosions.

In considering a HazCom standard, we reviewed reports of chemically-related injuries and illnesses reported to MSHA. From January 1990 through December 1999, the mining industry

reported over 2500 chemical burns. More than 1,200 of these burns were lost work time cases, involving over 50 commodities, more than 60 job classifications, and exposures to chemicals at all sizes and types of mines. Bituminous coal mines reported the most chemical burns, and crushed and broken limestone mines reported the most in the metal and nonmetal industry. This same accident and injury data indicated more than 400 poisonings. This data takes into account only some of the acute effects reported as a result of chemical exposures and does not include the chronic effects that we know also occur.

Some operators have a comprehensive HazCom program in place; others have some elements of a HazCom program; and some have none. We intend the HazCom standard to ensure that all operators give all miners the information, training, and access needed to protect themselves from chemically-related injuries and illnesses. HazCom unifies, focuses, and clarifies existing requirements and fills voids in miner protection.

2. The Major Provisions of HazCom

Hazard determination. You must identify the chemicals at your mine and determine if they can present a physical or health hazard to miners. If you produce a chemical, such as gold, molybdenum sulfide, calcium oxide (lime), sand, and phosphates, among others, you must review available scientific evidence to determine if the material is hazardous. Some of the chemicals you produce that result from a chemical reaction, such as nitrogen oxides from blasting, may already be addressed on the MSDS for the original chemical. In this example, the original chemical is the explosive. For a chemical or mixture brought to your mine, such as diesel fuel, lubricants, solvents, and paints, you can rely on the evaluation performed by the chemical's manufacturer or supplier.

HazCom program. You must develop, implement, and maintain a written comprehensive plan to formalize a HazCom program. The program must include provisions for container labeling, collection and availability of MSDSs, and training of miners. It also must contain a list of the hazardous chemicals known to be present at the mine; how you will inform miners of the hazards of non-routine tasks and of chemicals in unlabeled pipes. If your mine has more than one operator or has an independent contractor onsite, it must also describe how you will inform them about the chemical hazards and protective measures needed.

Container labeling. A label is an immediate warning about a chemical's most serious hazards. You must ensure that containers of hazardous chemicals are marked, tagged, or labeled with the identity of the hazardous chemical and appropriate hazard warnings. The label must be in English and prominently displayed. We are not requiring you to label mine products that go off mine property though you must provide the information if a customer asks for it.

Material safety data sheet (MSDS). A chemical's MSDS provides comprehensive technical and emergency information. It serves as a reference document for operators, exposed miners, health professionals providing services to those miners, and firefighters or other public safety workers. You must have an MSDS for each hazardous chemical at your mine. The MSDS must be accessible in the work area where the chemical is present or in a central location readily accessible to miners in an emergency.

HazCom training. You must establish a training program to ensure that miners understand the hazards of each chemical in their work area, the information on MSDSs and labels, how to access this information when needed, and what measures they can take to protect themselves from harmful exposure. You may already cover some of this information in your current training program. If so, you do not have to re-train miners in topics they have already been trained in.

Making HazCom information available. You must provide miners, their designated representatives, MSHA, and NIOSH with access to the materials that are part of the HazCom program. These include the HazCom program, the list of hazardous chemicals, labeling information, MSDSs, training materials, and any other material associated with the HazCom program. You do not have to disclose the identity of a trade secret chemical except when there is a compelling medical need.

3. The Basis for the HazCom Interim Final Rule

In addition to the requirements in the Federal Mine Safety and Health Act of 1977 (Mine Act) and other applicable legislation, we based our interim final rule primarily on comments received in response to the Advance Notice of Proposed Rulemaking (ANPRM), the Notice of Proposed Rulemaking, and the public hearings. We also considered—

- The comments received in response to our recent Notice in the **Federal Register**;
- Our experience in the mining industry; and

- The related standards of other Federal agencies.

To the extent practical, the substance of our HazCom requirements is the same as that in OSHA's HCS. We developed some provisions to be consistent with other MSHA standards, such as the retention period for training records. Two areas where our standard significantly differs from OSHA's are in the inclusion of hazardous waste among the chemicals of concern and the omission of a requirement to label products going off mine property. OSHA's HCS exempts certain hazardous wastes because there are employee protections in other rules which address these hazards, such as 29 CFR 1910.120, Hazardous Waste Operations and Emergency Response (Hazwoper) and EPA's regulations under the Resource Conservation and Recovery Act of 1976 (RCRA). Because we do not have standards that address miners' exposure to hazardous waste, we needed supplemental requirements to ensure that miners working with hazardous waste understand the associated hazards and take precautions.

HazCom does not require you to label products that go off mine property. When the product leaves mine property, however, you must comply with the OSHA HCS which requires hazardous chemicals to be labeled.

With few exceptions, if your HazCom program complies with OSHA's HCS, it also will comply with this interim final rule. We will publish a Compliance Guide to help you understand the application of this rule. It will contain numerous examples, suggestions, and explanations of how we interpret the interim final rule.

B. Regulatory History

Petition for Rulemaking. On November 2, 1987, the United Mine Workers of America (UMWA) and the United Steelworkers of America (USWA) jointly petitioned us to adapt OSHA's HCS in both coal and metal and nonmetal mines and to propose it for the mining industry. They based their petition on the need for miners to be better informed about chemical hazards.

In their petition, the UMWA and USWA argued that miners deserve protection equal to that of other workers. To support their position, the petition cited an incident in which miners at an iron ore mine were experiencing adverse health effects. These miners asked the operator for MSDSs for the flotation chemicals used at the mine to determine the identity of the chemical causing the symptoms. Although the State in which the mine was located had a right-to-know law,

this law did not cover mines. Because we did not have a standard to require the operator to provide MSDSs to miners, the operator refused several times to provide the requested MSDSs. The operator finally provided the MSDSs after lengthy negotiations. The local union used the information provided in the MSDSs to discuss safeguards with the company.

The petition also specifically noted that work at both surface and underground coal and metal and nonmetal mines exposes miners to a variety of hazardous chemicals. For example, the petition stated that explosives contain organic nitrates that produce nitrogen oxides and ammonia when detonated; roof bolting systems contain plastic resins and reactants; solvents used in equipment maintenance are both toxic and flammable; and mill reagents can release hydrogen sulfide, cyanide, or other dangerous chemicals.

Preliminary rulemaking. In response to this petition, we issued an advance notice of proposed rulemaking (ANPRM) on hazard communication on March 30, 1988 (53 FR 10256). In the ANPRM, we indicated that we would use the OSHA HCS as a basis for our standard and requested specific comments on a number of related issues. We published a notice of proposed rulemaking on hazard communication for the mining industry on November 2, 1990 (55 FR 46400). We also held three public hearings in October 1991—one each in Washington, DC; Atlanta, GA; and Denver, CO. The record closed on January 31, 1992.

Public response. We received a wide variety of comments on our ANPRM and proposed rule. Commenters included both small and large mining companies; a variety of trade associations, including those representing specific minerals; State mining associations; chemical and equipment manufacturers; national and local labor unions; a member of Congress; and two Federal Agencies. There were a combined total of 121 written comments submitted in response to the ANPRM (50), the proposed rule (63), and the re-opening of the record (8), as well as oral testimony presented at public hearings.

Limited reopening of the record. While we were working to finalize this rulemaking, Congress passed several laws which affected our rulemaking procedures. These statutory mandates and related Executive Orders require us to evaluate the impact of a regulatory action on small mines;¹ State, local, and

tribal governments;² and the health and safety of children.³

In addition, we requested comments on the information collection and paperwork requirements of certain provisions of the proposal, now considered as an information collection burden under the expanded definition of "information" under the Paperwork Reduction Act of 1995.⁴

Most MSHA regulations do not require an evaluation of their impact on the environment. Health standards do, however. This was brought to our attention and we took this opportunity to remedy the oversight. We requested comments on the effect of the proposed rule on the environment because the proposal had not.⁵

We reopened the rulemaking record on March 30, 1999 (64 FR 15144) to receive comments on the impact of the proposed rule in accordance with these regulatory mandates and Executive Orders. The record closed on June 1, 1999.

Public response to limited reopening. We received seven comments, mostly from trade associations and labor organizations, on this limited reopening of the rulemaking record. The National Mining Association (NMA) urged us to reopen the rulemaking record in its entirety because the information in the record is outdated since the proposal was published on November 2, 1990. The NMA indicated this action would improve the effectiveness and quality of the HazCom standard because sectors of the mining industry that have incorporated OSHA's HCS can provide us with their experience under such program. Consol, Inc., a large mining company, stated that we need to address in the HazCom standard recent changes in the OSHA HCS regarding electronic access to MSDSs and microfiche maintenance of these documents. The National Stone Association (NSA)

Regulatory Flexibility Act of 1980, Pub. L. No. 96-354, 94 Stat. 864 (1980) (codified as amended at 5 U.S.C. 601-612).

² The Unfunded Mandates Reform Act of 1995 (2 U.S.C. 1501 *et seq.*); and Executive Order 13084, Consultation and Coordination with Tribal Governments.

³ Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks.

⁴ Pub. L. No. 104-13, 109 Stat. 163 (1995) (codified as amended at 4 U.S.C. 3501-3520). When we published the HazCom proposal, the information collection and paperwork requirements were not an information collection burden under the 1980 Paperwork Reduction Act because they were third-party disclosures. Under the Paperwork Reduction Act of 1995, agency rules that require businesses or individuals to maintain information for the benefit of a third-party or the public, rather than the government, are covered by the Act under the definition of "information."

⁵ The National Environmental Policy Act (NEPA) of 1969 (42 U.S.C. 4321 *et seq.*).

commented on the need to promulgate a HazCom standard in light of our new miner training regulations applicable to surface aggregate mines. Finally, the United Mine Workers of America (UMWA), and Jim Weeks, a consultant to the UMWA, objected to the delay in promulgating a final standard.

We disagreed with commenters on the need to reopen the rulemaking record in its entirety. Unlike general industry, the mining industry is narrowly composed of two sectors, coal and metal and nonmetal. Because of our frequent presence on mine properties, we have determined that there are no substantial changes in the mining industry which would require changes in the provisions of this final standard. Changes experienced by the mining industry since the publication of the HazCom proposal in 1990 do not rise to a level of change in "core" circumstances so material in nature as to entail a modification of the final standard. Substantive rulemaking issues and regulatory alternatives have not changed since the record closed in 1992 and, consequently, the evidence in the rulemaking record is current.

We understand commenter's desire to provide more information regarding their experience under the OSHA HCS standard. Our rulemaking record, however, contains numerous comments concerning the mining industry's experience with OSHA's HCS. We have considered all these comments, and the final standard reflects the public's recommendations where they do not undermine the ultimate issue of protecting the safety and health of miners. For example, some commenters indicated their experience regarding OSHA's MSDS requirements and suggested that we include a provision on electronic access to MSDSs; simplify the proposal regarding the content of MSDSs; use terms that are consistent with the Mine Act instead of the OSH Act; simplify the requirements regarding inclusion of MSDSs with initial shipment of product; and require retention of MSDSs for a period of less than 30 years.

In response to these comments, the HazCom final standard provides for electronic access to MSDSs; uses terms such as "miner" and "mine operator" instead of "employee" and "employer" to be more consistent with the language of the Mine Act; streamlines and clarifies the provisions on the format and content of MSDSs; and requires the operator to keep the MSDS at the mine for as long as the chemical is known to be present at the mine, instead of 30 years as OSHA requires. While MSHA's HazCom standard is generally consistent

¹ The Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA) Amendments to the

with OSHA's HCS, we made changes to the final standard from the proposal in recognition of comments received from the mining industry concerning their experience under OSHA's HCS. These changes also recognize that the affected regulated community is smaller and more homogeneous than the industries regulated by OSHA.

On the applicability of the new part 46 training standard, we concluded that hazard communication can best be accomplished by establishing miner training requirements separate from part 46. The new part 46 training regulations are broad, covering many different training needs. Part 46 does not cover all of the specific aspects of training required under this final standard. For example, part 46 does not require training about how to read an MSDS. We developed the training aspects of HazCom to be fully compatible with existing standards.

HazCom does not require you to revise your part 46 training program or plan in order for it to be credited toward complying with the more specific hazard communication training requirements in this interim final rule. The training required under HazCom is directly applicable to the training in 30

CFR part 46 that involves hazard recognition and avoidance, mandatory health and safety standards, and warning labels. Hours spent on HazCom training can be credited to part 46, as well as part 48, training as appropriate.

II. Paperwork Reduction Act

When we published the HazCom proposal in 1990, its information collection and paperwork requirements were not an information collection burden under the 1980 Paperwork Reduction Act because they were third-party disclosures. In August 1995, the Office of Management and Budget (OMB) published its final rule (60 FR 44978) implementing the new Paperwork Reduction Act of 1995 (PRA 95). These OMB rules expanded the definition of "information" to clarify that PRA 95 also covered Agency rules that required businesses or individuals to maintain information for the benefit of a third-party or the public, rather than the government. The requirements for information collection and dissemination in HazCom are now an information collection burden because of this expanded definition. Almost all HazCom provisions fit this definition: §§ 47.11, 47.21, 47.22, 47.31, 47.32,

47.33, 47.41, 47.42, 47.43, 47.44, 47.45, 47.51, 47.52, 47.53, 47.61, 47.62, 47.63, 47.71, 47.72, 47.73, 47.74, 47.75, 47.76, and 47.77. The interim final rule also removes the labeling requirements from existing §§ 56.16004, 57.16004, and 77.208. We have submitted the interim final rule to OMB for its review and approval under § 3507 of PRA 95.

Request for public comments. Send your comments on the information collection requirements in this interim final rule to the Office of Information and Regulatory Affairs, OMB, Attention: Desk Officer for MSHA, 725 17th Street NW., Room 10235, Washington, DC 20503 by December 4, 2000.

Description of requirements. HazCom is primarily an information collection and dissemination rule. The annual information collection burden includes the time to inventory chemicals, determine the hazards of chemicals present, develop a HazCom program, develop or obtain labels or MSDS's as necessary, prepare training materials and train miners, and provide copies of HazCom materials. The information collection and paperwork burden encompasses each section of this part, as summarized in Table 1.

TABLE 1.—DESCRIPTION OF INFORMATION COLLECTION PROVISIONS

Provision	Information collection burden
Written HazCom Program	Prepare, administer, and review annually; determine hazards of chemicals; list hazardous chemicals at the mine.
Labels or other warnings	Prepare for hazardous chemicals produced; maintain legibility and accuracy.
Material Safety Data Sheets	Develop for hazardous chemicals produced; obtain for other hazardous chemicals; maintain availability and accuracy.
Training Program	Develop or obtain training courses and materials; conduct initial training for miners; train miners about changing hazards; administer program.
Copies of HazCom information	Distribute written HazCom program information to miners, miners' representatives, and customers when requested; distribute to other operators.

All written information can be either paper or electronic format provided that you meet access requirements.

Description of respondents. The respondents are operators, including independent contractors. The interim final HazCom rule will be applicable to all 21,166 operations under MSHA jurisdiction: 2,459 surface and underground coal mines; 3,801 coal contracting firms; 11,337 surface and underground metal and nonmetal (M/NM) mines; and 3,569 M/NM contracting firms.

We estimate that 33% of small mines and 43% of large mines (15% of coal and 19% of M/NM mines employing <20 miners, 17% of coal and 33% of M/NM mines employing 20 to 500 miners, and 100% of coal and M/NM mines employing >500 miners) have an

existing hazard communication program that complies with all or part of the provisions of HazCom. The percentage of mines complying with a specific HazCom requirement varies depending on the type of mine and the specific provision. For example, some mines label containers and keep MSDSs, but do not have a written program or provide HazCom information to miners. As a matter of corporate policy or to comply with State hazard communication or right-to-know laws, most existing HazCom programs are modeled on OSHA's HCS. For these reasons, we believe that you can adjust your existing program to comply fully with HazCom with little effort and few resources.

We assumed that most independent contractors conduct some work at

locations under OSHA jurisdiction and would have an existing hazard communication program. The contractor's program, however, may need modification for a particular mine. The magnitude of the burden for any individual mine operator or independent contractor, therefore, will vary greatly by the size, type, and location of the operation. For the purpose of estimating burden, we assumed that there are existing hazard communication programs at 65% of small (<20 miners) coal contractors, 75% of large (≥20 miners) coal contractors, 70% of small (<20 miners) M/NM contractors, 74% of large (20–500 miners) M/NM contractors, and 100% of M/NM contractors employing >500 miners.

Information Collection Burden. The greater portion of HazCom's burden accrues when you are developing and implementing the program. We

annualized this initial burden. We summarize the total first-year, start-up information collection burden for HazCom in Table 2. We summarize the

total annually recurring information collection burden in Table 3.

TABLE 2.—FIRST-YEAR INFORMATION COLLECTION BURDEN*

Provision	Number of respondents	Number of responses	Responses/ respondent	Hours/ response	Total hours	Associated costs**
Develop Program	14,239	14,239	1	12.2	173,366	\$446,826
Review Existing Program	7,620	7,620	1	6.3	48,144	125,416
Develop MSDS	3,544	3,894	1.1	2.9	10,222	26,074
Develop Training Program	13,007	13,007	1	6.9	89,196	229,257
Prepare Initial Training	13,007	13,007	1	2.0	26,014	83,632
Total		51,767		6.7	346,942	911,205

* Discrepancies due to rounding.

** Adjusted first-year costs annualized (See Regulatory Economic Analysis, Chapter VII.)

TABLE 3.—ANNUAL INFORMATION COLLECTION BURDEN *

Provision	Number of respondents	Number of responses	Responses/ respondent	Hours/ response	Total hours	Associated costs**
Update Program	14,239	14,239	1	1.7	24,767	\$911,890
New Operators Develop Program	889	889	1	13.2	11,772	437,982
Label Containers	1,717	6,712	3.9	0.20	1,343	62,309
Update MSDS	3,544	974	0.27	1.5	1,460	53,211
Maintain MSDS	14,239	637,720	44.8	0.05	31,886	568,744
New Operators Develop MSDS	889	1,019	1.1	3	3,057	113,578
Manage Training Program	13,007	13,007	1	1.7	22,299	818,776
New Operators Prepare Training	889	889	1	8.6	7,664	301,063
Training Records	13,007	187,149	14.4	0.05	9,365	167,518
Provide Info to Miners	14,239	21,961	1.5	0.20	4,395	78,817
Providing Info to Customers	14,239	233,860	16.4	0.20	46,772	832,582
Total		1,118,419		0.15	164,780	4,346,470

* Discrepancies due to rounding.

** Adjusted first-year costs annualized (See Regulatory Economic Analysis, Chapter VII.)

III. Discussion of the Interim Final Rule

In preparing this interim final rule, we attempted to address the concerns of all commenters, while ensuring that miners and operators have the information necessary to work in a safe and healthful environment.

Commenters supported widely different ideas about a HazCom rule for the mining industry. Some said we do not need one because existing standards require hazard training and labeling; others said it is vital to allow miners to exercise their right-to-know. Some said the rule would be a great burden; others said that they already have such a program. Some said they want a rule just like OSHA's; others said we should resist the temptation to duplicate OSHA's HCS. Some wanted a separate standard for the coal mining industry; others recommended that we establish separate standards for mine operators and independent contractors; others wanted a single Federal standard. Some urged us to include specific language to ensure that individual States do not promulgate or enforce any requirements related to hazard communication that conflict with the Federal standard.

Commenters recommended that the final rule be practical, strike a balance between providing too much information and too little, and allow for global harmonization with international standards.

In response to the different needs for hazard communication in the mining industry, and the broad range of comments, the provisions of the interim final rule are performance-oriented and flexible enough that operators, including contractors, can comply using a single program to meet OSHA's HCS and our HazCom standard. We considered adopting the OSHA HCS in its entirety, but some requirements of OSHA's HCS are not relevant to mining. OSHA's HCS is supplemented by other OSHA standards for which we have no parallel. OSHA, for example, has comprehensive standards specifically covering hazardous waste operations, laboratories, and medical records. To the extent practical, the substance of our interim final rule is the same as that in OSHA's HCS. We added provisions where needed, however, to give miners the same protection as employees in general industry.

A. Subpart A—Purpose and Scope of HazCom

The proposed rule included a "scope and application" section stating where HazCom applied and listing exemptions from coverage. In the interim final rule, we renamed this section "operators and chemicals covered." We moved the exemptions, which were a part of the scope in the proposal, to the end of the HazCom interim final rule so that the substantive requirements would be up front where they are more accessible. (See § 47.81 and § 47.82, Exemptions.) We will discuss exemptions later in the preamble, consistent with their placement in the interim final rule.

1. § 47.1 Purpose of a HazCom Standard

A few commenters suggested that we include a "purpose and intent" section in our HazCom interim final rule, in addition to the "scope and application" section. In response, the interim final rule adds language to clarify our intent. The purpose of HazCom is to reduce chemically-related injuries and illnesses by ensuring that you—

- Know what chemicals are at your mine;
- Determine which are hazardous and the nature of their hazards;
- Establish a HazCom program; and
- Inform each miner who can be exposed, and other on-site operators whose miners can be affected, about those hazards and appropriate protective measures.

2. § 47.2 Operators and Chemicals Covered

The proposal would have applied “to all operators who produce or use hazardous chemicals in their workplaces” and to “any chemical which is known to be present in the workplace in such a manner that employees are exposed * * *.” The interim final rule applies “to any operator producing or using a hazardous chemical to which a miner can be exposed * * *.” By modifying the language in the interim final rule, we clarify our intent that you must find out what hazardous chemicals are present at your mine and evaluate whether it is possible for miners to be exposed under normal conditions of use or in a foreseeable emergency. You do not have to determine that miners are exposed or the level of their exposure. The interim final rule is consistent with the purpose of HazCom and OSHA’s HCS. Although the proposed rule seemed to apply only where there was an actual exposure, the proposal defined “exposed” as “subjected, or potentially subjected, to a hazardous chemical * * *.” The preamble to the proposal further explained that this definition included “current and potential (accidental and possible) exposures.”

The potential for exposure to a hazardous chemical, such as diesel fuel, motor or hydraulic oils, lubricants, paints, and solvents, occurs at virtually every mining operation although exceptions do exist. While considering HazCom, we reviewed data and documents from inspections and investigations, chemical inventories, technical reports, accident and injury data, and sampling data confirming that exposure to chemicals occurs in all types and sizes of mines.

If you have already implemented a HazCom program at the mine, and that program complies with the requirements of OSHA’s HCS, it should also comply with our HazCom interim final rule. You will still have to check your existing HazCom program to make sure it complies with the interim final rule.

Potential exposure. The interim final rule retains the proposal’s intention concerning the potential for exposure.

Although we interpret the term “foreseeable” broadly in the context of this rule, we also intend HazCom to be practical.

NIOSH commented on our HazCom proposal and stated that the scope should not limit coverage of HazCom only to hazardous chemicals “under normal conditions of use or in a foreseeable emergency.” NIOSH stated that HazCom should cover all hazardous chemicals present on mine property, regardless of intended or expected exposures. Specifically, NIOSH stated that:

All workers should be informed about the nature of the risks associated with the hazardous materials found in their workplace. “When working in the presence of a hazardous material, hazards are always present even under work situations most carefully designed to eliminate risk” (NIOSH 1974a). The informed worker is prepared to minimize the impact of a hazardous materials incident. The uninformed worker is at risk of causing a hazardous materials incident or contributing to adverse health effects.

We partly agree with NIOSH’s comment. But we also agree with those commenters who expressed concern that by addressing remote or trivial hazards, the purpose of HazCom would be defeated and its effectiveness diluted. If miners are flooded with warnings about all chemical hazards, including those they perceive as remotely possible, they may be more likely to ignore warnings for the more probable hazards. We also believe that it would be unnecessarily burdensome to require you to address every conceivable chemical hazard, regardless of how unlikely that hazard is to materialize.

For example, suppose a chemical liquor, or caustic, is only present in a certain area of your bauxite mill and you have miners in this area working near pipes carrying the caustic. You have other miners who work in the farthest area of your operation who never go near the mill or the caustic. Although you could conceive of circumstances where the miner who does not work near the pipes can be exposed, it would not be reasonably foreseeable. On the other hand, you can conceive of circumstances where the miner who works daily near the pipes can be exposed. The caustic can eat through a pipe; a truck can back into a pipe; pressure can cause joints to leak. Exposure is foreseeable under these circumstances: strong caustics can eat through pipes; trucks have run into pipes before; and pressure often causes leaks.

Almost all miners are exposed to crystalline silica, but the potential for illness is related to their exposure to the

respirable fraction of dust. For example, your miners work on a concrete floor and there is silica in the concrete. If no cutting, grinding, or other activities happen to the floor that would release the respirable fraction, the potential for exposure to respirable crystalline silica is remote, and the miners are not potentially exposed to a hazard. If you must remove the floor through grinding, cutting, or crushing, the potential for exposure is foreseeable and the concrete would become a hazardous chemical subject to HazCom. Base your decision to include a chemical in your HazCom program on its hazards and the potential for miner exposure, not the risk. A chemical’s hazard is in its inherent characteristics. Risk is the likelihood of expression of that hazard in a given situation.

The interim final rule sets boundaries on the chemicals and operators covered by HazCom. It is our judgment that these boundaries provide miners the protections intended by the Mine Act without causing you to expend resources on remote possibilities.

Significance of exposures. One of the most frequent suggestions received on the HazCom proposal was that it should apply only where significant exposure to a chemical occurs. These commenters asserted that a significant exposure involved a likelihood of material impairment of health to a miner, such as when a miner was overexposed to a hazardous chemical. HazCom’s most misunderstood concept was its relationship to risk and significant exposure. Miners are frequently and seriously harmed by chemicals in their work area, but HazCom is not a risk-based health standard for measuring exposures, requiring controls, or providing personal protective equipment. Other standards address the problems of significant risk and the methods of controlling it. HazCom is an information and training standard intended to diminish risk by ensuring that operators provide miners with a level of knowledge that allows them to reduce their exposures by recognizing potential hazards and by following safe work practices.

HazCom is based on the premise that chemicals can have inherent characteristics that pose hazards and miners have a right to know what those hazards are and what their employer is doing to protect them. Many chemicals are considered to be hazardous because evidence indicates that they can threaten a miner’s physical well-being or harm the miner. Determining that a chemical is hazardous is not the same as determining that there is a significant risk of any specific physical or health

effect occurring from its use under a particular set of circumstances at the mine.

HazCom is being promulgated to *anticipate* the possibility of harm or loss from chemical exposures and provide information on ways to avoid them. It is not to regulate chemical use. It does not prohibit or limit the use of chemicals in the mining industry or prescribe controls to reduce exposures. HazCom's effectiveness is dependent on the operator's and miner's knowledge and awareness of hazards. Like any training or information standard, it is through hazard identification and awareness that HazCom addresses hazardous chemical exposure and prevents injuries and illnesses.

B. Subpart B—Hazard Determination

A hazardous chemical is any chemical whose properties can pose a physical or health hazard. It can be a pure substance (an element or chemical compound), a mixture, or an ingredient in a mixture. A hazardous chemical can be in any physical form: Solid, liquid, or gas. The likelihood of harm may be greater under some circumstances than others, but the potential to do harm is inherent in the chemical's properties. We discussed exposure and its significance under "purpose and scope" in this preamble.

HazCom's definition of hazardous chemical is consistent with the proposal and OSHA's HCS. We arranged the criteria for determining whether a chemical is hazardous in Table 47.11 and re-stated the proposal's language in a simpler way.

1. § 47.11 Identifying Hazardous Chemicals

HazCom is most effective when the criteria for determining the hazards of a chemical are applied consistently. Most physical hazards of elements and compounds are well-known and can be verified in a laboratory through testing. Physical hazards of mixtures can be determined the same way. Health hazards, however, are generally more complex, requiring studies of living systems, and can take much longer. Most health hazards of chemicals are determined through animal studies by extrapolating data from the effects on animals to predict the effects on humans.

We consider a chemical to be a physical hazard when there is scientifically valid evidence that it is combustible; a compressed gas or liquid; an explosive; a flammable aerosol, gas, liquid, or solid; an organic peroxide; an oxidizer; a pyrophoric (capable of spontaneously igniting); unstable and reactive; or water-reactive. Scientifically

valid evidence means that a study was conducted or data obtained in a highly reliable manner that takes into consideration the margin of accuracy and consistency.

We consider a chemical to be a health hazard when there is statistically significant evidence that it can cause acute or chronic health effects. Statistically significant evidence supports a conclusion with a high level of confidence, typically 90% to 95%. This means that there is only a 5% to 10% probability that the observed results are due to chance. Health hazards include chemicals that cause cancer; irritate or corrode tissues; or cause a sensitization reaction. It also includes chemicals that damage the reproductive system, the liver, the kidneys, the nervous system (including psychological or behavioral problems), the blood or lymphatic systems, the digestive system, or the lungs, skin, eyes, or mucous membranes.

Hazard determination methods. The final HazCom rule, like the proposal, includes two basic ways for determining whether or not a chemical is hazardous: One for chemicals brought to the mine and the other for chemicals produced at the mine. In every instance we reviewed, operators producing chemicals also brought chemicals to their mines. We intend that the hazard determination provisions of HazCom apply to all hazardous chemicals produced at the mine or brought onto mine property, even if they are not covered under other MSHA standards.

A number of commenters wanted the hazard determination requirement in the proposal changed to read: "Operators who ship chemicals shall determine the chemicals' hazards under conditions of intended use based on our standards in 30 CFR parts 56, 57, 71, and 75." A number of commenters wanted operators who received chemicals to determine their hazards based solely on whether the chemical is regulated by us and whether it presents a physical or health hazard under conditions of intended use.

The interim final rule does not use the word "ship" instead of "produce"; does not add the phrase "under conditions of intended use"; and does not limit the chemicals covered to those listed in our existing standards. We enforce exposure limits for chemicals listed by the American Conference of Governmental Industrial Hygienists (ACGIH) in their list of Threshold Limit Values (TLV). This list does not address all chemicals known to be present on mine property. These suggestions would have significantly changed the intent and scope of HazCom. It would emphasize

the hazards associated with the manner or process in which chemicals are used by persons off mine property, instead of emphasizing the hazards to miners.

2. Chemicals Brought to the Mine

The interim final rule is substantively the same as the proposal in its requirements for a chemical brought to a mine. Under the interim final rule, you must review the chemical's label for any hazard warning and its MSDS for more detailed information. If the label or MSDS indicates a hazard, consider it hazardous. You must then include the chemical on the list of hazardous chemicals at the mine; keep a copy of the MSDS accessible to miners; and train miners about the hazards, what you are doing to control these hazards, how to prevent or reduce the exposure, and how to protect themselves from injury or illness. If you do not want to rely on the chemical manufacturer or supplier, you may evaluate the chemical yourself. If you do, we will require you to demonstrate that you have conducted a thorough evaluation of the available evidence.

The number and types of different hazardous chemicals brought to the mine depends on the size and type of the operation. These chemicals can range from bulk raw materials, such as ammonium nitrate for use in blasting agents, to small quantities of highly hazardous chemicals used in quality control laboratories. Diesel fuel, antifreeze, motor or hydraulic oil, brake fluid, lubricants, adhesives, paints, and solvents are a few of the materials commonly brought to mining operations that would require you to ask the question: Is this a hazardous chemical?

The interim final rule requires you to make a hazard determination for each chemical at your mine to which miners can be exposed regardless of how the chemical is used. Based on your experience, we expect you to anticipate any likely misuse of the chemical, as well as accidents. This intention is further emphasized in the written HazCom program, which requires you to document how you determined the hazards of the chemicals at your mine and to make a list of those found to be hazardous. For a chemical brought to the mine, you need to review its label and MSDS. If, however, you intend to use the chemical in a manner not intended by the manufacturer or supplier, you must determine if your conditions of use create any different hazards.

3. Hazardous Waste

Hazardous waste can be either brought to the mine or produced at the

mine. Hazardous waste regulated by the Environmental Protection Agency (EPA) under the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, was exempt from the labeling and MSDS requirements under the proposal. If a hazardous waste is brought to the mine without an MSDS, however, and you could not obtain one, the proposal would have required you to determine its hazards using the same methods as if it had been produced at the mine: You would either have had to test it or have had to use any valid, available, scientific information. We expect that, in most cases, the shipping manifest or EPA permit accompanying the waste will say what it is. Even if the ingredients are listed generically, you should request that the supplier provide you with hazard information. We did not propose to exempt EPA-regulated hazardous waste from the training and other requirements of HazCom.

Because the proposal would have required you to have information on the hazards of this waste, and because there is no specific format for the MSDS, it follows that a compilation of such information could be considered an MSDS. You can use this information to develop a label. For this reason, we did not specifically exempt EPA-regulated hazardous waste from the labeling and MSDS requirements in the interim final rule. Rather, we address such waste separately in § 47.43, MSDS for hazardous waste. You must make sure that miners have the best information you can find about the waste's chemical hazards. We suggest for the sake of consistency that you put the hazard information in the same MSDS format as you use for other chemicals.

4. Chemicals Produced at the Mine

The interim final rule, as in the proposal, defines a chemical as any element, chemical compound, or mixture of these and requires you to identify what chemicals you produce at your mine. Chemicals produced at your mine include—

- Those that you mine or process to sell, such as coal or crushed stone;
- The mixtures you create, such as flotation reagents or blasting agents;
- The by-products of mining and milling, such as diesel exhaust, hydrogen sulfide, or gases from combustion or blasting; and
- The materials discarded from mining operations, such as tailings.

Every mine product is a chemical, but not all are hazardous for the purposes of HazCom. You must determine if the chemical has any harmful properties that could pose a physical or health hazard. You must determine what the

hazards and protective measures are so that you can prepare an appropriate label and MSDS. Again, HazCom does not require you to take additional protective action, as might be required by a risk-based rule. HazCom requires you to inform miners about scientifically valid evidence concerning a chemical's hazards, from either your own testing or the published results of other testing or studies.

For example, if your product is sand and gravel or crushed limestone, crystalline silica is likely to be the only hazardous component, and you are already training your miners about its hazards. Because respirable silica is so prevalent in mine products, we will be producing a generic MSDS for you to use if you do not want to prepare one yourself. You will have to ensure that your label identifies the product as containing crystalline silica, which is a human carcinogen. It is only respirable crystalline silica, however, that is a human carcinogen.

Sources for identifying hazardous chemicals. The interim final rule requires that, if you produce a chemical, you must determine its physical hazards based on available evidence or testing. You must determine its health hazards based at least on the findings of the following four recognized authorities or sources:

- Title 30 Code of Federal Regulations (30 CFR) chapter 1.
- American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLV's) and Biological Exposure Indices (latest edition).
- National Toxicology Program (NTP) Annual Report On Carcinogens (latest edition).
- International Agency for Research on Cancer (IARC) Monographs or Supplements.

These sources are basically identical to those listed in the proposal and the OSHA HCS, with the exception that MSHA standards regulating exposure to and use of hazardous substances are referenced instead of OSHA standards. The proposed rule intended that you would not have to look beyond these sources to determine if a chemical was a health hazard. In addition, you must consider a chemical a suspected or confirmed carcinogen if it has been evaluated and listed as such by ACGIH, NTP, or IARC. HazCom does not require you to determine whether the concentration of the chemical in the mine environment exceeds a limit recommended by one or more of these four sources. If there is a potential for harm and a potential for exposure, the chemical is hazardous for the purposes

of HazCom. You must tell your miners about the hazards that are known and give them information relevant to the safe performance of their tasks.

Some commenters recommended that we rewrite this provision to require that "operators who produce chemicals must determine the chemicals' hazards" and not specify the basis for the determination. These commenters felt that this language would make the requirement more performance oriented, would avoid incorporation by reference, and would allow operators to choose the best methods for this assessment based on the best available sources at the time of the assessment. Although the hazard determination criteria rely on the findings of respected and authoritative scientific organizations, these are minimal requirements. The interim final rule allows and encourages you to use the best methods and sources available.

Using ACGIH, NTP, and IARC to determine if a chemical is hazardous. Many commenters strongly opposed including ACGIH, NTP, or IARC in the hazard determination section of the interim final rule. These commenters also objected to our use of IARC and NTP publications as authoritative sources for identifying certain chemicals as carcinogens. Some of these commenters felt that these organizations may identify a substance as a possible human carcinogen based upon the results of a single animal study and that animal studies alone should not be relied on to identify human carcinogens. Others felt that these organizations only considered positive studies (those showing an adverse health effect) and not negative studies (those that were inconclusive or did not show a health effect) when determining that a chemical is a carcinogen or a suspected carcinogen.

Commenters opposed our reliance on an automatic trigger, such as a hazard determination made by one of these organizations, to deem a chemical as hazardous without considering the risk posed in a given situation. One commenter stated that any reference to ACGIH, NTP, or IARC in the rule is inappropriate because these institutions make determinations based on "strength of evidence analysis" and defer "weight of evidence determinations" to regulatory authorities. This commenter felt that, as in our proposed air quality rule, we should adhere to the guidelines of the Office of Science and Technology Policy (OSTP) because HazCom ultimately would reference our final air quality standard. OSTP guidelines address the use of "strength of evidence" and "weight of evidence" analysis in quantitative risk assessment.

Most commenters on our use of these publications opposed such use, stating that including references to these would be an incorporation-by-reference without following the proper rulemaking procedures. They stated that ACGIH's, NTP's, and IARC's decision-making processes are deficient because they restrict public or peer input. They further stated that the absence of public comment and external peer review raises significant questions regarding the quality of any science-based decision-making process. These commenters added that our rulemaking, because it goes through an established process, provides the only basis for establishing valid references for hazard determination purposes.

Some commenters also strongly objected to referencing either the latest edition or subsequent monographs or supplements of these sources because such references fail to advise the regulated community of the standard of conduct to which they are expected to conform. They commented further that we may only incorporate-by-reference materials in existence at the time we promulgate a final rule.

In response to these comments, we wish to re-emphasize that HazCom is not a risk-based rule. A risk-based rule requires us to limit a miner's exposure to a toxic substance or harmful physical agent. This is an information-providing standard to ensure that operators are aware of potential hazards so that they can take appropriate actions to train miners and provide them with information about ways the operator, miners, and others can protect themselves from these hazards. We believe that miners have a fundamental right to know about the hazards in their work area and that operators have a fundamental duty to provide this information. For example, warnings concerning the presence of a radiation source or high-voltage electricity are commonplace, whether or not a person is likely to be exposed or injured. We address risk assessment and risk management in other standards.

Referring to IARC, ACGIH, and NTP documents, in one sense, does incorporate them by reference. We refer to these sources because they contain lists of known hazardous chemicals. Using these lists as a screening tool reduces the resources you would otherwise have to devote to determining if a chemical is hazardous and poses no increased compliance obligations on you.

The use of these references was supported by some commenters because the sources are renowned scientific

authorities. Using the latest editions of the referenced sources of information to establish that a chemical is hazardous is appropriate because it contains the most recent information. We also believe it will be easier for you than requiring a continual, exhaustive literature search, conducting your own chemical testing, or trying to locate a document that is outdated or out-of-print.

If the commenters objecting to the use of these references meant to address whether or not the chemicals are known to be hazardous, the chemicals are listed in the four sources because scientific studies have indicated that they are hazardous. We expect most hazardous chemicals produced at mines to be listed. Other sources not cited in the proposal or interim final rule also can provide valuable information. You can check other reputable sources of scientific information, such as the NIOSH "Registry of Toxic Effects of Chemical Substances," the NIOSH "Pocket Guide to Chemical Hazards," OSHA standards, or chemical databases on the internet.

The alternative to using these four sources as a screening tool would be for you to conduct a thorough search of available literature to determine if the chemical is hazardous in addition to finding any statistically significant, scientifically valid studies that report the chemical's hazards. By using these sources as a screening tool, we intend to minimize the number of literature searches and, thus, the burden.

Using ACGIH, NTP, and IARC to determine a chemical's hazards. If the commenters objecting to the use of the references meant to address the nature of the harm, the circumstances under which the chemical can cause harm, or the level of exposure at which harm becomes likely, we recognize that there may be conflicting information in the scientific literature. We agree that relying solely on the information from these four sources may not be sufficient to determine the health hazards of a chemical. Except for identifying certain chemicals as either carcinogens or suspected carcinogens, these sources contain little specific information on the types of health hazards posed.

Some commenters stated that it would be a great burden on the mining community to find out if recent scientific studies show their product to be a carcinogen or other type of chemical hazard. Although determining the hazards of a chemical you produce could be more time consuming, we do not believe that it is overly burdensome, infeasible, or impractical. An entire segment of the publishing industry exists to inform the mining industry about new production equipment,

legislative and regulatory affairs, commodity pricing, changes in construction specifications, bid proposals, and scientific studies that can affect the commercial value of mining products. We expect that the media, trade associations, or unions will also provide the mining industry with any significant new information concerning the hazards of their products.

Proposed Table 1. To simplify your access to the information from these sources, we compiled a table of all the chemicals listed in them and included this table in the proposal. The table indicated which of the four sources would give you more information about a chemical's health hazards and carcinogenicity. Operators could use the proposed table to determine quickly if the chemical they produced was a health hazard rather than having to refer to the four sources. We thought this would save resources if the chemical was not hazardous. We intended to spare operators from the need to look beyond this table to determine whether a chemical posed a health hazard. We had intended to update this table as needed.

Several commenters agreed that we should allow operators to use proposed Table 1 to determine if the chemicals they produce are hazardous. One of these commenters felt that we should publish this table as an appendix to the rule and that it should state explicitly that operators may use this table to determine whether a chemical is a health hazard rather than having to refer to the four sources. Another of these commenters suggested that we include Chemical Abstract Service (CAS) registry numbers in the table to help operators identify the chemical.

Some commenters asked that we not include the table in the final rule. One commenter felt that the average person would find this list of hazardous chemicals difficult and impractical to use. Others expressed concern that the list may not indicate all the potentially hazardous materials produced or used at the mine and favored the OSHA HCS's one-study approach.

One commenter objected to the proposal's reference to a table in the proposed air quality standard before we published the air quality standards as a final rule. Some commenters supported our intention to reference the final air quality standards in the hazard determination provision. That support, however, was contingent upon our establishing permissible exposure limits (PELs) at levels that prevent material impairment of health or functional

capacity. These commenters further stated:

PEL's and carcinogens validated through the rulemaking process will enable operators who ship chemicals to evaluate whether those chemicals present a health hazard under conditions of intended use. When proposed 30 CFR Parts 58 and 72 are validly promulgated, MSHA should amend proposed 30 CFR Part 46.3(a) to incorporate those provisions.

Although the interim final rule continues to reference NTP, IARC, and ACGIH, it does not include a table of hazardous chemicals. Upon further consideration, we concluded that the list will quickly become outdated as new hazardous chemicals come on the market or new information becomes available, and we could not readily update it. The constant need to update the table would reduce the effectiveness of HazCom because the update would require rulemaking. Instead, we will put a list of chemicals known to be hazardous in the Toolbox that supplements the Compliance Guide for this interim final rule. We intend to place both of these references on our website and provide links to other websites, such as university collections of MSDSs. Access to internet news services, libraries, and databases will allow you to obtain the most recent and reliable information soon after it becomes available.

5. Mixtures Produced at the Mine

The best way to determine the hazards of a mixture is to test the mixture as a whole. You would then use the results of that testing to make a determination as to whether or not the mixture poses a hazard and the nature of the hazard. We recognize that most operators do not have the facilities and equipment to conduct this testing.

For mixtures not tested as a whole, the interim final rule establishes the same criteria as the OSHA HCS (and as proposed) for determining the hazards of the mixture based on its ingredients. You must use available scientifically valid evidence to determine the mixture's physical hazards and rely on available health hazard information for the mixture's ingredients to determine its health hazards.

- You must conclude that the mixture is a health hazard if at least 1% of the mixture is a chemical that is a health hazard.
- You must conclude that the mixture is a carcinogenic hazard if at least 0.1% of the mixture is a chemical that is a known or suspected carcinogenic hazard.

Determining the hazards of mixtures. A number of commenters wanted the

final rule to allow you to determine the hazards of mixtures of chemicals in the same way you would determine the hazards of individual chemical compounds or elements, *i.e.*, under conditions of intended use. They believed that mixtures should not be treated differently from other chemicals, although they may present additional health or physical hazards. These commenters stated that you should—

- (1) test the mixture as a whole;
- (2) if not tested as a whole, determine whether a component of the mixture presents a health hazard under conditions of intended use and if it constitutes a physical hazard; or
- (3) assume that a component presents a health hazard under conditions of intended use and that the mixture presents the same hazard, and use whatever scientifically valid evidence is available on the components of the mixture to determine the mixture's physical hazards.

Several commenters objected to the requirement that if a mixture has not been tested as a whole, you must assume that it will pose the same health hazards and carcinogenic hazards as each of its components. Other commenters recommended that the health hazards of mixtures be based on either experimental evidence or weight of experience and, if known, dosage and exposure. Others argued that the concentration levels of 1.0% for hazardous components of a mixture, and 0.1% for carcinogenic components, had been chosen arbitrarily and that there are no studies showing relevance to these levels with regard to health hazards.

Although we did not choose these levels arbitrarily, we agree that they are not based on specific scientific studies. The interim final rule sets concentration levels of 1.0% for hazardous components of a mixture and 0.1% for carcinogenic components, to be consistent with OSHA's HCS. By being consistent, HazCom reduces your burden by allowing you to use the label and MSDS for hazardous chemicals brought to the mine.

Trace ingredients. The proposal stated that, if you have evidence indicating that a component of the mixture could be released in concentrations that would exceed an established MSHA PEL or ACGIH TLV, or could present a health risk to miners, you must assume that the mixture presents the same hazard. A number of commenters opposed the proposal's reference to the ACGIH TLVs and suggested that the final rule reference only MSHA health standards. Commenters expressed concern that the resources spent on determining the

potential release of a hazardous trace component of a mixture dilutes the resources available to address real hazards. We contend, however, that if a trace ingredient can be released from the mixture at concentrations that can pose a health risk to miners, such as concentrations exceeding its PEL or TLV, this trace component is considered a hazard.

Another commenter recommended that the final rule be more performance oriented and suggested that we reword this section to state:

If the operator has reason to believe that lesser amounts than listed in item (2) could reasonably present a health risk they will be assumed to present the same hazard.

In response to comments, we used more performance-oriented language in the interim final rule. It requires you to assume that a mixture presents the same hazard as a component if you have evidence that the component could be released from the mixture in a concentration that could present a health risk to miners.

For example, the MSDS may indicate that a particular trace component reacts with other components, diffuses into the packaging, or evaporates over time. In this example, if the trace component is hazardous, you must inform miners about this information and its implications for them, and comply with the applicable HazCom provisions.

We do not intend that you conduct research for chemicals brought to the mine; however, you must obtain an MSDS for them to determine whether or not a trace component can be released from the mixture in a hazardous concentration. Our intent is that, if you determine the trace ingredient to present a hazard, then you must include this information in your HazCom training. However, you must determine potential hazards from trace ingredients in hazardous chemicals you produce, including mixtures and by-products of mining activities. This is consistent with MSHA's HazCom proposal and OSHA's HCS.

The interim final rule eliminates unnecessary language but retains generally the same requirement as the proposal. This provision recognizes that even trace components of a mixture could cause harm if a sufficient quantity is released from the mixture.

Crystalline silica. A number of commenters expressed concern that IARC has designated respirable crystalline silica as a probable human carcinogen. Several commenters were concerned that the requirements for determining the hazards of mixtures that had not been tested as a whole did

not take into account that a chemical is hazardous only when it is encountered in a specific physical state or form. Specifically, they felt that the proposed rule would have required you to determine that any untested mixture that contains 0.1% or greater of crystalline silica is carcinogenic, even when the concentration of respirable crystalline silica in the mixture is less than 0.1%. They pointed out that IARC's Monograph No. 42 and Supplement 7 and NTP's proposal to add this substance to its list in its 6th Edition address only the respirable crystalline form of silica as a human carcinogen and not other forms of crystalline silica.

We agree that it is the respirable form of crystalline silica that is designated as a human carcinogen in the sources listed in the interim final rule. Therefore, if the mixture contains 0.1% or greater of crystalline silica, you must determine the percentage that is respirable or capable of being liberated. Any required label and MSDS for products containing concentrations of 0.1% or more of respirable crystalline silica must indicate this potential health hazard. This is consistent with OSHA's HCS. HazCom also requires you to inform miners about the carcinogenic hazard from exposure to respirable crystalline silica.

Physical hazards. Comments on the proposal indicated that you may find it difficult to categorize the physical hazards of some mixtures because of the stratification or deterioration that may occur in these mixtures during storage and handling. To ensure that all hazards of a mixture are properly addressed, this commenter felt that we should require you to use persons who are qualified by education, experience, and training to determine the hazards of a mixture with respect to its use in mines. We expect that most of the information necessary to determine the hazards of a mixture are available in MSDSs or other publications. Because you are the person responsible for making this determination, and often the most qualified, we expect that you will make the determination yourself or select a competent person to do it.

The proposed rule stated that if a chemical is not tested as a whole, you must use "whatever" scientifically valid evidence is available to determine the mixture's physical hazard. The word "whatever" was removed from the interim final rule at the request of commenters.

6. Hazardous Chemical

One commenter felt that "chemical" may be interpreted restrictively to mean

that only the chemicals you produce require a hazard determination. This commenter felt that we should state clearly that all mining products, including minerals, ore, and miscellaneous materials, require a hazard determination. Another commenter recommended that we use the term "hazardous material" rather than "hazardous chemical" because operators and miners are more likely to associate that term with minerals, ores, and other materials that occur naturally.

We use the term "hazardous chemical" in HazCom to be consistent with its use in OSHA's HCS. It is used by a wide variety of industries and has been the subject of much clarification in the 15 years since OSHA promulgated its HCS. We believe that the definition of "chemical" in the proposed and interim final rules is more widely applicable and less open to misinterpretation than the alternatives suggested.

C. Subpart C—HazCom Program

All mines must have a written HazCom program, even if it only documents that you looked at each chemical at the mine, made a hazard determination, and found none to be hazardous. The written program does not have to be lengthy or complicated, and some operators may be able to rely on existing HazCom programs to comply with the requirements of the interim final rule. As mining processes change and as new chemicals are brought onto mine property, you must update your written program to reflect these changes.

1. § 47.21 Requirement for a HazCom Program

This section of the interim final HazCom rule is substantively the same as the proposal and consistent with OSHA's HCS. It requires you to develop, establish, and maintain a written HazCom program. You must ensure that you have an effective method to communicate hazards to miners and other operators at the mine if their miners can be exposed to your hazardous chemicals. You must also retain the written program for as long as a hazardous chemical is known to be at the mine and exposure is possible.

The scope of HazCom, § 47.2, clearly states that the interim final rule applies to all operators with miners who can be exposed to a hazardous chemical "under normal conditions of use or in a foreseeable emergency." The scope applies to all sections of HazCom and all operators at a mine, including contractors. Therefore, we did not need to repeat the language of the scope in

the requirements for the contents of the written program.

You must make the written program available to miners, their designated representatives, and MSHA and Department of Health and Human Services (HHS) personnel. In the interim final rule, the provisions on access and copies are in a new, separate subpart on making HazCom information available.

Generic programs. Some commenters stated that development of the written HazCom program was beyond the capabilities of most operators and would impose a technological and financial burden. Other commenters suggested that we develop a generic written HazCom program for use as an example.

You are responsible for developing a HazCom program for the chemicals that you produce or bring to the mine. Your written program must include all the information that you need—

- To implement the HazCom program;
- To provide hazard information to miners so that they will know what is expected and can participate in supporting the protective measures in place; and
- To ensure that other operators at the mine receive the HazCom information they need.

Although the development and implementation of a HazCom program may pose a technological and financial burden on some small operators, we determined that the interim final rule is feasible. We discuss the issue of technological and economic feasibility in the Regulatory Economic Analysis (REA) for this rule. This preamble includes a summary of the REA as Section IV. Of this preamble. The REA is posted on our website (www.msha.gov). You can download it or request a hard copy from the MSHA Office of Standards, Regulations, and Variances at the address in the front of this preamble.

To relieve the burden for small operators, we have planned an extensive outreach effort, developed a wide variety of compliance aids, and delayed the effective date of the rule for 1 year. As part of these efforts, we will provide several examples of a written HazCom program in the HazCom Toolbox for this rule. You can adapt the programs developed to meet OSHA's HCS because the two standards are similar. You also may obtain assistance from organizations that have developed generic guides to meet OSHA's HCS. The availability of generic programs reduces your technical and financial burden.

2. § 47.22 HazCom Program Contents

Under the interim final rule, like the proposal, your HazCom program has to describe how you meet the HazCom standard for hazard determination, labels and other forms of warning, MSDSs, and training. It also must include a list of the hazardous chemicals that you produce or bring to the mine and use the same identity for the chemical on this list, the label, and the MSDS.

Exchanging HazCom information.

Where more than one operator works at a mine, your HazCom program also has to describe—

- How you inform these other operators about the chemical's hazards and any protective measures for both normal work and foreseeable emergencies;
- How you provide other operators with access to your written HazCom materials, especially MSDSs; and
- How you identify hazards on labels and other warnings (the system or symbols you use).

Several commenters expressed concern about how information would be exchanged between operators. One commenter wanted the final rule to give the primary operator at the mine the latitude to determine how to exchange information. Another commenter wanted us to prescribe how operators exchange information.

The interim final rule deliberately uses performance-oriented language to give you the flexibility to establish how to exchange information with other operators and tailor your written program. At many mines, contractors, service personnel, and production miners are exposed to hazards of chemicals from many sources. For example, when independent contractors bring hazardous chemicals onto mine property, it is their responsibility to provide the primary operator and other operators (such as other independent contractors at the same site) with a written plan containing information about those chemicals. Likewise, it is the responsibility of the primary operator to inform these independent contractors about the chemical hazards at the mine. A systematic and orderly transfer of information ensures that all miners are informed. Specific, detailed requirements could reduce flexibility and become unnecessarily burdensome.

Hazard determination procedures.

One commenter wanted the final rule to require you to describe, in writing, the procedures you use to determine the hazards of the chemicals you evaluate and to maintain these written procedures. This commenter stated that

these detailed written procedures would be a valuable source of information for workers, their representatives, and the government. This commenter also stated that such a record is the means to determine if you are following procedures to assess the hazards associated with a chemical's inherent properties and not how you use it. Another commenter said that we do not need to know the basis of your hazard determination.

The interim final rule requires that your HazCom program include how you are putting the provision for hazard determination into practice at your mine. This requirement is performance oriented; it does not specify format or criteria. Although we agree with commenters that detailed procedures are valuable, HazCom does not require them. We expect your description of your hazard determination procedures to be sufficient to allow others to understand how you made the determination.

Hazardous chemical list. The interim final rule requires you to compile a list of hazardous chemicals and maintain it for as long as a hazardous chemical is at the mine. You are responsible for listing only the hazardous chemicals that you produce or bring to your work areas. The list, or inventory, of hazardous chemicals is a quick reference so that you, miners, other operators working at your mine, and MSHA and HHS personnel can see what hazardous chemicals are present. It also must use a chemical identity that permits cross-referencing between the list, a chemical's label, and its MSDS. For example, if a chemical is identified by a trade name on the MSDS or the label, the list must be indexed and the chemical identified using the same trade name.

You can compile the list for the mine as a whole or you can compile lists for individual work areas. For example, if few chemicals are used in one work area, such as a mine's quarry, and many are used in another work area, such as its shop, lists for the individual work areas would avoid confusing the miners in the quarry who would have no exposure to most of the chemicals that would be on a comprehensive list. You are in the best position to judge the most effective and efficient way to maintain this list. In maintaining this list, you must keep it up-to-date, whether for the whole mine or a specific work area.

D. Subpart D—Container Labels and Other Forms of Warning

Labeling containers of hazardous chemicals is a major provision of HazCom. A label is an immediate source

of information about a hazardous chemical in the work area, providing the identity of the chemical and a brief summary of the chemical's most serious hazards. The labeling requirements in the interim final rule are substantively the same as in the proposal and consistent with OSHA's HCS. Labels that comply with OSHA's HCS will meet HazCom's requirements.

The proposed rule contained the labeling exemptions under the "Scope and Application" and again under "Labels and Other Forms Of Warning." In response to comments, we eliminated this repetition. We also put the labeling exemptions in a table, so that they are visually more accessible, and restated the proposal's provisions using clearer language. We moved the table to a separate Exemptions subpart near the end of the rule rather than placing them in the "Scope" section at the front of the rule. Except for "raw materials being mined or processed while on mine property," the chemicals listed are exempt from labeling under HazCom because they are covered by the labeling requirements of other Federal agencies. These exempt chemicals, therefore, are already labeled when you receive them at the mine. We will discuss these exemptions in detail later in the section called "Exemptions from Labeling" (§ 47.82).

The proposal contained provisions addressing a miner's and designated representative's right to examine the labeling information and have a copy without cost. In response to comments, we consolidated HazCom's provisions on access and cost for copies in a new, separate subpart, Making HazCom Information Available (§ 47.61 through § 47.63).

The interim final rule does not include proposed § 46.5(d), which would have required you to ensure that the label for a hazardous chemical complies with the labeling requirements in an MSHA substance-specific standard, rather than the labeling requirements in HazCom. We do not currently have a substance-specific standard that requires labeling. Upon consideration of the comments, we determined that this provision was premature. If we promulgate such a standard, we will reconcile any differences from those in HazCom.

1. Labeling Requirement in General

Among those commenters supporting a HazCom labeling requirement, many urged us to be consistent with OSHA's HCS. Several of these commenters, especially those with operations in both mining and general industry, said that it would be extremely burdensome if they

had to comply with two significantly different requirements. For example, they said that it would be a great burden if you had to re-label incoming containers of hazardous chemicals to meet unique MSHA requirements. The interim final rule is consistent with the proposal, as well as OSHA's HCS. Labels that comply with OSHA's HCS will meet our labeling requirements because HazCom requires the same information on a label as OSHA's HCS. Likewise, we expect that labels meeting MSHA's HazCom criteria will meet OSHA's requirements for labels under its HCS.

Among those commenters generally opposed to labeling requirements under HazCom, many stated that our existing labeling standards are adequate and HazCom is redundant. Other commenters stated that they already are providing labeling information and MSDSs consistent with OSHA's standard because their customers are asking for them. By unifying labeling requirements for hazardous chemicals in HazCom, we intend to clarify requirements for all mines and to help you understand your compliance responsibilities.

2. § 47.31 Requirement for Container Labels

The interim final rule, consistent with the proposal, requires that each container of a hazardous chemical be labeled, tagged, or marked with the identity of the hazardous chemical and appropriate hazard warnings. You should only have to deal with three categories of labels: labels on containers of hazardous chemicals brought to the mine; labels on mixing, storage, or transport containers on mine property; and labels on the containers that you use to ship a hazardous chemical that you produce.

Existing container labels. MSHA believes that hazardous chemicals brought to the mine will arrive with labels or labeling information. We expect that the label on the original container of a hazardous chemical provides adequate information about its hazards. The Environmental Protection Agency (EPA), the Consumer Product Safety Commission (CPSC), OSHA, and other Federal agencies have rules addressing the labeling of hazardous chemicals. For this reason products or chemicals subject to their standards are exempt from labeling under HazCom.

Commenters' suggestions about label content and format indicated that they perceived the proposed rule as requiring much more operator labeling than we intended. Some seemed to think that we required operators to evaluate and label

containers of hazardous chemicals brought to the mine. One commenter pointed out that manufacturers may not identify new information on the label and MSDS they provide and stressed that operators should not have to update existing labels.

The interim final rule also contains exemptions from labeling. The interim final rule does not require you to re-label containers of hazardous materials that are labeled in accordance with other Federal standards or are otherwise marked or tagged with the required information. You are not responsible for inaccurate information on a label prepared by the chemical's manufacturer or supplier, which you accept in good faith. We do not expect, and HazCom does not require, you to update the hazard warnings on labels you did not prepare. We do expect, however, that as you replace your inventory, you will do so with containers already labeled by the manufacturer with the new information. If the manufacturer sends you a new label with instructions to replace the existing label, you must do so.

Labels on mine products. Commenters expressed concern that some operators might be unable to prepare the label for their mine's products because they lack the technical knowledge to do so. You should already know the hazard information for the chemicals produced at your mine because our existing standards require you to label hazardous materials and train miners about the safety and health aspects of their job. While underground coal mines are not required to label hazardous materials, they do conduct miner training. In the HazCom Toolbox, we will provide language that you can copy for labels for hazardous chemicals commonly produced at mines, such as respirable crystalline silica and ammonium nitrate-fuel oil (ANFO) mixed on mine property.

A commenter asked that we clarify whether the requirement to update the label with significant new hazard information within 3 months applied to small quantities of hazardous chemicals in transfer containers. The availability of significant new hazard information on a hazardous chemical is a relatively infrequent occurrence. Most new information confirms, clarifies, or expands knowledge about the hazards already known. If you have to label the container of a hazardous material, it is our intent that you ensure that the label is accurate and update the label when you become aware of significant new hazard information.

Maintenance. Some commenters stated that labels would be difficult to

maintain in a mining environment or that they would be difficult for miners to read and understand. Although it may be difficult to maintain labels in some areas of the mining environment, these labeling requirements are realistic and achievable. OSHA's HCS provisions are successfully met at heavy and highway construction sites as well as at tunneling operations, situations that are comparable to mining sites. Many of the containers coming onto mine property will have permanent labels affixed, suitable for use in the mining environment, and effective training will help miners to understand the labeling information.

HazCom requires you to check the label on a chemical brought to the mine to determine if it is hazardous so you will know whether you need to obtain and keep an MSDS, list the chemical on the list of hazardous chemicals, and train miners about the chemical. You also must ensure that the labels and other forms of hazard warning are legible. You do not have to re-label these containers unless there is no label or it is unreadable. Likewise, you must not remove or deface the labels on hazardous chemicals brought to the mine unless you immediately mark the container with the chemical's identity and its hazards. You must also ensure that the container remains labeled as long as you use it to contain a hazardous chemical.

3. § 47.32 Label Contents

HazCom requires that you label containers of the hazardous chemicals you produce. Although the hazard warnings on the labels should be concise and easy to see, they also must convey the chemical's identity and its physical and health hazards. The label, tag, or other marking that you prepare must communicate enough information to users of your product and other employers so that they can recognize the hazards and make correct decisions about safe procedures and protective equipment. We do not intend the label to be the only or most complete source of information on the hazardous chemical.

We recognize that it may not be feasible to include every hazard on the chemical's label that is listed in the MSDS. We expect, however, that you will address all hazards in the training program. The selection of hazards to be highlighted on the label will involve some assessment of the weight of the evidence regarding each hazard. This does not mean, however, that only acute hazards are to be covered on the label or that well-substantiated hazards can be omitted from the label because they

appear on the MSDS. As one commenter stated:

We urge you to consider the possible effects of a world in which every conceivable threat is labeled, stickered, highlighted until the senses are saturated and the desired effect of the entire message is lost. We are rapidly creating such a world, and we caution you against needlessly furthering this unnerving trend.

For those chemicals posing multiple hazards, we expect you to prioritize the hazards and use that as the basis for the warnings. At a minimum, you must specify all serious hazards on the label. For example, if chromium (VI) in a welding fume is carcinogenic, causes liver and kidney damage, and blood abnormalities, as well as respiratory irritation, perforation of the nasal septum, damage to the eyes, sensitization dermatitis, and skin ulcers, the label could say: "Causes cancer, liver and kidney damage, blood abnormalities, and irritation of the skin, eyes, and mucous membranes." The warning about it causing sensitization dermatitis, respiratory irritation, skin ulcers, perforation of the nasal septum, or conjunctivitis could be covered by the less specific phrase, "irritation of the skin, eyes, and mucous membranes."

You may have to reconcile inconsistent information in different sources by evaluating the evidence used in making the hazard classification. For example, if the chemical causes severe burns upon contact with skin, eyes, or mucous membranes, you would not also have to say that some evidence reported it to be a skin irritant. You also may need to distinguish between acute and chronic hazards. For example, some chemicals present a hazard only from prolonged exposure to high concentrations. When you determine what hazard information to include on a label, you should make an assessment of the information you report on the MSDS and coordinate the two documents.

Hazard warning. The definition of "hazard warning" states that the warning must convey the specific hazard of the chemical. Consistent with the proposal, the hazard warning can be any type of message, words, picture, or symbol that provides at least general information regarding the hazards of the chemical in the container such as "flammable" or "suspected human carcinogen". If applicable, the warning must include the organs affected. For example, if the chemical causes lung damage when inhaled, then "causes lung damage" is the appropriate warning. "Lung damage" would be the hazard and "do not inhale" would be

the protective measure. Phrases such as "caution," "danger," or "harmful if inhaled" are precautionary statements.

Some commenters suggested that the labels would need to state the container's contents and provide a general hazard warning, using words like "combustible," "flammable," or "poison." A general statement, however, would not convey enough information to enable miners to adequately protect themselves. Other commenters believed that only a precautionary statement, such as "Danger!" would be needed. Some suggested that we require operators to include precautionary statements on the label, in addition to the other information. A few commenters stated that warning labels should summarize acute and chronic health effects and safety hazards and should provide advice and a phone number in case of emergency. Others recommended that labels include the target organ(s) affected by the chemical.

We intend that the label include the target organ effects, if such information is available. There are some situations where the specific target organ effect is not known. When this is the case, you can use a more general warning statement. For example, if the only information available is an LC₅₀ test result, "harmful if inhaled" is appropriate. (An LC₅₀, or the lethal concentration by inhalation for 50% of the animals tested, is the exposure concentration at which half of the animal test subjects died.)

Our existing standards (§§ 56/57.16004; §§ 56/57.20012; § 77.208) require you to label hazardous materials appropriately. In addition to the required information, we encourage you to include other helpful information on the label. For example, the symbols on the label representing precautionary measures or safe work practices, such as "chemical goggles," "respiratory protection," or "use only in a well-ventilated area," serve as reminders about the hazard and increase the likelihood that miners will use these measures.

Label format. Many commenters suggested various format criteria and coding schemes for labels, affirming the benefits of uniformity. Consistent with the proposal, we recognize that there are a variety of different labeling systems to warn persons of chemicals and their hazards. Some systems rely on numeric codes and specific colors to convey the hazards of chemicals. These systems, however, usually convey the degree of risk that a chemical poses and not specific hazard information. You can use these types of systems for labels used at the mine if you communicate

the specific physical and health hazards of the chemicals through other parts of the HazCom program, such as MSDSs and training. These systems are appropriate for labels to downstream users if you also provide them the other labeling information and the way to understand your labeling system.

Recognizing that a specific system is not necessary to communicate the chemical's identity and its hazards, and that some mine operators already have a labeling system, HazCom's labeling requirements are performance oriented. The interim final rule is deliberately flexible to allow for the adoption of an international system for classifying and displaying hazard information, when it becomes available. Although the interim final rule does not require a specific labeling system, we encourage you to adopt a label format that is in accordance with an established standard. In its comments on the proposal, the Chemical Manufacturers Association (CMA) suggested that operators use the "American National Standard for Industrial Chemicals—Precautionary Labeling" (ANSI Z129.1–1988) for their labeling system. Uniformity in the format, content, and terminology of MSDSs and labels aids understanding and simplifies their development. It also allows miners and others to find critical information quickly. Consistent domestic labeling requirements between MSHA and OSHA will make communication among industries more effective and will make it easier for them to adopt global hazard communication standards.

Other languages. The interim final rule, consistent with OSHA's HCS and the proposal, requires that the label be in English. If a significant number of your miners do not read English, or if their English is poor, you should provide the labeling information in another language in addition to English or add symbols to communicate the chemical's hazards. For example, if your workforce speaks Spanish, you should add a label in Spanish that gives the chemical's identity and hazard information or provide a translation of the labeling information to the affected miners. If your workforce speaks several different languages, or there are other literacy issues, you should add symbols to the label to communicate the chemical's hazards. You must ensure that the workforce understands the meaning of the symbols.

Carcinogen labeling. As discussed under "Identifying Hazardous Chemicals," the HazCom proposal, interim final rule, and OSHA's HCS all require that the employer consider a chemical to be hazardous if it is listed

in the specified ACGIH, NTP, or IARC publications or regulated under agency standards. You must include a carcinogenic warning on the label if one of these sources classifies the hazardous chemical as a potential or confirmed carcinogen.

Many commenters suggested that we allow operators to determine what should be listed on the label based on an assessment of the weight of the evidence. Several pointed out that both IARC and NTP acknowledge that their classification evaluations are not complete hazard assessments. IARC and NTP use a strength-of-evidence approach that does not take into consideration negative studies for evaluating a chemical's carcinogenic hazard. In regard to the use of ACGIH, one commenter stated:

ACGIH lists chemicals identified as carcinogens from "other sources" without identifying these sources. The ACGIH documentation of TLV's and BEI's lists five sources of information on carcinogens (IARC, MAK, NTP, NIOSH, and TLV). Since these sources often use each other as their reference point rather than come to independent conclusions, we believe that the "carcinogen" tag can be inappropriate unless there is conclusive evidence of carcinogenicity. While fuller explanations may be given on an MSDS, we believe that automatic triggers should not be used to determine warnings on labels.

Although some commenters specifically objected to using IARC, NTP, or ACGIH as a trigger for cancer labeling, others supported carcinogen labeling based on the judgment of these organizations, but only for those chemicals identified as known human carcinogens. Another commenter objected to carcinogen labeling for those chemicals listed in IARC Group 2A. Group 2A carcinogens (probably carcinogenic) are known to induce cancer in animals, but the evidence of human carcinogenicity is limited. These commenters believed that requiring carcinogen labeling for potential or probable carcinogens would result in "over-labeling" and detract from the focus that should be given to more serious hazards. In addition, one pointed out that "over-labeling" could have the adverse marketplace consequence of encouraging shifts to unlabeled products, typically without an assessment of whether the unlabeled product is, or is not, safer than the labeled product. Several commenters supported including IARC, NTP, and ACGIH's carcinogenicity findings on the MSDS, but not on the label. A few commenters, however, recommended that we require labeling for all

carcinogens, including those listed as potential or probable.

In considering the comments, we find that IARC, NTP, and ACGIH base their cancer classifications on valid scientific evidence. This evidence warrants informing miners of the cancer hazard associated with any chemical on these lists. Miners have a right to know about this hazard information. If one or more of these organizations has associated a potential, probable, or confirmed carcinogenic hazard with a chemical at the mine, you must inform the miners who can be exposed. A fuller discussion about the use of these organizations as sources is in the Hazard Determination section of this preamble.

Silica labeling. IARC is one of the authoritative sources listed in HazCom for establishing whether a chemical is a carcinogen. In 1997, IARC classified inhaled (respirable) crystalline silica as Group 1, a confirmed human carcinogen.

A number of commenters expressed concern that the proposal would have required the labeling of silica as a carcinogen. Several argued that labeling silica as a carcinogen was both impractical and unnecessary. One of these commenters stated:

Silica is, as MSHA recognizes, a natural substance occurring in the great majority of the earth's crust and labeling over one billion tons annually of naturally occurring stone produced by American quarries would clearly be impractical and unnecessary by the standards of good science.

Some commenters stressed that the labeling requirement should apply to respirable silica because the size of the silica particle determines whether or not it is a health hazard. One commenter stated:

OSHA has taken the position in interpreting its HCS that it applies only to crystalline silica available for respiration. * * * Mr. Gerald F. Scannel, Assistant Secretary of Labor for OSHA, stated that kaolin dust products containing less than 0.1% respirable crystalline silica would be exempt from coverage under the provision of paragraph (d) of the [OSHA's] HCS, "Hazard Determination."

In addition, this commenter cited a statement by Dr. David Rall of the NTP that, "Only crystalline silica in respirable form will be added to the list of substances in the [NTP] 6th annual report."

The interim final rule does not address the labeling of containers of hazardous chemicals off mine property. You will have to label containers of any product containing 0.1% or more of respirable crystalline silica as a carcinogen to meet OSHA's HCS labeling requirements for your

customers. The HazCom interim final rule exempts the raw material being mined or processed from labeling while on mine property. For example, if you operate a silica flour mill, you do not have to label containers of the raw material, such as crushers, bins, or hoppers.

Under HazCom's hazard determination criteria, you must consider crystalline silica to be a human carcinogen when it is in respirable form and capable of being released in the work area or when an activity, such as crushing, would create respirable dust. Although you do not have to label it for purposes of HazCom, you must train miners about silica's carcinogenicity.

Providing copies. The proposal would have required you to provide a copy of the labeling information with the initial shipment of a hazardous chemical to an employer. You could include this labeling information with the chemical's shipping papers rather than attach it to each container. If you became aware of any significant new information concerning the hazards of the chemical, you had to incorporate this new information, as appropriate, into a new label within 3 months and provide it with the next shipment of the chemical to the employer. In addition to the identity of the hazardous chemical and appropriate hazard warnings, the proposal also would have required you to provide the employer with your name and address or the name and address of a responsible party who could provide additional information about the hazardous chemical. The proposal did not specifically address customers who were not employers.

Some commenters said that HazCom should require this labeling information on all containers shipped from the mine. They stated that it would be easier to label each shipment to avoid the extra recordkeeping associated with tracking which shipments to employers must contain labeling information. Several commenters stated that 3 months is too long and that you should inform miners immediately of significant new hazard information. These commenters suggested 5 days, 30 days, and 45 days as adequate time for you to incorporate the new information into a new label.

Several commenters wanted us to cover hazardous chemicals shipped from a mine in a way that was consistent with the OSHA HCS. Some questioned our authority to require you to provide labels on products leaving mine property.

The interim final rule requires you to make label information available upon request. Our experience indicates that

mine products are already labeled and MSDSs are sent in a manner consistent with OSHA's HCS. We believe that market forces and the requirements of other agencies will serve to ensure that you label your product appropriately for downstream users. Although you are responsible for the accuracy of the information on any label you prepare, you are not responsible for the accuracy of labels a manufacturer prepared for a hazardous chemical brought to your mine. We agree with those commenters who felt that you should inform miners immediately of any significant new information about the hazards of the chemicals in their work area, whether or not you have to update the label.

4. § 47.33 Label Alternatives

HazCom requires that the hazardous chemical's label warn miners about the presence, chemical identity, and specific health and physical hazards of the chemical. Neither the proposal nor the interim final rule includes specific criteria for the format of the label. The interim final rule requires that the label be prominently displayed, legible, accurate, and in English; display appropriate hazard warnings; and use a chemical identity that permits cross-referencing between the list of hazardous chemicals, a chemical's label, and its MSDS. In the case of a trade secret, you must comply with the requirements of §§ 47.71 through 47.77 (trade secrets).

Commenters supplied a wide variety of suggestions for a label format. Several recommended that we require a standardized label format. Some commenters suggested that a coding or rating system might be helpful. Some requested that we permit flexibility in our labeling requirements and allow batch labeling, color coding, standardized containers, or stenciling a generic name on the container. Others did not support the use of a coding or rating system on labels because they thought that miners would find such a system confusing. Some commenters suggested that we require labels to have large bold print with pictorial or color warnings. Another suggested that operators could label containers using markers or paint.

The label requirements in the interim final rule are performance-oriented, flexible, and consistent with the proposal and OSHA's HCS. Labels made with markers or paint are acceptable as long as they identify the hazardous chemical and its hazards and are maintained in legible condition. Any name may be used to identify the chemical contents of a container as long as it can be cross-referenced with the

MSDS and the hazardous chemical list. You may substitute various types of standard operating procedures, process sheets, batch tickets, blend tickets, and similar written materials for container labels on stationary process equipment. The alternative, however, must identify the container to which it applies, communicate the same information as required on the label, and be readily accessible throughout each work shift to miners in the work area. You can post signs or placards that convey the hazard information if there are a number of stationary containers within a work area that have similar contents and hazards.

5. § 47.34 Temporary, Portable Containers

The interim final rule, consistent with the proposal and OSHA's HCS, does not require you to label a portable container into which a hazardous chemical is transferred from a labeled container, if the portable container is for the immediate use of the miner who performs the transfer. To clarify compliance responsibilities, we replaced the word "immediately" with the phrase "during the same work shift" in the interim final rule.

Most commenters supported the proposed portable container exemption, but some claimed that it was too restrictive. These commenters recommended that we not require labeling of portable containers if they are subject to operating procedures that provide a means of alerting miners to their contents. Other commenters recommended that we expand this exemption to include any designee of the miner who performs the transfer. One of these commenters stated that adding the word designee would allow those individuals working with the miner who transferred the hazardous chemical, also to use that chemical. Otherwise, each miner working on the job would need his or her own portable container, perhaps creating a bigger hazard. Another commenter opposed expanding the portable container exemption to include the miner's designee because of concern that the miners would not communicate the hazard information to each other.

Other commenters opposed our proposal to exempt portable containers, believing that it was too lenient and could create a serious hazard. Commenters expressed concern—

- That unattended, misplaced, or forgotten unlabeled portable containers could present a high risk of exposure to hazardous materials due to inappropriate handling or disposal by other workers;

- That unlabeled portable containers could be potentially dangerous because of the residues left in them;

- That if the chemical in the portable container was not completely used by the end of the shift, we should require that the unused portion be returned to a labeled container;

- That all containers of hazardous chemicals be labeled under this law or other applicable laws; and

- That this section should be clarified because it seems to imply that you have no responsibility to maintain labeling information if a product is repackaged or transferred to another container at the mine site.

After considering the comments and observing the use of portable containers in mining, we determined that allowing the miner who performs the transfer to use a hazardous chemical from an unlabeled container will not reduce that miner's protection. One common use of temporary, portable containers is when a miner transfers a lubricant from a 55-gallon drum into a small plastic or galvanized container in order to safely access and properly service machinery. We recognize that it would be impractical, or at least inconvenient in some instances, to access many pieces of equipment without the use of these containers.

In response to commenters concerns and contrary to the proposal and OSHA's HCS, we expanded this exemption in the interim final rule. Under HazCom, you can allow other miners to use a hazardous chemical from an unlabeled, temporary, portable container provided you ensure that they know the chemical's identity, its hazards, and the protective measures needed; and that the container is left empty at the end of the shift. You can leave the chemical in the portable container for the next shift if you label the container. For example, if a container is emptied by one miner and refilled by another miner, you do not have to label the container before the second miner uses it. On the other hand, if you leave the hazardous chemical in the temporary, portable container, expecting to use it the next day, the container would have to be labeled.

We expect that you already have labeled many of your portable containers because our existing standards require you to label containers of hazardous materials. Such labeling also is a safe work procedure to keep miners from placing a chemical in a container you had previously used for an incompatible chemical.

E. Subpart E—Material Safety Data Sheet (MSDS)

The MSDS is a detailed information bulletin that serves as the principal source of important information about hazardous chemicals used or produced at the mine. This interim final rule requires you to have an MSDS for each hazardous chemical to which a miner can be exposed under normal conditions of use or in a foreseeable emergency. Although we revised the format and language of HazCom's MSDS requirements to reduce redundancy and use plain language, the interim final rule is substantively the same as the proposal and OSHA's HCS. An MSDS that complies with OSHA's HCS will meet our MSDS requirements because HazCom requires the same information on the MSDS as OSHA's HCS. Likewise, we expect that MSDSs meeting MSHA's criteria will meet OSHA's criteria for MSDSs under its HCS.

In the proposed rule, provisions for determining hazards of single substances and mixtures were repeated under both "hazard determination" and "MSDS." To eliminate this duplication, the interim final rule includes these provisions in the hazard determination section only. Also, in response to comments, we consolidated HazCom's provisions on access and cost for copies of MSDSs in a new, separate section on "Making HazCom Information Available" (§§ 47.61 through 47.63).

1. § 47.41 Requirement for an MSDS

The interim final rule requires you to have an MSDS for each hazardous chemical at the mine. If you do not have an MSDS for a chemical brought to the mine and its label indicates that it is hazardous, the interim final rule requires that you obtain one from the manufacturer or supplier before using the chemical. You must prepare an MSDS for any hazardous chemical produced at the mine.

Chemicals brought to the mine. The proposed rule would have allowed you to request, but not require you to obtain, an MSDS prior to using a hazardous chemical. Several commenters stated that requesting an MSDS was not sufficient and that you should have to obtain the MSDS before using the chemical on mine property. As indicated in the proposal, commenters on the ANPRM urged us to adopt MSDS requirements identical to OSHA's. Consequently, MSHA's provisions [in the proposal] on MSDS's are substantially similar to those in OSHA's standard. In response to comments and to make HazCom consistent with OSHA's HCS, we changed the word

"request" to "obtain" in the interim final rule. You must have an MSDS available to miners in their work area for each hazardous chemical to which they may be exposed.

Another commenter suggested that we allow you the flexibility to have either an MSDS or appropriate information about the chemical's hazards, safe work procedures, means of control, and first aid and emergency procedures immediately available. Substituting the information suggested by the commenter for the MSDS would not be sufficient because the MSDS contains much more information. OSHA requires MSDSs for hazardous chemicals produced at non-mining operations. For this reason, we expect that most, if not all, MSDSs prepared by chemical manufacturers or suppliers are readily available by fax or from the internet. If you have a document available to miners that contains all the information required in § 47.42 (MSDS contents), we would consider that to be an MSDS. HazCom does not require a specific MSDS format, but the MSDS must contain all the information required to the extent that it is available.

Several commenters stated that we should require MSDSs to be accurate. You are responsible for the accuracy of MSDSs that you prepare for a hazardous chemical produced at your mine. HazCom does not require you to be responsible for the accuracy of an MSDS that you receive with a shipment of a hazardous chemical and accept in good faith. Because OSHA requires that information contained in MSDSs accurately reflect the scientific evidence that formed the basis for determining that the chemical is hazardous, we believe that chemical manufacturers and suppliers develop MSDSs correctly. On the other hand, considering that you are responsible for communicating accurate health and safety information about the mine and the job to the miner, the MSDS that you maintain must include any new information the manufacturer sends you.

Commenters stated that manufacturers do not indicate what information is new on the MSDS and it is impractical and overly burdensome to require operators to update MSDSs they do not prepare. We do not see this as a problem. The MSDS will show the date it was prepared or last changed. If you receive an MSDS that has a later date than the one you have on file, you should keep the one with the most recent date and discard the older. If you receive an MSDS that is obviously inaccurate or which you suspect is inaccurate, or if a category of information is missing, you should

bring this to the attention of the party responsible for preparing the MSDS. There should be an address and telephone number on the MSDS.

Some commenters stated that requiring MSDSs as part of HazCom would be burdensome to operators and of no real value to miners because of the complexity of information required to be provided on the MSDS. Another commenter stated that to keep track of which materials may or may not require MSDSs places an overwhelming burden on operators.

MSDSs are essential in supplying information to the miner, as well as to the mine operator and independent contractor. Information, such as the chemical's properties, for example, may not be found on labels. The MSDS contains the information that we require you to communicate to miners about the hazardous chemicals to which they may be exposed. Although it may be an administrative burden to keep track of MSDSs, obtaining the MSDS from the manufacturer or supplier of the hazardous chemical relieves you of conducting independent searches for the required information. We expect that MSDSs will be an important resource for you in writing the HazCom program and modifying or developing training courses.

As a result of the OSHA HCS, MSDSs have become widespread in general industry and many operators voluntarily obtain and use them. We suggest that you check the list of all the hazardous chemicals at your mine against the MSDSs that you have collected to discover if there are any MSDSs missing. If the list indicates that you use a hazardous chemical at the mine, but do not have an MSDS for it, you must contact the manufacturer or supplier to obtain the missing MSDS.

Chemicals produced at the mine. The interim final rule requires you to prepare an MSDS for each hazardous chemical produced at the mine and update this MSDS with significant new information within 3 months of becoming aware of it. This provision is the same as the proposal and OSHA's HCS. A few commenters requested that the final rule remove the reference to "significant" and "new" information and add the phrase "scientifically valid" to prevent the incorporation of questionable information into the MSDS. We intend that the MSDSs you prepare accurately reflect the available scientific evidence that formed the basis for your determination that the chemical is hazardous (§ 47.11 contains criteria for determining a chemical's hazards). If the chemical presents more than one

hazard, you have to address each of them on the MSDS.

One commenter indicated that his operation updates the MSDS every 3 months. This time period is consistent with provisions in the interim final rule, the proposal, and OSHA's HCS for including significant new information on the MSDS and label and in the miner's training. In addition, some States have HazCom programs that are identical to OSHA's and require the use and distribution of MSDSs. Many mine operators are supplying MSDSs with their product as a good business practice, in response to requests from their customers, or to comply with State or local laws. We encourage you to check regularly for new information on the hazardous chemicals you produce.

MSDSs for common minerals. In the proposal, we requested comments on the usefulness of requiring operators to develop or provide MSDSs for common minerals such as sand and gravel, crushed stone, or coal. These minerals are the hazardous chemicals produced by over 90% of the mines. We also requested comments on whether we should develop MSDSs for common minerals and provide them upon request to all interested parties. A few commenters agreed that we should develop MSDSs for common minerals. Two commenters said that we should not develop them. One of these stated that generic MSDSs would not be useful and that we should not require MSDSs for these common minerals.

If you determine that a common mineral is hazardous using the criteria in § 47.11, hazard determination, you must comply with the provisions of HazCom to the extent applicable.

2. § 47.42 MSDS Contents

In the interim final rule, as in the proposal, we require that MSDSs be in English, but do not otherwise include a requirement for the format. Although the proposal did not specifically require that the MSDS be legible and accurate, we added these terms in the interim final rule to clarify your compliance responsibilities.

Some commenters suggested that we require MSDSs to be made available in alternative languages. Although the MSDS must be in English, you also may provide it in other languages. Just as you have to communicate job duties and work procedures to those miners who may not read or understand English, you must communicate the required information about a hazardous chemical to them. MSDSs for hazardous chemicals brought to the mine are probably available in Spanish or other languages from the manufacturer or

supplier or other sources, such as trade associations and websites. If available, you must provide the MSDS in a language the miner can understand. If you employ miners who do not read English but read another language, having an MSDS in the language the miner can read makes it easier for you to communicate the chemical's hazards. At those mines where multiple languages are spoken, we suggest you use symbols to help communicate the nature of the hazard and protective measures, and reinforce the miner's understanding of this information.

Similarly, some commenters claimed that miners would be unable to understand the MSDS because the language is too technical. As stated earlier, you must balance technical accuracy against miner understanding. For example, you can use simple, clear language when preparing the MSDS: you could use "lungs" as a route of entry rather than "inhalation" or "causes nerve damage" rather than "neurotoxin."

Information required in MSDS. HazCom requires that each MSDS include the following information about the chemical:

1. *Identity.* The chemical and common names of the hazardous chemical if it is a single substance and of the hazardous ingredients if it is a mixture. The identity used must permit cross-referencing between the list of hazardous chemicals at the mine (§ 47.22), a chemical's label (§ 47.32), and its MSDS.

2. *Properties.* The chemical's physical and chemical properties as appropriate, such as boiling point, melting point, vapor pressure, evaporation rate, solubility in water, appearance and odor, flash point, and flammability limits.

3. *Physical hazards.* The hazardous chemical's potential for fire, explosion, and reactivity.

4. *Health hazards.* The hazardous chemical's potential to cause an illness or injury, such as its acute and chronic health effects, signs and symptoms of exposure, any medical conditions that are generally recognized as being aggravated by exposure to the chemical, the primary routes of entry (for example, the lungs, the stomach, the skin or eyes).

5. *Carcinogenicity.* The hazardous chemical's carcinogenic classification, if any, such as whether the chemical is listed as a potential, probable, or human carcinogen in the sources specified in § 47.11 (identifying hazardous chemicals).

6. *Exposure limits.* The MSHA limit and any other exposure limit used or recommended by the preparer of the

MSDS, where available, such as its ACGIH TLV, OSHA PEL, or NIOSH recommended exposure limit.

7. *Safe use.* Any generally applicable precautions for safe handling and use that are known to you or the responsible party preparing the MSDS, such as appropriate hygienic practices, protective measures during repair and maintenance of contaminated equipment, procedures for clean-up of spills and leaks, and special disposal requirements.

8. *Control measures.* Generally applicable control measures, such as ventilation, process controls, restricted access, protective clothing, respirators, and goggles.

9. *Emergency information.* Emergency procedures, such as special instructions for firefighters; first-aid procedures; and your name, address, and telephone number, or that of a responsible party who can provide additional information about the hazardous chemical and appropriate emergency procedures.

10. *Date prepared.* The date of preparation of the MSDS or the last change to it.

This information is substantively the same as the proposal and OSHA's HCS. One difference is that HazCom requires you to list the MSHA exposure limit for the chemical, if there is one.

Numerous commenters asked that additional information be required on the MSDS, such as Department of Transportation (DOT) requirements, IARC and NTP conclusions, CAS numbers, NIOSH Recommended Exposure Limits, Hazardous Material Information System (HMIS) hazard code information, upper and lower explosive levels, and how products are covered by other agencies' programs, such as EPA requirements under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), Resource Conservation and Recovery Act of 1976 (RCRA), and Superfund Amendments and Reauthorization Act of 1986 (SARA).

We did not include additional requirements for the content of the MSDS in the interim final rule. The interim final rule requires MSDS contents that are consistent with the proposal and OSHA's HCS. The requirements are well-known, and adding to the contents could obscure crucial information needed for miner protection. To aid understanding, we included additional important examples (solubility in water, appearance and odor, flammability limits, and explosive limits). We encourage you to include additional helpful information, such as the DOT labeling requirements, the HMIS hazard codes, special instructions

for firefighters, or special disposal requirements.

Standardized format. Neither the interim final rule nor the proposal prescribe a specific format for the MSDS. Both HazCom and OSHA's HCS allow the preparer to determine the format, provided that it addresses all the required categories.

Numerous commenters requested that we require a standardized format for MSDSs. Several of these commenters stated that they wanted us to adopt OSHA's MSDS form (OSHA-174), and others recommended ANSI Z400-1 "Guide for Preparing Material Safety Data Sheets." Another commenter recommended that we require operators who prepare MSDSs to present the same information in the same manner for the same hazardous chemical. One commenter was concerned that you would have to prepare duplicate MSDSs: one for OSHA and one for us.

There are numerous sources for MSDSs in addition to the manufacturer or supplier: university databases, chemical information services, trade association or union collections. We established minimum requirements for information that must be on the MSDS. Each MSDS must contain the same minimum categories of information.

If you cannot find the appropriate information to complete a specified category or if the category is not applicable to the chemical involved, you must indicate on the MSDS that no applicable information was found. For example, if the chemical does not have an exposure limit or is not classified as a carcinogen, mark these spaces "not applicable." The MSDS must not contain blanks, even if you choose to use a form with categories beyond those required, because blanks may be interpreted. This requirement is the same as in the proposal and OSHA's HCS. HazCom allows you the flexibility to develop an MSDS in any format you wish, as long as it contains all required information. We encourage you to use a standardized format and suggest OSHA's non-mandatory MSDS form (OSHA-174) as a guide.

Alternatives. In HazCom, as in the proposal, we allow you to use a single MSDS for a class or family of mixtures with similar hazards and contents, such as one in which the ingredients are the same, but their percentages vary from mixture to mixture, for example, organic solvents or lubricants. The few commenters on this provision agreed with the proposal.

Also, as in the proposal, HazCom allows you to use a single MSDS to address the hazards of a process rather than individual hazardous chemicals

when it is more appropriate. For example, the chemical composition of a flotation reagent changes as it evolves through the processing of a mineral. A few commenters objected to this option, but we decided to allow it for several reasons:

- We saw this option as relating to format, not scope.
- It is an option, not a requirement, intended to maximize flexibility and to acknowledge the practical limitations of dealing with chemicals.
- For the purposes of HazCom, "hazards of a process" refer to the physical and health hazards of chemicals in the process. If you choose to prepare an MSDS for a process, you have to include all the chemical hazards created during the process and any likely to be created if there is a malfunction or accident, even if the hazardous chemical is a short-lived intermediate.

3. § 47.43 MSDS for Hazardous Waste

A number of mine operators have EPA permits to burn hazardous waste in their kilns or to dispose of hazardous waste in tailings. If you have hazardous waste at your mine, the interim final rule requires you to provide exposed miners and designated representatives with ready access to any materials you have that can help them know about the hazardous waste. Suppliers typically send a manifest and MSDS with hazardous waste. If no MSDS is available, however, you must give the miner access to any information about hazardous waste which—

- Indicates its identity or that of its components;
- Describes its physical and health hazards; or
- Specifies the appropriate protective measures.

Our proposal would have exempted EPA-regulated hazardous waste from HazCom's labeling and MSDS requirements. It still would have required you to determine the nature of the waste's hazards and instruct miners about them. Proposed § 46.3 (hazard determination) stated:

(b) Operators who receive chemicals shall determine their hazards based on the chemicals' material safety data sheets and container labels, except that the procedures in paragraph (a) of this section shall be followed for hazardous waste received by operators when a material safety data sheet cannot be obtained.

Paragraph (a) contained the criteria for determining the hazards of chemicals produced at the mine.

OSHA's HCS includes an exemption for hazardous waste regulated by EPA under the Solid Waste Disposal Act, as

amended by the Resource Conservation and Recovery Act of 1976 (RCRA), as amended (42 U.S.C. 6901 *et seq.*). Although OSHA's HCS excludes coverage of hazardous waste regulated by EPA, OSHA has other specific standards directed to hazardous waste operations (29 CFR 1910.120). OSHA was required to issue these standards by § 162, Title 1 of the Superfund Amendments and Reauthorization Act of 1986 (SARA), as amended (29 U.S.C. 655 note). We do not have similar statutory requirements or standards regarding hazardous waste operations.

EPA standards require training of personnel at a hazardous waste facility, but this training appears to be directed primarily at limiting environmental impact. EPA standards also require an analysis of the hazardous waste as part of the process for obtaining a permit to burn or dispose of it. EPA does not require that this analysis specify the chemicals' hazards to workers or that the employer make this analysis available to employees.

Some commenters expressed concern that exempting EPA-regulated hazardous waste from HazCom would omit a segment of the mining population that is exposed to hazardous waste on a routine basis. These commenters believed that MSDSs should be available to miners exposed to hazardous waste, including miners working at facilities where hazardous waste is processed or used as a fuel.

As with other hazards exempt from HazCom, such as radiation, you have the responsibility to provide adequate hazard information and training to miners potentially exposed to EPA regulated hazardous waste in their work area. Our existing training standards require health and safety training and hazard training. To clarify that you must inform miners about the hazards associated with hazardous waste, even when the waste is exempt from labeling and MSDSs, we included a requirement to that effect in the interim final rule.

Operations disposing of hazardous wastes receive a manifest with each shipment. This manifest contains much of the information found on an MSDS, often in greater detail. Similarly, if you collect waste chemicals from your mining operation, you should know what these wastes contain and the hazards of the ingredients. The interim final rule requires that, if you are unable to obtain or prepare an MSDS for hazardous waste, you must ensure that you provide each potentially exposed miner with any information you have that—

1. Indicates the identity of the waste or its components,

- 2. Describes its physical or health hazards, or
- 3. Specifies the appropriate protective measures.

4. § 47.44 Ready Access to an MSDS

The interim final rule requires that you provide miners with access to MSDSs while they are in their work area. You can keep MSDSs at a central location if you ensure that they are readily accessible to miners in an emergency. The proposal had allowed you to keep MSDSs at a central location when it was not practical to maintain the MSDSs in the work area, if the miners had access to them at some time during their work shift, and if you ensured that miners could obtain the required information in an emergency.

Numerous commenters requested that the MSDSs be kept in a central location when mining conditions were not favorable for keeping these documents in the work area. A few commenters said that we should not specify how MSDSs are to be made available to miners, only that they should be available. Several commenters asked that access to MSDSs be available through electronic means, such as computers.

The purpose of requiring MSDSs in the work area where the chemical is stored, handled, or used is so that miners have quick access to critical information in emergency situations. The interim final rule provides flexibility for you to determine the best way to meet this requirement. We recognize that independent contractors especially need this flexibility because they work at different types of mines, typically multiple employer sites. Independent contractors, therefore, must coordinate the accessibility of MSDSs to other operators and miners, as well as their own.

The interim final rule allows you to maintain paper copies of the MSDSs, keep copies on a computer or on microfiche, use fax or other data transmission means, or any other method for providing access. You may keep MSDSs wherever you think appropriate and accessible as long as any miners who can be exposed can readily obtain a copy in an emergency. If you keep MSDSs in the mine office, you must tell the miners where they are and how to access them. Access means that the office must remain open while miners are working or you must make provisions for them to immediately unlock the office if needed. If the MSDS information is kept on a computer, it may be necessary to train the miner to access the information from the computer or make provision for backup

electrical power in the event of an emergency.

5. § 47.45 Retaining an MSDS

The interim final rule requires that you keep the MSDS for as long as the chemical is at the mine. The proposal would have required that you notify miners at least 3 months prior to disposing of the MSDS. The proposal did not specify how you were to notify the miner about the intent to dispose of these MSDSs. You would have had the flexibility to use any method that notified each miner who may have been exposed.

Several commenters suggested that the proposed 3-month retention period was not sufficient because the chronic effect of a hazardous chemical may take years to manifest itself. Some commenters recommended that we be consistent with OSHA and require a 30-year retention period. One commenter suggested a retention period of 20 years. A few commenters agreed with the proposed 3-month retention period and others felt that there should be no retention requirement at all. One commenter suggested that these notices be posted.

The intent of the proposal's requirement to notify miners prior to disposing of an MSDS was to ensure a miner had the opportunity to request a copy. The miner could then retain this information for future reference and you would not have had to maintain the MSDS for an extended period of time.

We considered a 30-year retention period to be consistent with OSHA requirements. The OSHA retention period for MSDSs derives from that agency's generic rule on recordkeeping, (29 CFR 1904), which was not developed specifically for hazard communication purposes. As an alternative to retaining the MSDS for 30 years, OSHA's recordkeeping rule allowed employers to keep a record of the identity of the chemical, where it was used, and when it was used.

Because of the nature of the mining industry, mines open and close frequently and there is a large turnover in miners each year. The records from closed mines would be impractical, if not impossible, to retain if the mine operator does not continue in business and there is no succeeding operator. Also, it would be impractical, if not impossible, to find the miners who may have been exposed to the chemical if the miner were no longer employed at the mine.

A requirement to retain MSDSs for a lengthy period of time could result in the accumulation of a great number of MSDSs. Manufacturers may change the

formulation of some chemicals as processes or new technologies improve, requiring a revision to their MSDS. We expect operators to keep the current MSDS for the chemicals they use. Maintaining many MSDSs for a single brand name that has changed composition a number of times could lead to confusion and potentially cause greater harm than not having the old MSDSs available in case a miner develops a disease 10, 20, or 30 years after exposure. Some mines use a large number and variety of chemicals briefly, depending on which product is cheapest or which the distributor is carrying at a specific time.

For the above reasons, we believe the 30-year retention period would be excessively burdensome for the mining industry. We also believe, however, that it would not be a great burden for you to notify miners 3 months before disposing of an MSDS.

The interim final rule requires that you maintain the MSDS at the work area or a central location as long as the hazardous chemical is at the mine, and notify miners at least 3 months before you dispose of an MSDS. We require you to provide copies of MSDSs to miners because they have a right to specific information about their chemical exposures. We determined that this access provision is adequate to ensure that a miner could obtain a copy of the MSDS if the miner wanted one.

We believe miners request copies of MSDSs because they are concerned about a chemical's effect on their health. If a miner has a health concern, he or she usually requests a copy immediately rather than later. The effects of some chemicals, however, have a long latency period between the exposure and the onset of a disease. Miners can get a copy at any time the chemical is at the mine, but may not think to get a copy until you notify them that you intend to dispose of it. You may use any effective method to notify the miners, such as a verbal announcement in a safety meeting, a personal written notice, an all-employee newsletter, or a notice posted on the mine bulletin board.

F. Subpart F—HazCom Training

Training is the foundation of the HazCom standard, the principal means of conveying HazCom information to the miners. A premise of this interim final rule is that miners will make safer and more healthful decisions about their work when they know more about the chemicals in their work area. When you provide effective training, miners will know how to read and understand labels and MSDSs, how to get chemical information, and how to use it. They

will understand the risks of exposure to chemicals in their work areas, as well as the means of prevention and protection. You must develop and administer a training program that ensures that miners receive and understand this vital information about chemical hazards.

1. General Comments and Responses

The principal training standards that apply at your mine are found in parts 46 or 48, depending on the commodity you produce and the type of mine that you have. We proposed HazCom in 1990 as part 46. Subsequently, we promulgated training standards for some segments of surface mining as part 46. The fundamental goals and the statutory basis for our training standards in parts 46 and 48 are the same. Although commenters could not have anticipated this new part 46, we considered their comments on part 48 as applicable to part 46.

The burden of HazCom training. Under parts 46 or 48, you must provide miners initial training, annual refresher training and, whenever a new task is assigned, task and hazard training. The existing training standards provide an outline of subjects to be addressed for a successful safety and health training program: occupational health, hazard recognition, the safety and health aspects of the task, and safety and health standards, among others.

Several commenters felt that the proposal would be a heavy burden given the existence of these other training requirements. Some anticipated difficult administrative problems both in conducting and documenting the training. Some suggested that we not promulgate training requirements under HazCom, asking us to amend part 48 (and 46) to specify HazCom contents instead. Some suggested that language be included that "operators are permitted to satisfy the training provisions of [HazCom] by incorporating those requirements into provisions of Part 48—Training and Retraining of Miners." One commenter explained that by permitting—

* * * operators to choose incorporation of the training aspects of [HazCom] into Part 48, each operator can retain the flexibility to evaluate the practicality and appropriateness of using the Part 48 training scheme as the training administrative vehicle. Some elements which may be important to this evaluation are: the volume and variety of hazardous chemicals requiring hazard communication; the extent to which training required by [HazCom] is currently accomplished through Part 48; and the need to establish a separate training scheme with accompanying recordkeeping systems.

We intend HazCom to emphasize chemical hazards and to dovetail with

parts 46 and 48. You are in the best position to know the training needs of your miners and we have tried to grant you as much discretion as possible under HazCom to tailor your training program to fit these requirements. We expect this flexibility to improve training and, as a result, the ability of your miners to protect themselves. Although we expect most operators to integrate HazCom training into parts 46 or 48, you have the flexibility to conduct HazCom training independent of those requirements. We urge you to combine HazCom training requirements with existing requirements to unify your program, equipping better focused and informed miners to work safely with chemical hazards.

We disagree with the recommendation that all HazCom training requirements should be incorporated under parts 46 and 48 and that the training should not be addressed independently. The number of chemically-related injuries and illnesses indicates to us that, industry-wide, training on chemical hazards may be inadequate. HazCom provides a new emphasis in miner training—hazardous chemicals—that can be incorporated into your existing program, but can stand alone as well. Training is one of several interdependent aspects of a HazCom program. If we were to promulgate HazCom without training provisions, it would lose an integral part of the program and reduce its overall effectiveness. In response to comments, however, we added language specifically to clarify that you could credit relevant training conducted to comply with parts 46 and 48 and OSHA's HCS to meet HazCom requirements.

Your training and your approved training plan may have to be modified to add this new focus. The new HazCom training requirements are not automatically interchangeable with parts 46 and 48. In most instances, however, you should not have to revise your training plan to conduct HazCom training. We developed the training aspects of HazCom to be fully compatible with existing standards. If you train miners to recognize a chemical hazard, this is Hazard Recognition training. If you train miners about the HazCom standard, this is Mandatory Health and Safety Standards training. You must consider the hazardous chemicals at your mine, the conditions under which they are used, and what your approved plan says. We expect, however, that this interim final rule will have minimal impact on the mining industry with regard to increased training and administrative burdens.

Instructor qualifications. Some commenters recommended that we require you to conduct HazCom training using only qualified or certified trainers. One of these commenters stated that we should require OSHA qualification for HazCom instructors in mining and that we should require you to have hazard coordinators who maintain their qualifications by attending formal education or training courses. A commenter expressed concern that unqualified mine supervisors may be conducting HazCom training. Another commenter objected to the burden created by having to hire trainers and personnel to perform chemical identifications.

Under existing standards, we require every mine to have an MSHA-approved instructor for part 48 and a competent person designated by the operator for part 46. These trainers teach diverse and complex mine-specific courses. Although HazCom does not specifically require you to use qualified instructors, we expect that you will use the trainers on your staff to train miners about chemical hazards. MSDSs and labels are supposed to come with every container of a hazardous chemical brought to your mine. They will provide information for hazard identification and you should not have to hire or train additional persons. If you produce chemicals at your mine, we expect you to know which are hazardous and to train your miners on them. We recognize that training in chemical hazards will present challenges and you may have to obtain special HazCom training for your trainer.

Simplified HazCom training. In the proposal, we specifically asked for comments on additional ways to simplify HazCom training, especially for small operators and independent contractors, while retaining or improving the effectiveness of it. Several commenters recommended that we develop training materials, including sample MSDSs, plans, videos, and modules on chemicals. Some of these commenters suggested that we produce generic written HazCom and training programs for you to adapt to your needs. Another commenter suggested that we expand and use the State Grants Program to assist you in developing HazCom programs.

In response to these comments, we intend to develop a number of aids for the mining industry to use in implementing a successful HazCom program. Many of these aids are available now and the remainder will be available soon. You can contact the National Mine Health and Safety Academy at 304-256-3257 or visit our

website at *www.msha.gov* to find out what is available. Also, OSHA has developed training materials for its industries. Some are available from OSHA's website at *www.osha.gov* and can be adapted for use at mining operations.

Hazardous waste. The interim final rule does not exempt hazardous waste from training. Miners handling this type of hazardous material need all the information available to protect themselves from chemical hazards and from inadvertent exposure.

There are a number of sites under MSHA jurisdiction, particularly cement operations, which EPA licenses to burn hazardous waste. These operations typically use the waste as a supplemental fuel for their kilns. We specifically requested comments on the appropriateness of requiring HazCom training for miners who are exposed to EPA-regulated hazardous wastes.

One commenter supported our proposed hazardous waste training requirements. Another stated that we should use RCRA information for training purposes and copy OSHA's HCS. One commenter recommended that we not require HazCom training unless a miner is exposed to the hazardous waste. Another commenter stated that HazCom training in addition to EPA training may be redundant.

Uniformity in training. Some commenters recommended that we administer training for you because it would result in a higher level of consistency and quality in the training. Other commenters recommended the adoption of uniform training to help you and to provide consistency.

Over the past 15 years, various organizations have developed informational materials, training aids, and model training programs to assist industry in complying with OSHA's HCS. Due to the similarity between the OSHA HCS and HazCom, you should be able to use much of this material to assist you in developing and conducting miner training. Also, our State Grants Program may be a source of miner training and informational materials. Although we do not intend to conduct this training for you, we will provide information and assistance to trainers through our Mine Health and Safety Academy, Educational Field Services, the MSHA district offices, and State grantees.

2. § 47.51 Requirement for HazCom Training

The interim final rule requires you to instruct each miner about the hazardous chemicals in his or her work area; we proposed that you provide exposed

employees with training on hazardous chemicals in their work area. As with numerous other parts of the interim final rule, we believe that the scope and purpose clarifies how and to whom the provisions of HazCom apply and that the resulting change in language is not a change in meaning. Except for clear expression, we intend no difference between a requirement to "instruct," for example, and a requirement to "provide training." You must train a miner about the hazards of those chemicals to which he or she can be exposed.

Before first assignment to an area. The interim final rule requires you to provide HazCom training to miners before you assign them to work in an area that has a hazardous chemical. A number of commenters interpreted the proposal to mean that a miner had to complete HazCom training before an initial assignment to an area. Commenters expressed the view that the best way to impart knowledge and understanding is on-site while the miner is learning and doing the work.

The compatibility of HazCom with our principal training requirements includes the three forms of instruction to address different training needs: initial, refresher, and task. You must conduct initial training before a person is assigned to work; you must conduct refresher training within a year after the initial training. You must conduct task training both on-site before work is started and continue after a miner begins the assignment. We agree with commenters that valuable training can occur at the site at the time of assignment or after assignment. The requirement that you train miners before their first assignment to an area refers to general training appropriate to HazCom and may in fact supplement fuller on-site training. What comprises on-site training and how you allocate the time for each subject depends on the chemical hazards, the workforce, the processes at your mine, and the problems you foresee. It will vary depending on the mine.

We want to stress again, however, that HazCom is meant to work through the anticipation of risk. To reduce chemically-related injuries and illnesses, a miner must know about the hazards of the job and how to safely perform it before being left to work alone. The safety and health purpose of HazCom cannot be met if you delay the proper training until after an exposure has occurred.

New chemical hazards. The interim final rule requires you to train miners whenever you introduce a new chemically-related hazard into their work area. Introducing a new hazard,

however, is not the same as introducing a new hazardous chemical. For example, you have trained your mechanics in the hazards of a solvent they use at the mine. If you replace the solvent with a new solvent that presents the same hazards as the old and is going to be used in the same way and at the same locations, you are not required to conduct new training. You must, however, put the new solvent on your list of hazardous chemicals and keep a copy of the MSDS available. HazCom specifically states that you do not have to repeat training previously provided. If the new solvent poses a new hazard, you must train your mechanics about the new hazard. If you use the new solvent in a different way from the way you used your old solvent, you must train miners about any hazards that different use implies. If you will use the new solvent in a different location or process within their work area, you must inform them about this change and any hazards this new use implies.

HazCom training and exposure. Some commenters suggested that miners should have the information and training only for exposures that are planned or that would result from a foreseeable emergency or a mine disaster. Others recommended that HazCom training focus on chemicals known to be hazardous when miners are handling them, and where exposures are likely. Some commenters suggested that we base training on hazard recognition and avoidance at the work site where there is a potential for injury. Another commenter recommended that we base training on a risk assessment method applied to the hazards at the mine.

The interim final rule requires training for miners who work where there is a potential for exposure to a hazardous chemical. We are promulgating HazCom to anticipate the possibility of harm or loss from chemical exposures, not to regulate the risk of chemical use. Like any training or information standard, it is through this anticipation of risk that we mean for HazCom to address hazardous chemical exposure and prevent injuries and illnesses. We discuss the issue of potential exposure more fully under "§ 47.2 operators and chemicals covered" in this preamble.

Significant new information. Some commenters stated that the proposal was not clear in requiring operators to train miners about significant new information. In response to comments, we added language to the interim final rule to clarify that you must train your miners about significant new information about a chemical's hazards whenever you become aware of the new

information. You can give examples of this information at formal classroom training, informal safety meetings, or by a supervisor on the job. It can be written or verbal. We had intended in the proposal that you would update this information. The interim final rule, however, gave us an opportunity to make our intention clearer to you.

Significant new information about a chemical is rare. The physical properties of chemicals have been known for a long time and they almost never change. Most acute health effects are also known. Latent effects are more difficult to attribute to a chemical because of the time, environment, and other factors that obscure the relationship between the exposure and the disease. When new effects are found, they are generally significant. A recent example is IARC's reclassification of respirable crystalline silica as a probable human carcinogen. When these latent or other effects become scientifically accepted, you have a duty to tell your miners about them.

Credit for other training. To allow for the effective use of resources, as discussed above, the interim final rule includes language to clarify that you can credit relevant training conducted for compliance with OSHA's HCS or other parts of this chapter to meet HazCom's training requirements.

3. § 47.52 HazCom Training Contents

The interim final rule's requirements for the contents of HazCom training is the same as the proposal, but was restated in clearer language. One commenter suggested that groupings of substances by types of health effects would aid you in developing a training program. Another commenter requested that you be allowed to train miners on chemical groups or on individual chemicals. This commenter stated that product substitution does not necessarily mean that a new hazard has been introduced.

We intend HazCom to allow you to determine the best way to instruct your miners on how to identify and protect themselves from hazards associated with chemicals in their work area. If miners are exposed to a small number of hazardous chemicals, you could conduct their training specifically on each chemical. If miners are exposed to a large number of hazardous chemicals, you could conduct the training by categories of hazards and by referring miners to the substance-specific information on the labels and MSDSs and the locations or operations within their work areas where such chemicals are used. HazCom does not restrict

training to the hazards of a specific chemical or the hazards of a group of chemicals.

Several commenters supported the requirement that you train miners on the location and availability of the written HazCom program, written labeling information, and MSDSs. A commenter recommended that you periodically review the written program with all miners. Another stated that you should conduct HazCom training annually. The interim final rule requires HazCom training to address the HazCom standard, how you apply it at the mine, and how you make HazCom materials available.

Several commenters supported the required use of MSDSs in miner training and several objected to requiring the use of MSDSs in connection with miner training. A commenter recommended that we require hands-on practice with MSDSs. The interim final rule does not require you to include the actual MSDS when conducting the training. MSDSs are designed to be an excellent, concise source of information about a chemical and its hazards. We believe that MSDSs will often provide the most specific and reliable information about a hazardous chemical and you will find them a particular help when developing your training program. The interim final rule requires HazCom training to contain an explanation of the MSDS and its location and availability, but does not require hands-on practice. The interim final rule gives you the flexibility to provide additional training, including hands-on practice.

Some commenters suggested that miner training include the right to access MSDSs and that miners be advised of the retention time for MSDSs. As in the proposal, the final HazCom standard requires you to train miners about the requirements of HazCom, including the provisions addressing the miner's right to access the written HazCom program, written labeling information, and MSDSs.

Another commenter stated that you should keep MSDSs with training records to help prove that the chemical was present at the time of training. The interim final rule does not include this requirement because MSDSs may be kept in the work area where the hazardous chemical is present. Also, requiring you to maintain duplicate MSDSs with the training record could prove burdensome.

4. § 47.53 HazCom Training Records

MSHA and many commenters have a common concern about paperwork requirements and the recordkeeping burden this places on them. Congress

requires us to reduce the amount of paperwork you must keep or submit to us. That requirement is balanced against our need to function effectively in meeting the goals of the Agency. Aside from that, however, we wanted all MSHA training requirements, including records, to be as consistent and interchangeable as possible to keep the rule simple, reduce the burden, and eliminate any potential confusion for you. In view of those factors, we made a substantive change to the requirements for making and retaining training records. The proposal would have required the person responsible for conducting the training to certify the date and type of training given to each miner. You then had to keep this record for as long as the miner was exposed to a hazardous chemical.

The interim final rule is more performance-based in its recordkeeping requirements than the proposal in that it does not specify any format or require specific data for these records. We also reduced the record retention time significantly. Under the interim final rule, you must keep a copy of the HazCom training record for 2 years which makes this requirement the same as those in 30 CFR parts 46 and 48. We believe this considerable relief from your paperwork burden is justified because we verify records during mine inspections, twice or four times per year. Besides fitting in with the retention period for parts 46 and 48, we determined that 2 years was a reasonable amount of time for miners to access their training records.

MSHA Form 5000-23. For part 48 training, you must use our training certificate, MSHA Form 5000-23, or an approved equivalent, as a record of your training. Part 46 also requires documentation of training, but does not prescribe a specific form. If you incorporate HazCom training into parts 46 or 48 training, you can use Form 5000-23 or an approved equivalent to document the training. For purposes of HazCom, however, you may use any documentation that will convey adequate information for an inspector, miner, or miner's representative about who was trained, when, and what was covered. A copy of Form 5000-23 is available from our website.

Availability of records. The proposal also would have required you to make the certified training record available to miners, designated representatives, and MSHA. A commenter stated that the maintenance of certified training records should conform to the OSHA rule. We recognize that training and certification of training may be of particular concern to independent

contractors working at locations regulated by MSHA, as well as other locations regulated by OSHA. To alleviate their concern, if a miner is exposed to the same chemical hazards at both an OSHA and MSHA site, we will credit relevant training given the employee at the OSHA site as meeting our requirements. The employee's training record, however, must be clear that the subject of the training was relevant to both HazCom's requirements and the circumstances on mine property. We modified the proposal's provision for maintaining the certified record to indicate that a record, not a certification, must be available, and we moved this provision to subpart G, Making HazCom Information Available.

We intend that HazCom training cast light on chemical hazards. You should anticipate, therefore, that this training focus may cause miners to voice new concerns. You should prepare to respond to these questions with the best information you can gather: MSDSs, health sampling results for your mine, and data from whatever reliable sources are available to you.

G. Subpart G—Making HazCom Information Available

The proposal defined "access" as the right to examine and copy records. The interim final rule uses this same language. In providing access, the proposal required you to make written HazCom information available, but the requirements were repeated under each major provision. In response to comments, we consolidated these requirements in a single place in the interim final rule. We included language in the labeling and MSDS sections to emphasize the need to have this critical information readily available.

Hazard determination and awareness, labels and MSDSs, and training provide miners with essential information about hazardous chemicals. Each of these components of the HazCom program complements the others. They, along with the requirements for a written program and access to the HazCom materials, are necessary for the effective communication of chemical hazard information to miners and operators.

Chemical information can be complex and lead to confusion. When you give miners access to your written HazCom materials, you will have taken an important step toward eliminating the mystery, clarifying any misinformation and erroneous concepts, and defusing worker concerns about these chemicals. If miners are not given access to the information, they can grow suspicious about what you tell them and may disregard the information entirely, thus

reducing the effectiveness of the HazCom program. If you give miners access—to examine the material, copy it, and review it when they have time—they are more likely to share in the goals of the program, follow safe and healthful work procedures, and seek early medical help in case of exposure.

1. § 47.61 Access to HazCom Materials

The proposal required you to give miners and their designated representatives access to written HazCom materials: the written HazCom program, the list of hazardous chemicals, labeling information, MSDSs, and training records. The proposal also explicitly required that you give representatives of the Secretaries of Labor and Health and Human Services access to HazCom materials.

Some commenters asked that we not require operators to copy records for miners, citing an administrative burden. Others suggested miners put their requests for access in writing to "verify and effectively communicate actual requests for copies." Commenters also pointed out that § 103(a) of the Mine Act already gives representatives of the Secretaries of Labor and Health and Human Services access to HazCom materials.

This provision in the interim final rule is the same as the comparable provisions in the proposal, and is consistent with OSHA's HCS. Providing access means that if the miner requests a copy of any of the material associated with the HazCom program, you must give the miner a copy, as well as a copy of all updates. If you prefer, you can give the miner the records and the use of a copy machine so that he or she can make a copy. If you have an internet website, you could put the MSDSs on the website for access by your miners and customers, thus reducing the number of requests for paper copies.

As in the proposed standard, the final access provisions require operators to provide a copy of the records, in a relatively short period of time, for the miner to examine or to retain a copy. In the interest of flexibility, the interim final rule does not specify the time period in which you have to provide copies. Because you are required to keep all these HazCom materials available at the mine, including those available by computer, you should be able to provide them to miners, designated representatives, and Federal officials on the same day or, at most, within 24 hours of receiving the request.

While we agree that a written request would "verify" and "effectively communicate * * * an actual request",

there are numerous ways to achieve this goal other than having the miner put the request in writing. Requiring a written request is unnecessary because better alternatives are available. For example, you can have miners sign a receipt for the copies or initial a log. Requiring written requests could delay miners' access to essential HazCom materials. Therefore, the interim final rule does not require requests for copies of HazCom materials to be in writing.

Although it is not stated, you must provide access to representatives of the Secretaries of Labor (e.g., MSHA inspectors) and Health and Human Services (e.g., NIOSH investigators). In response to comments, the interim final rule does not explicitly include this provision because it is mandated under the Mine Act.

2. § 47.62 Cost for Copies

The interim final rule, as in the proposal, requires you to provide one copy of any written HazCom material without cost to the miner. This includes a single copy of any revisions or updates. Some commenters were concerned that operators would have to provide copies at no cost to the miner. They stated that this was not reasonable and recommended that we require you to provide one copy, but not additional copies of the same document, at no cost. For this reason, if the miner or designated representative requests another copy of material you have already given them, the interim final rule allows you to charge for subsequent copies of the same material. These administrative fees must be reasonable and they must be the same for everyone. You may not refuse to provide these additional copies. These provisions will ensure that miners have access to information about hazardous chemicals without placing an undue burden on you.

3. § 47.63 Providing Labels and MSDSs to Customers

If you produce a hazardous chemical, HazCom requires you to provide the labeling information and the MSDS to customers when they request them. If you have an internet website, you could put the labeling information and MSDSs on the website for access by your miners and customers, thus reducing the number of requests for paper copies. You also have the option of sending copies by e-mail or facsimile (fax).

We had proposed that you send labeling information with the first shipment of the product to a downstream user and updated information with the next shipment.

The proposal would have required you to send an MSDS upon request.

After further consideration of the comments, we concluded that a requirement to automatically send labeling information to customers is unnecessary. Our experience indicates that many operators currently include hazard information on their product's label in response to market forces generated by the labeling requirements of other Federal agencies, primarily OSHA's HCS.

H. Subpart H—Trade Secrets

The Trade Secrets subpart balances two important interests: the miner's interest in obtaining information on hazardous chemicals to prevent or treat adverse effects, and your proprietary interest in protecting your business. In general, we believe miner safety and health is best served by full disclosure of a chemical's identity. We recognize, however, the need to protect trade secrets. Once a trade secret is disclosed, its value may be lost. Under the Trade Secrets subpart:

- You may always protect information about trade secret processes and percentages of mixture.
- You may protect trade secret chemical identities except in emergency and specified non-emergency situations.
- You must always disclose the properties, the safe use, and the safety and health effects of trade secret chemicals.

Our proposal was, in essence, a restatement of the existing OSHA trade secret provision. The OSHA rule has worked for other industries for years, has withstood the test of experience, and can ensure that legitimate trade secrets will not be disclosed beyond what is necessary to protect miners. The comments we received on this subpart were generally supportive. The interim final rule, while revised stylistically, retains the substance of the proposal and the OSHA rule.

We understand that most operators are probably not concerned with trade secrets. One commenter said that the Trade Secrets subpart had limited utility for the coal industry. Another commenter said the provision was unnecessary for crushed stone. Both of these commenters wanted us to delete the trade secret provisions.

We disagree with those commenters. To the operators who create unique processing compounds, trade secret protection may be vitally important. One commenter thought that we were downplaying that importance by anticipating limited interest in the provision. On the contrary, we recognize the value of trade secrets

where they exist. Although the subpart may appear elaborate, it provides a proven framework to accommodate both the interests of protecting trade secrets and miners' health and safety. We have considered all comments submitted and determined that the Trade Secrets subpart will effectively provide for the investigation and settlement of disputes.

1. § 47.71 Provisions for Withholding Trade Secrets

Once a particular chemical has been classified as a trade secret, HazCom allows you to withhold the chemical name and other specific identification of the hazardous chemical from the written HazCom program, label, and MSDS, provided that—

- You identify the trade secret chemical in a way that it can be referenced without disclosing the secret;
- You disclose the properties and effects of the chemical in the MSDS;
- You indicate in the MSDS that the chemical's identity is being withheld as a trade secret; and
- You make the chemical's identity available to MSHA, health professionals, miners, and designated representatives following other provisions in this subpart.

HazCom does not require you to disclose process or percentage of mixture information. The interim final rule incorporates the language of the proposal with a few editorial changes.

2. § 47.72 Disclosure of Trade Secret Information to MSHA

This section requires you to disclose to us any information required by this subpart. If you are going to make a trade secret claim, it must be made no later than when you provide the information to us so that we can determine the validity of the claim and provide the necessary protection. We moved this provision for disclosing information to MSHA in order to keep all the disclosure sections together in the interim final rule. There were no comments on giving trade secret information to MSHA.

3. § 47.73 Disclosure in a Medical Emergency

You must immediately disclose the identity of a trade secret chemical to a health professional in a medical emergency. You are required to make this disclosure when the professional is treating the miner and determines that—

- A medical emergency exists, and
- The specific chemical identity is necessary to provide adequate treatment.

The proposal required you to identify the trade secret chemical to a treating

“physician or nurse” in the event of an emergency. One commenter suggested that we revise the provision to read “physicians” assistants and other health-care professionals who provide treatment” instead of “physician or nurse” so that HazCom includes other health-care professionals involved in treatment and patient care. This subject is also addressed in the Definitions subpart of this preamble under *health professional*.

You must provide the chemical's identity to the treating health professional immediately in an emergency. After the emergency, however, HazCom allows you to require that the health professional provide you with a written statement of need, as well as enter into a confidentiality agreement to protect against the unauthorized disclosure of trade secret information. In general, the statement of need verifies that the health professional will be using the trade secret information only for the needs permitted by HazCom. The confidentiality agreement ensures that the health professional will not make any unauthorized disclosures of the trade secret.

Under § 47.74, non-emergency disclosure, we state that you may be subject to a citation. One commenter recommended that similar language be added for unwarrantable failures if disclosure is denied in an emergency. We did not adopt this recommendation in the interim final rule. The § 47.74 citation provision is part of a procedure for reviewing denials of disclosures and balancing interests, which applies only to non-emergency situations. In any event, a violation of the emergency disclosure standard would, like other violations of mandatory standards, be subject to Mine Act enforcement.

4. § 47.74 Non-emergency Disclosure

Commenters agreed with the proposed provisions for non-emergency disclosure of trade secret chemical identity and we included these provisions in the interim final rule. In a non-emergency situation, you must disclose the trade secret information to a health professional providing medical or other occupational health services to a miner if they give you a written statement of need requesting the information. Under this section, miners and designated representatives also have the same access. The statement of need must address the reasons specified in the rule, and explain why other available information will not suffice. In addition, the requester has to enter into a confidentiality agreement.

5. § 47.75 Confidentiality Agreement and Remedies

The confidentiality agreement may restrict the use of the trade secret chemical identity to the health purposes indicated in the statement of need, and may provide for legal remedies in the event of a breach of confidentiality. You may not require a penalty bond in the confidentiality agreement; however, you may pursue other non-contractual remedies to the extent permitted by law.

You must allow the health professional, miner, or designated representative to disclose the trade secret chemical identity to MSHA if they decide there is a need. You may also provide in the agreement, however, that they must let you know before or at the time they make the disclosure. We proposed this last item as a mandatory requirement. It is not mandatory in the interim final rule because we determined that we could not enforce it. Accordingly, we are leaving it to the parties entering the confidentiality agreement to determine if it is needed. This provision only applies to disclosure of the trade secret chemical identity. In any event, miners and miners' representatives have the right under the Mine Act to confidentially report an imminent danger or health and safety violation to MSHA and explain how a trade secret chemical may be involved.

6. § 47.76 Denial of a Written Request for Disclosure

You may deny a written request for disclosure of trade secret information in non-emergency situations. Your denial must—

- Be in writing, which includes e-mail and facsimile (fax) communication;
- Be given to the person requesting the information within 30 days of the request;
- Include evidence that the chemical's identity is a trade secret;
- State why the request is being denied; and
- Explain how alternative information will satisfy the medical or occupational health need identified in the request.

Commenters agreed with the proposed provisions for denying a request for non-emergency disclosure of trade secret information and we included these provisions in the interim final rule.

7. § 47.77 Review of Denial

If you deny a request for trade secret information, the person or organization making the request can refer the denial to us for review. In order for the request

to be reviewed, it must include a copy of the request for disclosure, the confidentiality agreement, and your written denial. We will consider the appropriateness of the denial based on the evidence you submit to support your claim that the chemical's identity is a trade secret, the medical or occupational health need for the information, and the proposed means to protect confidentiality.

If we determine that you wrongfully denied the request for disclosure, you will be subject to a citation. If you can demonstrate to us that the execution of a confidentiality agreement would not protect you against the potential harm of an unauthorized disclosure of the trade secret information, we may set conditions to ensure that medical services are provided without undue risk of harm to you.

Finally, if you contest a citation for failure to disclose trade secret information, the Mine Safety and Health Review Commission will review the citation.

Commenters agreed with the proposed provisions for reviewing a denial and we included these provisions in the interim final rule.

I. Subpart I—Exemptions

The proposal included both the exemptions from the rule and the exemptions from labeling in the section on "scope." It then repeated the labeling exemptions under "labeling." Commenters remarked that this repetition was unnecessary. In the interim final rule, we placed each set of exemptions in a table in a separate Exemptions subpart near the end of the rule. This change in format brings the compliance requirements closer together at the beginning of the rule while, at the same time, eliminating repetition and making the exemptions more noticeable.

1. § 47.81 Exemptions from the HazCom Standard

The interim final rule exempts the following materials from the full scope of the standard. These exemptions are substantively the same as proposed.

Articles. We proposed to exempt articles from the full scope of HazCom. This proposed exemption, however, merely listed "articles" and contained no description or criteria under the "scope and application" section of the rule. The definition for "article" contained both the description and criteria for exempting an article, the same as in OSHA's HCS. The proposed definition described "article" as a manufactured item, other than a fluid or particle, that is formed to a specific shape or design during manufacture and

has end-use functions dependent upon its shape or design. For example, even though polyaromatic hydrocarbons are hazardous chemicals, their presence in a plastic bucket or seat cushions or ventilation curtains is exempt from HazCom because the bucket, seat cushions, and ventilation curtains are articles. Polyaromatic hydrocarbons in diesel exhaust or adhesives, however, are covered by HazCom. Even though chromium is a hazardous chemical capable of causing poisoning, chromium in a steel bar or chisel would be exempt from HazCom, regardless of its percent composition, because the bar and the tool are articles.

The definition also included paragraph (c), which stated that an article is exempt if, under normal conditions of use, it releases no more than trace amounts of a hazardous chemical and presents no physical or health hazard. For example, chromium in a welding rod is not exempt. Even though the welding rod is formed to a specific shape or design during manufacture and has end-use functions dependent upon its shape or design, the rod releases more than trace amounts of the hazardous chemical under normal conditions of use.

Commenters generally agreed with the exemption of "articles" and with its definition in the HazCom proposal. Some commenters suggested that we eliminate the criteria in paragraph (c) of the definition because they are unnecessary and contrary to the thrust of the exemption for articles. Other commenters suggested, however, that the definition must address risk for this exemption to be effective. To determine when an article is a hazardous chemical, some commenters suggested that the definition include a *de minimis* provision establishing a low threshold concentration below which the rule would not apply. Other commenters wanted a significant risk provision. Several commenters recommended that we link this provision to the Mine Act by stating that an article is exempt if it "does not release a quantity of a hazardous chemical that poses a risk of material impairment of health or functional capacity to miners." Another commenter suggested that HazCom clearly state our intent to exempt trivial risks. This commenter cited a court decision on OSHA's HCS which interpreted this exemption to mean that "any amount of release that could conceivably cause damage eliminates exemption as an 'article'."

Commenters also questioned what we meant by the terms "minute" or "trace" as applied to releases of chemicals from

an article and by the phrase "normal conditions of use."

These commenters stated that we must clarify this provision for the HazCom interim final rule to be effective. One commenter stated that—

* * * If exposures are negligible, labeling products as hazardous causes needless concern to workers. If warnings are provided for all measurable releases of chemicals, regardless of risk, workers will be unable to distinguish between meaningful/significant and trivial risks and the standard will be severely diluted.

We agree with commenters' concerns that paragraph (c) of the proposed definition of article is unclear about how much of a hazardous chemical released from a manufactured item under normal conditions of use would constitute either very small, minute, trace, or *de minimis* quantities. In many cases, it may be both time consuming and difficult to accurately determine whether an item is an article or a hazardous chemical. For example, one commenter stated that "[u]sing present day analytical chemical technology, extremely low levels of chemicals can be detected everywhere."

To clarify our intent, we separated the criteria for exemption from the definition for article. We also used the term "insignificant amount" instead of "very small quantity" and "minute or trace amounts." By using these terms, we intend to shift the emphasis from the quantity of a hazardous chemical release to the significance of the release as it relates to risk. We believe that these language changes do not change the substantive intent of this exemption. Although we do not intend to regulate trivial risks, we recognize that the meaning of "trivial" is subjective.

Biological hazards. We proposed to exclude biological hazards from the HazCom standard, consistent with OSHA's HCS. We received a few comments supporting this exemption. Some commenters objected to our exemption of biological hazards because there are dangers at the mine associated with these substances, and information concerning their hazards should be communicated to miners.

Although fungus, molds, and poison ivy have caused problems, there is little evidence to indicate that biological substances on mine property present any significant physical or health hazards. These biological hazards are not occupationally-related so much as they are ubiquitous. If there is a hazardous chemical present in addition to the biological hazard, it would be subject to the requirements of HazCom. For example, a bottle containing a

biological sample in a hazardous solvent would have to be labeled for the hazardous solvent. This specific exemption is included in the final HazCom. This is consistent with our proposal and OSHA's HCS.

Consumer products. We proposed to exempt consumer products and hazardous substances from the full scope of HazCom when operators or miners use them at the mine in the same manner as an ordinary consumer (normal consumer use). The proposal would have exempted consumer products as defined in the Consumer Product Safety Act (15 U.S.C. 2051) and hazardous substances as defined in the Federal Hazardous Substance Act (15 U.S.C. 1261), when they are subject to consumer product safety standards or labeling requirements issued under these Acts. The Federal Hazardous Substances Act (FHSA), administered by the Consumer Products Safety Commission (CPSC), regulates hazardous substances in interstate commerce. The CPSC specifically exempts pesticides subject to the Federal Insecticide, Fungicide, and Rodenticide Act, and foods, drugs, and cosmetics subject to the Federal Food, Drug, and Cosmetic Act, from the term "hazardous substance" under FHSA. In the proposal, we also specifically requested comments on the need to exclude from coverage any consumer product excluded by Congress from the definition of hazardous chemical under § 311(e)(3) of the Superfund Amendments and Reauthorization Act (SARA) of 1986, Pub. L. 99-499.

Commenters suggested that we define the term "consumer product" using a working definition for exempt materials rather than referencing statutes that mean nothing to most operators. One commenter stated that the EPA's consumer product exemption under SARA represents a more reasonable approach than that in the proposal and urged us to incorporate SARA's definition of consumer products. SARA defines a consumer product as—

* * * any substance to the extent it is used for personal, family or household purposes, or is present in the same form and concentration as a product packaged for distribution and use by the general public.

This commenter reasoned that keying the consumer product exemption to consumer packaging and concentration would achieve the same result as the proposed exemption, but without requiring you to demonstrate that your miners use the consumer product as an ordinary consumer.

Another commenter indicated that many mining uses of consumer products

may result in exposure that was not contemplated by the manufacturer packaging the product for consumer use. Some commenters questioned how individuals using consumer products in an unintended manner would affect our exemption of consumer products from HazCom. Another recommended that we delete the requirement that you must demonstrate that the consumer product is being used in the same manner as in normal consumer use. The commenter further stated that there is no evidence to demonstrate that significant risks are present where such materials are used in a manner or amount not consistent with normal consumer use.

Commenters objected to the term "normal consumer use" in the proposal and recommended that we delete it from the interim final rule. Another commenter stated that requiring an additional determination, as to whether the product is used at the mine in the same manner as in normal consumer use, places an exceptional burden on you and recommended that we exempt all consumer products from HazCom. One commenter stated that consumer products should be included in the final rule because workplaces use the materials more frequently and in larger quantities than do private homes. Another stated that comparing the use of a consumer product by a miner with its use by a normal consumer is neither practical nor possible, because the duration and frequency of use are highly variable.

There appears to be a misconception that by virtue of being marketable to consumers, consumer products are inherently safe and their use does not require you to provide additional information to miners using them at the mine. Consumer products, however, are not inherently safe. We recognize that there are situations where a miner's exposure is significantly greater than that of an ordinary consumer and that, under these circumstances, consumer products or hazardous substances which are safe for contemplated consumer use may pose unique hazards at the mine. For this reason, we limit the exemption in such cases to labeling. You must comply with the other requirements of HazCom, such as those concerning an MSDS and training, to inform miners about the hazardous chemical. This is consistent with OSHA's HCS.

The interim final rule exempts consumer products from HazCom when you use them as an ordinary consumer. If you use the consumer product longer or in greater quantities or concentrations than an ordinary consumer, it is still exempt from labeling when it is already labeled under CPSC. If you want to

apply this exemption to a consumer product used at your mine, you must be able to show that miners use it in their work areas in the same manner as in normal consumer use and that the use results in a duration and frequency of exposure which is not greater than exposures experienced by ordinary consumers.

Many mines buy consumer products to use in their daily operations. The consumer products exemption is not dependent on whether you purchase it wholesale or retail. For example, a 5-gallon container of paint from a retailer may not have an MSDS. If you purchased this paint from an industrial supplier, it would be labeled to comply with HazCom and the supplier would probably provide an MSDS.

If you use a consumer product the way the manufacturer intended and the miner is not exposed to the chemical more often or for longer than an ordinary consumer, it is exempt from HazCom. The hazardous nature of a chemical and the potential for exposure are the factors that determine whether a chemical is covered. If the chemical is not hazardous, or if there is no potential for exposure, HazCom does not include it. For example, if you assign a miner to paint a hazard warning on an explosives magazine using a can of spray paint, that use would be one time and of short duration, just as it would be if an ordinary consumer used the product. If the miner's job is painting, requiring the use of spray paint frequently throughout the work shift or daily, this use does not qualify as "normal consumer use" and the hazardous chemicals in the paint would be included in the rule.

We expect you to know whether the use of a consumer product on mine property is unusual, of longer duration, or more frequent than home use. Although a complete exemption may be easier to comply with and enforce than a partial one, the issue of concern to us is whether miners have sufficient information to use the hazardous chemical safely.

In response to comments that we define "consumer products," we decided to incorporate CPSC's definition, rather than SARA's, because both HazCom and OSHA's HCS reference CPSC's definition. The CPSC's definition clarifies the exemption, is compatible with HazCom and OSHA's use of the term, and provides the necessary protections for miners.

Items for personal consumption. We proposed to exempt foods, drinks, drugs, cosmetics, and tobacco or tobacco products from HazCom when they were intended for personal consumption or use by miners while on mine property.

Commenters generally supported these exemptions. One commenter recommended that HazCom exempt distilled spirits, consistent with OSHA's exemption. Other commenters recommended that this exemption also include the condition that the product be packaged for retail sale and for use by the general public. A few commenters recommended that we not exempt any hazardous chemical.

The proposal did not specifically exempt alcoholic beverages sold, used, or prepared in a retail establishment, because we thought these exemptions did not apply to mining. Our existing standards for metal and nonmetal mines (§§ 56.20001 and 57.20001) prohibit intoxicating beverages in and around mines. Because we do not have standards for coal mines which specifically address intoxicating beverages, we have included an exemption for alcoholic beverages in the interim final rule to be consistent in both mining sectors and to avoid confusion.

The interim final rule exempts foods, drinks, including alcoholic beverages, drugs, cosmetics, tobacco, and tobacco products intended for personal consumption or use by miners while on mine property. For example, HazCom does not cover items such as aspirin in a first aid kit or food served at a mine cafeteria or vending machine.

Nuisance particulates. We proposed to exempt nuisance particulates that do not pose a covered health or physical hazard from the full scope of HazCom. Many commenters supported the exemption of nuisance particulates and nonspecific mine dust. Commenters stated that nuisance particulates do not present any known irreversible health effects and that there are no standards in existence to use as a baseline. Several commenters stated that inclusion of nuisance particulates in HazCom could reduce the effectiveness of a HazCom program by transmitting too much information to employees and diluting the focus on more serious or less recognized chemical hazards.

A number of commenters objected to the exclusion of nuisance particulates and nonspecific mine dust from HazCom. These commenters stated that many particles thought to be nuisances are found later to be important health problems and that if the hazard exists at the mine, regardless of the amount, it should be subject to the provisions of HazCom. One commenter stated that nuisance particulates are not excluded by OSHA and we should not exclude them. This commenter stated further that it would be useful to have MSDSs for nuisance particulates to provide

miners with reliable information. Another commenter recommended that we omit the nuisance particulate exemption from the standard because there is no proper classification of these substances.

We did not include an exemption for nuisance particulates from the provisions of HazCom because they can pose a covered health or physical hazard when the dose is high enough. For this reason, the proposal was misleading. Operators who produce low hazard chemicals, such as limestone or salt, could have wrongly concluded that their product was not covered by HazCom. There is evidence that exposure to an excessive amount of respirable dust, even dust that does not cause health effects at lower exposure concentrations, can produce reversible health effects. Also, in a mine environment, nuisance particulates are often contaminated with other hazardous chemicals.

ACGIH considers the term "nuisance particulates" as obsolete. In the past, the ACGIH defined and listed examples of nuisance particulates to provide guidance to industry for the purpose of controlling inhalation exposures to those dusts. Based on the 1973 ACGIH Threshold Limit Values, we currently enforce an exposure limit for nuisance dusts of 10 milligrams per cubic meter (mg/m^3) as a time-weighted average (TWA). The current edition of the ACGIH TLV's does not list substances as nuisance particulates. In addition, our proposed air quality standard (54 FR 35760), published August 29, 1989, would have established a $5 \text{ mg}/\text{m}^3$ respirable mine dust limit applicable to all nonspecific dusts, including those currently regulated as nuisance particulates. These current and proposed rules demonstrate that MSHA has considered nuisance particulates as a health hazard for at least 20 years. Because the HazCom proposal would have covered dusts that posed a covered safety or health hazard, even if the dust had previously been categorized as a nuisance particulate, we consider the HazCom interim final rule to be consistent with our proposal and OSHA's HCS.

Radiation hazards. We proposed to exclude ionizing or non-ionizing radiation hazards from HazCom, consistent with OSHA's HCS. We have also incorporated this exemption in the interim final rule.

Some commenters suggested that we not exempt radiation from HazCom because, if radiation is a potential hazard in the work area, this should be communicated to miners. Another commenter suggested an exemption for

non-product-specific physical hazards, such as noise, vibration, and hot environments, associated with the mining environment.

Radiation hazards are covered under other Federal requirements and we have standards for metal and nonmetal mines that require hazard notification for radiation hazards, including the posting of hazard warning signs. A chemical with radioactive properties that also presents other types of health and physical hazards is not exempt from HazCom. We do not consider non-chemical-specific physical hazards (such as heat stress, ergonomic hazards, or hearing loss) relevant to this rulemaking because HazCom is meant to address chemical hazards.

Wood and wood products. We proposed to exempt from HazCom wood or wood products which do not release or otherwise result in exposure to a hazardous chemical under normal conditions of use. We did not receive comments regarding this exemption.

Wood products, such as lumber, plywood, and paper, are easily recognizable in the work area and pose a risk of fire that is obvious and well known to the miners working with them. Wood dust is not generally a wood "product" but is created as a byproduct during sawing, sanding, and shaping of wood. We believe that it is necessary for you to inform miners about the hazards of wood dust and chemically-treated wood and precautionary measures to minimize or prevent exposure.

The interim final rule contains specific language clarifying that wood dust and wood treated with a hazardous chemical, such as wood preservatives or pesticides, are not exempt from HazCom. This exemption is consistent with OSHA's HCS on the coverage of wood and wood products. In response to comments, we exempted wood and wood products from the labeling requirements.

2. Hazardous Waste

We had proposed an exemption for hazardous waste from both the labeling and MSDS requirements when the waste is covered by the Environmental Protection Agency (EPA) under the Solid Waste Disposal Act, as amended by RCRA. Under EPA standards, a waste analysis is required as part of the permit to burn or dispose of hazardous waste. However, EPA does not require the waste analysis to specify the chemicals' hazards or provide that it be made available to employees. MSHA indicated in the preamble to the proposal, that OSHA also excluded hazardous waste regulated by EPA from

coverage under its rule. MSHA requested comments on the appropriateness of exempting other hazardous waste not regulated by EPA from the labeling and MSDS requirements of the proposal. A number of mine operators have EPA permits to burn hazardous waste in their kilns as a supplemental fuel source or dispose of hazardous waste in their tailings.

We received numerous comments on this exemption. Some commenters supported the proposed hazardous waste exemption in general, agreeing with our rationale. Commenters suggested the following specific revisions to our proposed hazardous waste exemption:

- That we exempt wastes not regulated by EPA, particularly those reused on-site or sent off-site for recycling, such as waste oil, antifreeze, and solvents.
- That we exempt process-related waste, such as tailings, mine waste, and other hazardous waste generated by the mine, because they are already regulated by us and EPA and the inclusion of these materials in HazCom labeling and training requirements could lead to serious conflicts with other standards.
- That we define hazardous waste to include garbage, refuse, sludge, and other discarded materials including solid, liquid, semisolid, or contained gaseous material resulting from mining because you should inform potentially exposed miners about the hazards associated with scrap and discarded material at the mine.
- That we extend our exemption to include hazardous waste regulated under State programs pursuant to the requirements of RCRA.

Several commenters suggested that we treat hazardous waste exposures as OSHA does, by not requiring HazCom training for those miners who are exposed to EPA regulated hazardous waste. One commenter specifically suggested that we follow OSHA's requirements for hazardous waste operations in 29 CFR 1910.120(e) by requiring training only for specific hazardous waste operations and not for all types of hazardous waste handling.

Since our proposal was published, an increasing number of mining operations have obtained permits to burn hazardous wastes in their kilns. Some bury waste in a landfill or dispose of their own wastes from the mining process. There are 55 mining operations burning hazardous waste and waste products with an average of 16 miners per site. Wastes burned include biological wastes, pesticides, herbicides, waste oil, heavy metals, and tires. Some, but not all, of these hazardous wastes

are regulated by EPA. A few operations have EPA issued permits that allow them to burn hundreds of kinds of hazardous wastes, up to 260 different kinds. Many are burning thousands of gallons of waste products a year in their kilns. Two operations handle more than 15 million gallons per year and 12 operations handle more than 1 million gallons per year. Most handle either liquid or solid wastes; some can accommodate both. Some of these wastes would meet HazCom's definition of a health or physical hazard or both.

NIOSH stated that hazardous waste not regulated by the EPA or other existing statutes should not be exempt from HazCom because to do so would be contrary to the intent of HazCom. The rulemaking record indicates the need for miners working with hazardous waste to be informed of its hazards either as a mixture or its individual components. We have determined that, for HazCom to be effective, it must include all hazardous chemicals to which miners may be exposed and, therefore, the interim final rule does not exempt hazardous waste regulated by the EPA. Other waste chemicals are subject to the same requirements as every hazardous chemical on site.

After a careful review of all comments received on this issue, we have determined that it is necessary to cover hazardous waste under our standard. Although OSHA excludes coverage of hazardous waste regulated by EPA, OSHA has other specific standards directed to hazardous waste operations. (29 CFR 1910.120). OSHA was required to issue these standards by § 162, title 1 of the Superfund Amendments and Reauthorization Act of 1986 (SARA). We do not have similar statutory requirements or standards regarding hazardous waste operations and believe that we would be denying protection to miners handling hazardous waste if we were to exempt it from coverage. Labels are an important component of an effective hazard communication system. Requiring all hazardous waste to be labeled will eliminate any confusion as to whether the waste is covered by the EPA. Accordingly, the interim final rule does not exempt hazardous waste from coverage.

Under the interim final rule, you must provide each potentially exposed miner with MSDS information about the hazardous waste to the extent that it is available. You must make any information available to the miner or designated representative which identifies its hazardous chemical components, describes its physical or health hazards, or specifies appropriate protective measures. If the chemical is

a hazardous waste and an MSDS is unavailable, the chemical is hazardous if any of the sources in the Identifying Hazardous Chemicals, Table 47.11, indicates it is a physical or health hazard. We believe that this change in the interim final rule does not impose an additional burden on you because existing labels on containers of hazardous waste brought onto mine property that meet the comparable requirements of other Federal or State regulations will fulfill the labeling requirements of this interim final rule.

HazCom requires you to provide the information needed for labels and MSDSs, through any available information and training, to miners who work with hazardous waste. Some of this information is available from the EPA permit, your analysis of the waste, or the supplier of the waste material. If the supplier of the hazardous waste prepares any document for compliance with EPA or OSHA standards that contains the same types of information as required for the label and MSDS, we expect you to obtain a copy of these documents and to provide miners with access to them.

3. § 47.82 Exemptions From Labeling

We proposed to exempt from HazCom's labeling requirements those hazardous substances regulated and labeled under the authority and standards of other Federal agencies. Commenters objected to the proposal's referencing the laws and standards of other organizations and agencies, considering their inclusion to amount to "incorporation-by-reference." They stated that the rule does not include these documents, that they are not useful in understanding HazCom, and that our rules will become dependent on out-of-date material or require rulemaking to keep them current. The proposal had referenced the Consumer Product Safety Act; the Federal Hazardous Substances Act; the Federal Food, Drug, and Cosmetic Act; the Federal Insecticide, Fungicide, and Rodenticide Act; the Solid Waste Disposal Act; and the Resource Conservation and Recovery Act. Commenters suggested that we replace these references with simple operational definitions that would be understood by the miner.

The interim final rule includes these references to clarify which toxic materials, hazardous substances, and consumer products are exempt from HazCom labeling. We consider these references as informational because they inform you of the limits of your responsibility rather than imposing an obligation. To the extent practical, the

interim final rule simplifies the references by not including legal citations. Use of these references to specify exemptions from HazCom means that another Federal agency requires labeling of the hazardous chemical. A simple operational definition would be that you do not have to further label a hazardous chemical brought onto mine property if it already has a label indicating its identity and appropriate hazard warnings.

We expect that most hazardous chemicals regulated by another Federal agency are labeled by the manufacturer with information about their identity, hazards, precautions for normal use and emergencies, and phone numbers for additional information. To avoid duplicate Federal standards, we will accept pre-existing hazard labels that comply with the labeling requirements of another Federal statute or standard for compliance with HazCom. For example, if a hazardous substance or waste is produced at the mine, and it is covered by the standards of another Federal agency, you must label it first in accordance with those standards. Consistent with the purpose of HazCom, if the hazardous chemical is not labeled in accordance with another Federal statute or standard, you must label it in accordance with the requirements in § 47.32 (label contents) of HazCom.

Raw material. We proposed to exempt the raw material mined or milled from the labeling requirements of HazCom while on mine property. Many commenters strongly supported the proposed raw material exemption. Some of these commenters recognized the impracticality of affixing and maintaining labels on every ore car or on each bin or hopper containing the mined material and believed that such labels would be of little benefit. One commenter stated that they currently labeled bins of their raw material but found that the labels were difficult to read due to the dust covering them. Other commenters believed that, generally, operators inform miners about the hazards of the raw material being mined and this information could be considered common knowledge. Another commenter stated that while they did not disagree with a labeling exemption for the raw material mined—

* * * the final rule should re-state the operator's duty to train and inform miners about the hazards inherent in the mineral being mined and by-products of the mining process such as crystalline silica, radon progeny, etc.

This commenter stated further that you should at least make an MSDS on these substances available and warn miners in a variety of ways. Among those commenters supporting the raw material exemption, one recommended that we clarify that a container of a raw material that has undergone a chemical reaction with other constituents, and thus is not a mixture, would not have to be labeled even if a hazardous chemical may have been added to it during processing at the mine. This commenter further stated that—

[w]hile the process container where the hazardous chemical is added may need to be labeled (at least where the process does not result in an instantaneous chemical reaction), the container subsequently holding the commodity produced for sale by the operator would not constitute a "mixture" and should not be labeled.

A few commenters disagreed with our proposed raw material exemption and requested that HazCom require labeling of all containers of hazardous raw material. One of these commenters expressed concern about the legibility and adhesion of labels, yet was confident that you could develop workable solutions. Other commenters stated that unlabeled containers of hazardous chemicals must be labeled under our existing labeling standards.

The interim final rule exempts containers of raw materials from labeling while they are on mine property. For any raw material that is determined to be a hazardous chemical, you must supply labeling information when requested to downstream users, to maintain MSDSs, and to train miners about its physical and health hazards. We expect that miners are familiar with the hazards of the material being mined because they must receive training on the health and safety hazards of their job under 30 CFR parts 46 or 48. If you add a hazardous chemical to a container of raw material, however, you must label the container for the hazardous chemical added if the mixture or the newly created compound meets the criteria in the hazard determination section of HazCom (§ 47.11).

Pesticides, food, and consumer products. The proposal included exemptions from labeling for pesticides; food, food additives, and color additives; and consumer products which are required to be labeled under standards issued by other Federal agencies. The interim final rule is generally consistent with the proposal and with OSHA's HCS. The applicable definitions of the substances addressed in these exemptions are those provided by the governing statutes and standards.

Although there were some commenters who addressed these exemptions, few had specific comments. Among those who did comment, many supported our exemption of consumer products. Several suggested that we not require coal mine operators to include consumer products in HazCom programs because this would result in meaningless storage of countless MSDSs. Another believed that we should clarify that you have a responsibility to maintain the labels that come on these hazardous materials.

Commenters agreed with our intent to have a similar provision with OSHA's HCS, stating that separate rules for consumer products would be redundant and serve no purpose. Another commenter suggested that we also exempt, as per OSHA's standard, drugs, cosmetics, medical or veterinary devices, and materials intended for use as ingredients in such products (e.g., flavors and fragrances). In regard to our proposed consumer product exemption, one commenter stated:

* * * consumer products already possess adequate labels with hazard identification and safe use instructions. Since no one knows the hazards of a product better than its manufacturer, the safest possible use of the product is in accordance with the manufacturer's recommendations * * *. Using products according to manufacturer's recommendations would result in exposures that are very small (this is minute or trace amounts) and would not pose a physical or health risk to miners.

We received a few comments objecting to the exemption of consumer products from HazCom's labeling requirements. A few commenters suggested that consumer product labels provided by manufacturers may not provide adequate warning, given the use of these products at the mine. One of these commenters stated:

* * * consumer products with warnings on adequate ventilation or that require the use of personal protective equipment cannot be presumed safe for use in the underground mining environment. Further, many mining uses of consumer products may result in exposures that were not contemplated by the manufacturer packaging the product for consumer use. * * * Many consumer products are potential fuel sources for fires (e.g., aerosol solvents or paints). Further, exposure to these volatile solvents may adversely affect the seals and insulators on permissible equipment or adversely alter the explosive characteristics of the atmosphere in underground coal mines.

In response to the concerns expressed by commenters, the interim final rule states specifically that consumer products are exempt from labeling when they are labeled under the standards of another Federal agency, such as the

Consumer Product Safety Commission. Consumer products are exempt from HazCom where you can demonstrate that they are used at the mine in the same manner as in normal consumer use. Because consumer products are labeled under the authority of another Federal agency, and these labels generally provide for the listings of chemical identities and hazard warnings, there is no need for additional labeling standards.

One commenter suggested that we provide operators with a list of exempt products commonly found on mine property. We have determined that a list of exempt products commonly found on mine property is neither simple nor appropriate. These products are only exempt when used in the same way as they would normally be used by a consumer. A list could lead you to believe these were exempt under all circumstances. Some exempt items could be overlooked and some that are exempt from labeling may not be exempt from other provisions of HazCom. Even for exempt products, for example, you may not deface or remove labels from containers of hazardous chemicals brought onto mine property. If they are repackaged or transferred at the mine, you must communicate such labeling information to the miner and, if necessary, label the new container.

The interim final rule also includes an exemption from HazCom's labeling requirements for pesticides labeled under standards issued by other Federal agencies. As long as the pesticide is kept in the original container with its label intact and legible, it is exempt from the labeling provisions of this rule. We believe that this partial exemption informs and protects the miner and does not place an undue burden on you. We intend that all pesticides be labeled with their identity, hazards, and precautions for safe use. We believe that existing labels on containers of pesticides brought onto mine property that meet the labeling requirements of other Federal or State standards will fulfill the labeling requirements of HazCom.

The purpose of pesticide labeling is mainly the protection of workers exposed to the pesticide either while handling it or through inadvertent contact with something that has been treated with it. In the case of the other substances, the purpose of the labels is more general consumer protection. The interim final rule does not include a specific labeling exemption for foods, food additives, and color additives used for personal consumption because they are exempt from the full scope of HazCom. A full discussion of this issue

is in the Exemption section of the preamble.

Other suggested exemptions. Many commenters specifically recommended that we exempt *de minimis* exposures to, or *de minimis* amounts or concentrations of, hazardous chemicals from the labeling requirements. Most of the commenters believed that labeling should focus on serious risks rather than on those that are trivial. Some commenters suggested that we use 5% silica in the mined ore as a *de minimis* threshold below which labeling would not be required. One commenter recommended 1% silica, rather than 5%, for a *de minimis* threshold. Another commenter recommended basing a *de minimis* threshold on a chemical's TLV or PEL. This commenter suggested that employers would simply need to assess whether a hazardous chemical is present in the work area at a level meeting or exceeding its PEL or TLV. Further, this commenter stated that if the chemical did not have a PEL or TLV, no *de minimis* threshold would apply.

We determined that a *de minimis* threshold for silica is inappropriate because respirable crystalline silica is a human carcinogen and the potential for exposure is too great. We discuss this issue more fully in the next section of this preamble (4. Other exemptions discussed in proposal).

Commenters also recommended that we exempt treated wood products from any labeling requirements because labeling every timber in a mine would create an excessive burden on operators with no increase in protection to the miner.

In response to comments, we are exempting from labeling requirements wood and wood products that have been treated with a hazardous chemical and wood which may be sawed or cut, generating dust. Wood and wood products, including lumber, that do not present a health or physical hazard are exempt from the full scope of HazCom as an "article."

4. Other Exemptions Discussed in Proposal

In the preamble to the proposed rule, we requested comments on a variety of options for the scope of the HazCom standard. These alternatives covered exemptions for the size of the mine, the commodity extracted, the work area, or the amount of hazardous substance. For the most part, the interim final rule does not adopt these exemptions for the reasons discussed in the following paragraphs.

Small mines. The rulemaking record contains a number of comments suggesting that we exempt small mines

from HazCom. Commenters stated that HazCom would create additional expenses and recommended that we modify the interim final rule to exempt small operations, especially those with a workforce of 10 or fewer.

We do not exempt small mines from overall compliance with HazCom because chemical hazards are present at all mines, regardless of size, and miners at small operations have the right to know if they are exposed to hazardous chemicals. To address the needs of small mines, however, as well as the variability in the mining industry, the interim final rule allows you to design the HazCom program for the conditions at your mine. To further assist you, and especially small mine operators, we will prepare generic HazCom programs and MSDSs. Many of these aids are available now and the remainder will be available soon. You can contact the National Mine Health and Safety Academy at 304-256-3257 or visit our website at www.msha.gov to find out what is available. Also, OSHA has developed training materials for its industries, such as a generic MSDS form, a model hazard communication program, and the HCS Compliance Guide. Many are available from OSHA's website at www.osha.gov and can be adapted for use at mining operations. You can use these as models for your own program.

Depending on the size of the mine and the number of hazardous chemicals at the mine, you may have little to add to the generic program. We anticipate that, with minimal effort, the majority of small mines will be able to prepare the written program, MSDSs, and labels, and integrate HazCom training into their established training programs.

Common minerals. We considered an exemption from HazCom for certain common minerals (such as coal, sand and gravel aggregates, crushed stone aggregates, and clay) and those minerals containing less than 5% silica and no other hazardous chemicals. In the preamble to the HazCom proposal, we requested comments on—

- The appropriateness of exempting certain minerals;
- The appropriate criteria for making a determination for exemption;
- The degree to which miners are aware of the hazards of these minerals;
- The level of silica in such minerals necessary before the mineral would be considered hazardous;
- How these minerals are used and handled by downstream employers; and
- How we could best publicize and provide hazard information on these substances to you and miners.

A number of commenters addressed the scope of the common minerals

exemption. Some expressed support for the exemption and stated that natural rocks and minerals should not be classified as chemicals for the purpose of an MSDS or other HazCom requirements. Others stated that the exemption for minerals containing less than 5% silica is warranted because these minerals do not constitute a hazard, and the exemption would preclude duplicate regulatory requirements and unnecessary expenditures. One commenter stated that such an exemption is especially appropriate for minerals designated as carcinogenic merely because they contain greater than 0.1% silica. Another commenter stated that labeling common minerals is unnecessary because 30 CFR part 48 (and part 46) requires miners to be trained to recognize the hazards of the product being mined.

Commenters also suggested that we exempt specific minerals from HazCom. For example, one commenter stated that we should exempt coal and limestone. In addition, with regard to exempting coal, other commenters stated that the hazards of respirable coal mine dust are strictly controlled through extensive sampling and monitoring programs. Other commenters recommended that we modify the standard to exempt dimension stone quarries and iron ore pellets. One commenter urged us to specify which minerals are of concern to us and suggested an exemption for silica flour or certain industrial sands based upon their purity and particle size.

Several commenters objected to our proposed exemption of common minerals. One stated that most mining products are used by OSHA-regulated facilities and, as such, OSHA already requires that these facilities keep MSDS forms up-to-date for customers, label containers, and fill out the appropriate transport forms. Another commenter expressed concern that, if operators are responsible for preparing the MSDSs and labels, the common minerals exemption could lead to violations of the OSHA HCS for downstream general industry customers. Others objected to the common minerals exemption because it would send conflicting signals to miners; it is inconsistent with OSHA triggers and MSDS requirements; and it fails to provide health protection for miners in the sand and gravel, stone, clay, and shell dredging operations. One commenter stated that these minerals still present sufficient hazards to require MSDSs and training and HazCom should cover them, even though they are common or silica is present in small proportion to the total material.

Some commenters suggested that we exempt or provide limited coverage to mining industry sectors with a low degree of risk. One suggested specifically that we exempt the brick industry from HazCom because the risk posed to miners in the brick industry is lower than that experienced in other mining operations due to the way the industry handles the clay and shale. According to this commenter, there is no reason to regulate clay and shale, the brick industry's principal raw materials, because HazCom relates to free silica and most clay and shale have $\leq 5\%$ free silica. In addition, this commenter indicated that MSDSs are unnecessary because exposure to silica is a primary part of the training programs administered by brick manufacturers.

We do not agree that the overall degree of risk encountered by miners in a given industry segment is a viable argument for totally exempting an entire mine or commodity from coverage under HazCom. A major concern is that miners are exposed to chemicals without knowing their hazards and, thus, they may not follow the proper procedures for handling or using these chemicals. The extent of risk is not a determining factor in deciding whether or not you have to communicate information on hazardous chemicals. Miners have the right to know that they are being exposed to a potential hazard. As long as the potential for exposure exists in the work area and the chemical is hazardous, HazCom applies.

For these reasons, the interim final rule does not exempt minerals containing 5% silica or less or other hazardous chemicals or certain common minerals, such as coal, clay, and dimension stone. The promulgation of such an exemption would imply that these minerals could not pose a health hazard to exposed miners. On the contrary, depending on the airborne concentration of the dust and other circumstances regarding exposure, respirable crystalline silica in these minerals or respirable coal mine dust may cause pneumoconiosis or cancer. The interim final rule is consistent on this point with OSHA's HCS.

Nonfuel mining. One commenter recommended that we exempt the nonfuel mining industry from HazCom. This commenter questioned whether we have demonstrated that such a broad-based standard is necessary for the nonfuel mining industry, given that HazCom would duplicate our existing training and labeling standards.

Based on the findings of the NIOSH National Occupational Health Survey of Mining (NOHSM) and our experience in the mining industry, we concluded that

a HazCom rule applicable to coal, metal, and nonmetal mines is appropriate because all mines use hazardous chemicals, and there are a number of hazardous chemicals common to all types of mines, including non-fuel mines. Fuel oil, solvents, and paint are just three examples of hazardous chemicals used at non-fuel mines. Non-fuel mines report the most chemical burn injuries to MSHA. HazCom is broadly written and performance oriented in recognition of the diversity among mining operations and independent contractors. Our intent is that all miners, including those working in the nonfuel mining industry, have access to information about the chemical hazards to which they are exposed at the mine. This decision is consistent with the mandate of the Mine Act to protect all miners to the extent feasible.

De minimis requirements. In the HazCom proposed rule, we solicited comments on whether we should establish *de minimis* criteria for hazardous chemical exposure in general. *De minimis* or trivial risks are those below the threshold of regulatory concern.

A few commenters stated that, for HazCom to be effective, the final rule must contain an exemption for *de minimis* chemical exposures. These commenters urged us to specify minimum quantities for the substances covered by the standard. Commenters suggested that we exclude exposures that are less than one-half of any applicable PEL or ACGIH TLV, or where the health risk is not significant. Some felt that HazCom should address only those chemicals that exceed a PEL or ACGIH TLV. One commenter stated that a meaningful *de minimis* provision could be provided—

- By clarifying the definition of article similar to that found in the mixture definition;
- By defining a significant health risk; and
- By stating a reasonable and consistent interpretation of the terms “minute” or “trace.”

A few commenters recommended that we exclude trivial exposures to avoid unnecessary and misleading labeling and the creation of the functional equivalent of a “Delaney Clause.”

[**Note:** The Delaney Clause is an amendment to the Food, Drug, and Cosmetic Act (21 U.S.C. 348). It requires the Food and Drug Administration to prohibit the use of any food additive that is carcinogenic without regard to the quantitative level of risk.]

Commenters wanted us to set a *de minimis* concentration below which you

would not have to consider whether a substance is hazardous. There are highly toxic substances, however, which can cause adverse health effects from the absorption or inhalation of tiny amounts. HazCom is intended to address all hazardous chemicals at mines. The range of hazards and concentrations are too diverse to address through a single measurement. A *de minimis* exemption, therefore, would not provide sufficient protection to miners and would not address the true issue of concern, informing miners of potential hazards.

Likewise, requiring information disclosure only in situations where exposure might exceed a PEL or ACGIH TLV is not consistent with the purpose of the rule. Exposure limits address a limited number of the hazardous chemicals encountered at the mine. Also, PELs are used to control inhalation exposures. Because the definition of exposure in HazCom includes absorption through the stomach or skin, in addition to the lungs, the exposure limits might be unrelated to the total exposure experienced by a miner. In certain circumstances, the most significant route of exposure may be through the stomach or skin. We have received reports of injuries and illnesses among miners as a result of skin contact with cyanide solutions, cement and trona dusts, and mercury, and as a result of ingesting lead litharge.

Laboratories. The proposal requested comments on whether laboratories should be exempt from HazCom, primarily because OSHA’s HCS [29 CFR 1910.1200(b)(3)] partially exempted laboratories. OSHA, however, regulates laboratories under both its HCS (29 CFR 1910.1200) and its laboratory standard (29 CFR 1910.1450). The laboratory standard supplements the HCS.

The OSHA HCS requires labels, MSDSs, training, and access. The heart of the OSHA laboratory standard is the Chemical Hygiene Plan. The Plan, which contains elements similar to HazCom’s written program, must be reviewed annually. It also requires detailed descriptions of personal protective equipment, standard operating procedures, and engineering controls. Whatever OSHA does not cover under its HCS, it covers in its laboratory standard. The OSHA laboratory standard requires training; access to the plan and “all known reference material * * * including, but not limited to, Material Safety Data Sheets * * *; labels and MSDSs; hazard determination for chemicals produced, including by-products; hazard determination, labels, and MSDSs for

chemicals produced for users outside the lab itself; and records of exposure monitoring and medical exams.

Unlike OSHA, we do not have specific standards addressing hazardous chemicals in laboratories. At this time, we do not plan to develop a separate standard to address laboratory hazards.

Several commenters urged us to exempt laboratories. One commenter stated that small laboratories are exempt from OSHA’s standards. Another commenter stated that both OSHA’s HCS and EPA’s SARA exempt laboratories of any size when under the direct supervision of a technically qualified individual. Some commenters supported the application of training requirements to laboratories on mining property unless the lab has trained chemists. Others recommended that we exempt laboratory use of chemicals from HazCom because such use is unique and our training standards already cover laboratory hazards.

Most commenters, however, supported our coverage of laboratories within HazCom. Some commenters found our approach reasonable because covering mine laboratories would preclude the need for us to develop a separate standard to address laboratory hazards, as was done by OSHA.

We agree that laboratories in mining should be subject to the full scope of the standard, including training, with no specific exemptions. Laboratories found in the mining industry differ in several respects from those common to general industry, such as research facilities. Although there may be a few large-scale laboratories in the mining industry supervised by trained chemists, our experience indicates that most mine laboratories are small-scale operations devoted to quality control or process control, with relatively few trained chemists.

Compared to research facilities or laboratories in the chemical manufacturing industry, quality control laboratories in the mining industry use relatively few chemicals and analytical methods. Most of these mine laboratory workers receive on-the-job training. This training can be inadequate in addressing the hazards of the chemicals to which the laboratory workers are exposed. MSHA data, reported under the requirements of 30 CFR part 50, cite illnesses or injuries in laboratories caused by improper mixing of chemicals, mercury spills, use of inadequate or inappropriate personal protective equipment, use of improper procedures, and improper use of controls or inadequate ventilation.

The interim final rule does not exempt laboratories on mine property,

but gives you the latitude to create a training program based upon the hazards identified. We recognize that these programs may differ from work area to work area because of the different chemicals used. We expect your training program to vary depending on the miners' training needs. To exclude miners working in laboratories from HazCom would not be in keeping with our mandate to prevent mine-related occupational injuries and illnesses. After reviewing the comments and the rulemaking record, and based on the presence of hazardous chemicals in the laboratories, we have concluded that it is necessary to include mine laboratories under the scope of the interim final rule.

J. Subpart J—Definitions

HazCom is an information and training standard focused on chemical hazards. Table 47.91 defines the terms needed for understanding the concepts and requirements in the standard. We defined some terms to have a special meaning for this standard, but tried to stay consistent with the ordinary meaning of the terms.

1. Using MSHA and OSHA Terms

We used *employee* in the proposed rule to identify the working person who may be exposed to a hazardous chemical. The proposal included a sentence to clarify that the standard did not apply to individuals, such as office workers, who encounter hazardous chemicals in non-routine instances.

Commenters recommended that we use the term *miner* instead of *employee*. Many commenters pointed out that *miner* is defined in the Mine Act, and that using this term would be consistent with our statute. Because the term *miner*, as defined in the Mine Act, means any individual working in a coal or other mine, including office workers, some suggested that we could add an exemption for office workers in a separate section.

In response to comments, we replaced the term *employee* with the term *miner* throughout the interim final rule, where we thought it was appropriate. The term *miner* does include office workers. We do not intend to exempt office workers from HazCom. The proposal had attempted to clarify that HazCom does not apply to individuals exposed to a hazardous chemical in extraordinary, non-routine situations. We intended this statement in the proposal to complement the scope and emphasize that individuals exposed to a hazardous chemical under normal conditions of use or in a foreseeable emergency, regardless of their job category, are

covered by HazCom. For example, you must ensure that hazardous chemicals normally used in or around an office, such as toner for the copy machine, are labeled appropriately; obtain an MSDS for them, and instruct the exposed office workers about their hazards and safe work procedures. Other Federal agencies regulate hazardous chemicals used in or around an office and, therefore, they should already be labeled and have an MSDS available from the supplier.

We defined *employer* in the proposal as a person engaged in a business where chemicals are either used, distributed, or are produced for use or distribution, including a contractor or subcontractor. We intended the term to describe independent contractors on-site, as well as downstream or OSHA jurisdiction customers. In response to the general comment that we should rely on mining terms, in the interim final rule we use the more familiar designation *operator* to mean both the mine operator and independent contractor as defined in the Mine Act. In the preamble, we often use the term "you" instead of "operator." We use the separate terms *mine operator* and *independent contractor* when we want to differentiate between the mine operator responsible for the whole operation and the contractors and subcontractors who have the responsibilities of an operator for specific aspects of the mining operation. We determined that a definition was not necessary for *customer* because we use the term as it is commonly understood to mean the downstream users who purchase your products.

We defined *workplace* in the proposal to mean a mine, establishment, job site, or project at one geographical location containing one or more work areas. The term *mine* is defined by the Mine Act and, like *miner*, is more familiar to the mining industry. *Mine* means the same thing as *workplace* for purposes of HazCom. Accordingly, we have substituted the term *mine* for *workplace* throughout the interim final rule.

Some commenters suggested that we add definitions for terms not proposed. Several commenters requested that coal mine be defined. The definition for mine in the Mine Act includes coal mines and coal preparation facilities. A number of commenters wanted independent contractor defined. This term is defined and commonly used in other MSHA standards and is well-understood by the mining industry. Separate definitions for these terms are unnecessary.

2. Material Impairment and Significant Risk.

Commenters suggested revising definitions for *exposed*, *hazardous chemical*, and *health hazard*, among others, so the terms would include the concepts of material impairment and significant risk. They suggested deleting the phrase "or potentially subjected" from the definition of *exposed*. (The definition would then read: "Being subjected to a hazardous chemical in the course of employment * * *.") Commenters also objected to the proposal's definition of *hazardous chemical* because it addressed "any chemical, in any quantity, at any time." A health hazard, according to a commenter, should be a health hazard only under conditions of intended use.

If these changes were made in HazCom, the interim final rule would have taken a significant departure from its intended purpose. A fuller discussion of material impairment and significant risk is found under Purpose and Scope in this preamble. We did not change the definitions for *exposed*, *hazardous chemical*, and *health hazard* in HazCom to include the concepts of material impairment or significant risk.

3. § 47.91 Definitions of Terms used in this Part

A number of the terms defined in HazCom are commonly used by chemists, physicists, and health and safety professionals to identify and describe specific types of physical hazards or physical properties of chemicals. In keeping with the plain language initiative, we have defined terms in the clearest way we could, sometimes balancing technical precision with general clarity. We believe this subpart provides you with the information you need to understand what HazCom requires and to comply with it.

Access. The interim final rule, like the proposal, defines *access* as the right to examine and copy records. One commenter wanted this definition to specify that you must provide access without cost to the miner. Another commenter did not want the definition to include the right to copy records. Other commenters suggested that we consolidate the access provisions in a single subpart rather than repeat them for each subpart.

HazCom contains the term *access* principally in the subpart Making HazCom Information Available where, in response to comments and for clarity and ease of use, we consolidate access requirements from several sections of the proposal. Because of the potentially

large amount of detailed, technical HazCom material, particularly MSDSs, we believe that the intent to provide information to miners is best served if miners have the right to a copy of the material. The HazCom material may be too voluminous to understand without an opportunity to review it all thoroughly. The cost for providing free copies is a condition for providing access and not appropriate in a definition.

Article. *Article* was defined in the proposal to clarify that many manufactured products commonly found on mine property are exempt from HazCom. Under the proposal, we defined *article* to mean a manufactured item other than a fluid or a particle that—

- (a) Is formed to a specific shape or design during manufacture;
- (b) Has end-use functions dependent upon its shape or design; and
- (c) Under normal conditions of use, releases no more than very small quantities (that is, minute or trace amounts) of a hazardous chemical, such as the off-gassing of plastic pipes, and does not pose a physical or health risk to employees.

Numerous commenters agreed with the definition in the proposed rule, except for paragraph (c). Commenters claimed that paragraph (c) was unclear about how much of a hazardous chemical released from a manufactured item under normal conditions of use would constitute either very small, minute, trace, or *de minimis* quantities. Commenters also asked that we clarify that *article* means conveyor belts, repair steel, and other equipment and supplies commonly found at mines. To determine when an article is a hazardous chemical, some commenters suggested that the definition include a *de minimis* provision, while other commenters wanted a significant risk provision. One commenter wanted the term “under normal conditions of use” deleted from the definition because it limits the scope of the standard.

Another commenter expressed concern that iron ore pellets would be considered a hazardous chemical under HazCom. Iron ore pellets, like bricks, are manufactured articles. Before they are pellets, however, the iron ore is a raw material which contains respirable crystalline silica. Both the respirable dusts of iron ore and silica are inhalation hazards because they can cause lung damage. When they can pose a hazard to exposed workers, these raw materials are covered by HazCom. As raw material, iron ore is exempt from labeling under HazCom while on mine property. The pellets are exempt from

HazCom when they are formed into articles, provided that they do not release more than insignificant or trace amounts of a hazardous chemical and do not pose a physical or health hazard.

We agree with commenters that the definition created confusion. We believe that the confusion arose because the defined term also included the criteria for exemption, which was contrary to the ordinary understanding of the word. An article is first of all a class of material things. An item manufactured to a shape or design that determines its end-use functions will be an article, in the ordinary sense of the word, whether it gives off trace amounts of a hazardous chemical or larger amounts. The exemption of an article, however, is dependent on how the article is used.

To clarify the standard's intent, we moved proposed paragraph (c) from Definitions to Exemptions to indicate that only articles that give off no more than insignificant or trace amounts of a hazardous chemical, and are neither a physical nor a health hazard, are exempt. The definition in the interim final rule describes manufactured goods, other than a fluid or particle, without regard to the chemical hazard produced. The Exemptions subpart now addresses the distinction between exempt and non-exempt articles. We believe that this change is non-substantive, and clarifies the interim final rule. The interim final rule uses the same language as the proposal except for the movement of the last provision to Exemptions.

To illustrate the intent of the change, suppose you purchase a tire and use it on a haul truck. While on the truck, the tire may give off a trace amount of a hazardous chemical. Under this use, the tire is an article exempt from HazCom. When the tire is worn out and can no longer be safely used on the truck, you may send it to a mine that uses tires to supplement the fuel for a kiln. While burning, the tire gives off significant amounts of hazardous chemicals. The tire is still an article, but no longer exempt from HazCom. The miners working at the other mine's kiln must be trained about the chemical hazards associated with the burning tire.

Chemical. The interim final rule, like the proposal, defines chemical as any element, chemical compound, or mixture of these. One commenter assumed that, for the purposes of HazCom, the definition of chemical could be interpreted broadly to include the byproducts of chemical reactions. Byproducts of chemical reactions are separate chemicals. We intend that you address any byproducts as you address other chemicals you produce. You can

either include the byproducts on the MSDS and label or, if appropriate, develop a separate MSDS and label.

Chemical name. The proposal defined *chemical name* as the scientific designation of a chemical in accordance with the nomenclature system developed by the International Union of Pure and Applied Chemistry (IUPAC) or the Chemical Abstracts Service (CAS) rule of nomenclature, or a name that will clearly identify the chemical for the purpose of conducting a hazard evaluation. A commenter recommended that the definition specify Registry of Toxic Effects of Chemical Substances (RTECS) numbers, as well as CAS numbers. Although RTECS numbers are not as widely accepted as CAS numbers as a means of identifying a specific chemical, they are unique and precise and may be used, as well as IUPAC numbers. HazCom retains the proposed definition for chemical name.

Common name. In the proposal, we defined *common name* as any designation or identification, such as a code name, code number, trade name, brand name, or generic name, used to identify a chemical other than by its chemical name. Commenters generally supported the proposed definition for the term *common name*, which remains the same in the interim final rule. This definition is consistent with the OSHA HCS.

Consumer product; food; food additive; color additive. We used the terms *color additive*, *food additive*, *consumer product*, and *food* in the proposed rule and commenters requested that we define them. One commenter suggested that “EPA's consumer products definition is more practical than MSHA's and achieves the result MSHA intended.” The interim final rule includes a definition for consumer product which is essentially the same as the one in the Consumer Product Safety Act (15 U.S.C. 2051 *et seq.*). We do not define food, food additive, or color additive in the interim final rule. They are common terms and we use them in the sense in which they are normally understood.

Container. As proposed, the interim final rule defines *container* as any bag, barrel, bottle, box, can, cylinder, drum, reaction vessel, storage tank, or the like that contains a hazardous chemical. The definition further states that pipes or piping systems; conveyors; and engines, fuel tanks, or other operating systems or parts on a motor vehicle (such as tires) are not considered to be containers.

One commenter wanted pipes that contain hazardous chemicals to be considered containers. We consider it impractical to label pipes and piping

systems containing hazardous chemicals. In numerous cases, these systems are used for different chemicals at different times, depending upon the needs of the operation. Our training standards require you to train miners about the hazardous chemicals to which they may be exposed in their work area. These are the same chemicals that would be transported in pipes and piping systems. In addition, the training requirements in this interim final rule specifically cover the hazards of chemicals contained in pipes or piping systems in the miners' work areas.

Designated representative. The interim final rule, like the proposal, defines *designated representative* as any individual or organization to whom a miner gives written authority to exercise that miner's right of access to records. A miner's representative, to contrast the two terms, is any individual or organization representing two or more miners.

Many commenters wanted to limit the miner's choice of a designated representative to the duly-selected collective bargaining representative and, if none, a member of a safety and health committee who has been chosen by the miners or an individual miner who has been selected as the walkaround representative by the miners at the same mine. We feel that, by adopting these suggestions, we would restrict a miner's options and that each miner should be allowed to select his or her own designated representative.

The definition of designated representative in the interim final rule does not limit miners to their collective bargaining or miners' representatives. We anticipate that in most instances, the designated representative will be one of those, but it could also be a miner's personal physician, attorney, or other person or organization of the miner's choosing. The interim final rule revises the proposed definition to allow the miner to choose anyone as the designated representative, including a representative of miners under 30 CFR part 40.

Employee; employer. The proposal defined *employee* as any individual working in a mine who may be exposed to a hazardous chemical. Individuals such as office workers who encounter hazardous chemicals in non-routine instances were not covered. We use the term *miner* rather than *employee* in the interim final rule. HazCom, therefore, does not include a definition for *employee*.

The proposal defined *employer* as a person engaged in a business where chemicals are either used, distributed, or are produced for use or distribution,

including a contractor or subcontractor. We use the term *operator* rather than *employer* in the interim final rule. HazCom, therefore, does not include a definition for *employer*.

Exposed. The proposed rule defined *exposed* as being subjected, or potentially subjected, to a hazardous chemical in the course of employment through any route of entry, such as inhalation, ingestion, or skin absorption, during normal operating conditions or in a foreseeable emergency.

A number of commenters wanted the phrase "or potentially subjected" deleted from the definition of *exposed* because it is vague and open to interpretation. Other commenters wanted to modify the definition to read "reasonably foreseeable emergency," and several commenters wanted to delete the entire phrase. Another commenter wanted the term *exposed* to be defined as being subjected, or potentially subjected, to exposure equal to or above the MSHA limit for a hazardous chemical.

Excluding potential exposure to a hazardous chemical, when the chemical does not have an MSHA limit or when the exposure may be below the limit, would circumvent the intent of HazCom. In addition, other MSHA standards address and regulate the miner's exposure to hazardous chemicals. The interim final rule does not incorporate these suggested changes, nor does it retain the phrase "during normal operating conditions or in a foreseeable emergency" in the definition of *exposed*. As with the changes in the definition of *article*, this phrase addressed a condition of use and confused the normal understanding of the term "exposed." The phrase "potentially subjected" covers those situations where the threat of exposure to hazardous chemicals exists. We use the phrase "during normal operating conditions or in a foreseeable emergency" with the term *exposed* in § 47.2 to describe when HazCom applies.

Foreseeable emergency. The proposed rule defined *foreseeable emergency* as any potential occurrence for which you would normally plan, such as equipment failure, rupture or spill of containers, or failure of control equipment, that could result in an uncontrolled release of a hazardous chemical into the work area. Many commenters stated that the phrase "for which operators would normally plan" is vague and open to interpretation and abuse and should be removed from the definition. Several commenters wanted to substitute "reasonably plan" for "normally plan."

The interim final rule retains the definition of *foreseeable emergency* as proposed. We consider an emergency to be foreseeable if we can reasonably expect you to know that it could occur due to the nature of the mining operation. You are already required to prepare for emergencies through a number of our standards (e.g., fire, ventilation, mine rescue, and training, among others). We believe the term *emergency* is well understood in the mining industry. We expect you to make preparations to address the foreseeable emergencies that can be related to chemicals, should they occur.

Hazard warning. The proposed rule defined *hazard warning* as any word, picture, or symbol appearing on a label or other appropriate form of warning that conveys the specific physical and health hazards of the chemical in the container, including target organ effects. (See the definitions for *physical hazard* and *health hazard* for examples of the hazards that must be communicated.)

One commenter suggested that appropriate protective measures should be required as part of hazard warnings. Although giving information about protective measures is a vital part of HazCom, we address this information in the provisions for MSDSs and training. The purpose of the hazard warning in labeling is to convey critical information immediately. We believe that the most critical information for labeling is the name of the chemical and its hazards.

The interim final rule defines *hazard warning* as any words, pictures, symbols, or other forms of warning that convey the specific hazards of the chemical. We removed the text specifically referencing target organ effects or containers from the definition for *hazard warning* in the interim final rule because it was redundant. Labeling requirements in subpart D of HazCom address containers, and the definitions of *health hazard* and *physical hazard* address the effects of hazardous chemicals, including target organs.

Hazardous chemical. In the proposed rule, we defined *hazardous chemical* as any chemical that is a physical hazard or a health hazard. We also defined physical hazard and health hazard.

One commenter suggested that the definition of *hazardous chemical* convey the concept that a chemical be considered hazardous based on whether it exists in a quantity or is used in a manner that could present a reasonable risk of overexposure to a miner. Several other commenters suggested that the definition exempt coal and related raw materials and consumer products. Another commenter wanted hazardous material to be substituted for hazardous

chemical, stating that it would be more readily understood. As an example, this commenter stated that asbestos and gasoline are highly hazardous, yet they are not commonly referred to as chemicals.

If we based the application of HazCom on the quantity of a chemical present, it would allow you to ignore chemicals with known hazards if they are in small quantities. Some hazardous chemicals are not evenly dispersed in a mixture of dusts, liquids, or gases, and pockets of high concentration can pose a hazard even if the quantity is low. For example, if a hazardous chemical settles in layers near the ground, a measurement of it near the breathing zone of the miner may lead to a faulty conclusion that the chemical does not present a reasonable risk of overexposure. We believe that it is far more protective, and necessary to prevent illness, to train miners about the presence of the chemical, signs and symptoms of exposure, safe work practices, precautionary measures, and the need to keep engineering controls in proper working order, rather than argue about what level of risk is reasonable or significant and then wait until there is a reasonable or significant risk to inform the miners about it.

Exemptions of coal, raw materials, and consumer products from the definition of hazardous chemical would, in effect, exempt these substances from HazCom. In conjunction with the definition of chemical in this interim final rule, the definition of hazardous chemical adequately addresses our intent that common hazardous substances, such as gasoline, are to be considered hazardous chemicals.

To be consistent with changes in the definitions of *health hazard* and *physical hazard*, we changed the definition of *hazardous chemical* in the interim final rule to mean any chemical that can present a physical hazard or a health hazard. We included the criteria for determining whether a chemical is hazardous in § 47.11, Identifying hazardous chemicals.

Hazardous substance. The proposal did not define the term *hazardous substance*, but used it in the provisions for exemptions. A number of commenters felt that hazardous substance should be defined because it is used in the rule. We use the term in this standard specifically to exempt hazardous substances regulated by EPA as defined in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 U.S.C. 9601 *et seq.*) and the Federal Hazardous Substance Act (15 U.S.C. 1261 *et seq.*). We do not

define *hazardous substance* in the interim final rule; however, its meaning and use is the same as in the proposal and consistent with OSHA's HCS.

Hazardous waste. Hazardous waste was defined in the proposed rule as any chemical regulated by the Environmental Protection Agency (EPA) as a hazardous waste, as such term is defined by the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976, as amended (42 U.S.C. 6901 *et seq.*). Many commenters wanted hazardous waste re-defined to include only those chemical wastes which, because of their quantity, concentration, or physical, chemical, or infectious characteristics, may result in death or serious illness or pose a substantial hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed. One commenter requested that HazCom include an operational definition for hazardous waste.

We believe that an operational definition of hazardous waste specifically for mining operations would cause confusion for you in complying with other Federal and State standards. Other wastes from the mining operation or brought to the mine that are not regulated by EPA also can contain hazardous chemicals. The primary difference between the hazardous waste regulated by EPA from those unregulated by EPA is the amount of information that you can expect from the supplier. Although HazCom exempts EPA-regulated hazardous wastes from labels and MSDSs, you must instruct miners who can be exposed about their hazards. We are especially concerned that you obtain enough information to instruct miners about those wastes that are brought to mine property, the content and hazards of which may be unknown to you.

The interim final rule uses the same definition of hazardous waste as proposed. We intend that our use of the term hazardous waste be consistent with both OSHA's and EPA's use of this term.

Health hazard. The term *health hazard* is used in the proposal and the interim final rule to describe those chemicals that can present a risk of disease or other harmful health effects to an exposed miner. The proposed rule defined health hazard as "[a] chemical for which acute or chronic health effects may occur in exposed employees." The proposal then listed the types of illness or injury that we consider to be health hazards.

A few commenters wanted health hazard defined (as in OSHA's HCS) as a chemical for which there is

statistically significant evidence of significant risk based on at least one valid study. One commenter stated that much of the information in the definition was overwhelming and that the inclusion of Appendix A and Appendix B as part of the definition was inappropriate and confusing. Some commenters suggested that the final rule reference 30 CFR parts 56, 57, 70, 71, and 75 instead of Appendices A and B.

We agree with the commenters and drafted the definition to be clearer. We also deleted the appendices to eliminate that potential source of confusion. We added for the sake of clarity that there must be statistically significant evidence that the chemical can do harm and described the types of illness and injury in plain language. We believe that the interim final rule clarifies the intent, meaning, and use of the proposed definition.

Health professional. We use the term *health professional* in the subpart on Trade Secrets in addressing two situations: an emergency situation when the trade secret information may be needed to save a life, and a non-emergency situation when the information may be needed, but not immediately. The term in the proposed rule referred to a treating physician or nurse. We received comments that others, such as emergency medical technicians, may need access to this information in an emergency. One commenter essentially asked that "occupational" not be used restrictively to limit *health professional*. Another commenter asked that *health professionals* be licensed individuals. This would eliminate industrial hygienists, for example, who may be board certified, as well as some otherwise qualified nurses and technicians.

Some commenters asked that we include "safety professionals" among those who must be given trade secret information that may otherwise be withheld. They stated that it is necessary to add safety professionals to the definition of *health professional* because many mines do not have industrial hygienists; their safety professionals monitor, review, and make corrective recommendations.

In response to comments, we have defined a new term, *health professional*, in the interim final rule to include a physician, nurse, physician's assistant, emergency medical technician, industrial hygienist, toxicologist, epidemiologist, or other person qualified to provide the medical or occupational health services based on education, training, and experience. This definition is deliberately flexible to

allow you to make decisions that focus on the needs of the miner. The interim final rule does not require that the *health professional* be licensed. We believe that the definition in the interim final rule is restrictive enough to protect trade secret information about the chemical composition of a material, but broad enough to give access to those who need it.

We expect that trade secret chemical information may be needed when a miner is being treated as a result of a chemically-related injury or illness. Only persons involved in treatment, researchers looking into the causes of injuries or illnesses, or the exposed miners or their designated representatives must have access to this critical information when it is necessary. Information appropriate to a safety professional would be available on the MSDS. In any event, a safety professional charged by you with a responsibility for chemical hazard communication should already have access to the chemical information.

Identity; specific chemical identity. The interim final rule retains the proposed definition of identity as a chemical's common or chemical name, which must permit cross-references among the required list of hazardous chemicals, the label, and the MSDS. The proposed rule defined *specific chemical identity* as the chemical name, CAS number, or any other designation that precisely identifies the chemical. One commenter suggested that the definition of *specific chemical identity* duplicate that of *identity*.

For purposes of HazCom, we determined that *specific chemical identity* was an unnecessary term because the interim final rule, as did the proposal, defines the terms *identity*, *chemical name*, and *common name* which duplicate its definition. The proposed rule had defined *chemical name* to include CAS numbers, *common name* to include other designations, and *identity* to include the chemical name and common name. We do not use or define the term *specific chemical identity* in the interim final rule.

Immediate use. The term *immediate use* in the proposal clarified under what conditions it would be appropriate to use an unlabeled, temporary, portable container. In the proposal, *immediate use* meant that the miner who transferred the substance from a labeled container into a temporary, portable, unlabeled container must use it during the same work shift. We removed this term from the Definitions subpart in the interim final rule and, instead, incorporated the proposed definition in the standard.

Label. The proposal defined *label* as "any written, printed, or graphic material, displayed on or affixed to containers of hazardous chemicals." We define *label* in the interim final rule in essentially the same way. For the final HazCom rule, however, we added the phrase "to identify its contents and convey other relevant information" and deleted the phrase "of hazardous chemicals" in an effort to make this definition consistent with the common understanding of this term. A label on a container usually identifies its contents, whether or not it contains a hazardous chemical.

Material safety data sheet (MSDS). We defined *material safety data sheet (MSDS)* in the proposal as written or printed material that an operator prepares in accordance with HazCom's requirements, or which the manufacturer or supplier prepares under OSHA's HCS for hazardous chemicals brought to the mine. One commenter urged us to include an operational definition for MSDS rather than reference HazCom's requirements or OSHA's HCS. An operational definition, without reference to the standards, misses the fact that we intend the MSDS to be an information fact sheet that conforms to the cited regulatory requirements. Although HazCom does not require a specific format, we do encourage you to use an established format for consistency within the mining industry and to be in accord with other industries, your customers. In the interim final rule, we revised the definition of MSDS without changing its requirements by expanding the reference to OSHA standards and by referencing Table 47.42, which contains the requirements for the contents of an MSDS.

Mixture. The interim final rule retains the proposed definition of *mixture* as "any combination of two or more chemicals which is not the result of a chemical reaction." We intend that the definition of mixture be applied broadly to include both solutions of chemicals and combinations of chemical solids. A characteristic of any mixture is that its individual components could be separated by mechanical or physical methods.

One commenter felt that this definition would include those chemical byproducts or impurities in trace amounts that are contained in otherwise pure chemicals and that we should clarify the definition. We intend that you treat pure compounds or elements as individual chemicals, rather than as mixtures, even when they contain small amounts of other chemicals as impurities. This treatment

is similar to our treatment of trace releases from articles and is consistent with OSHA's HCS.

Operator; miner. As discussed above, HazCom uses the mining terms *operator* and *miner* as defined in the Mine Act instead of *employer* and *employee*. The Mine Act defines *operator* as "any owner, lessee, or other person who operates, controls, or supervises a coal or other mine or any independent contractor performing services or construction at such mine," and *miner* as "any individual working in a coal or other mine." Because they are defined in the Mine Act, we do not define these mining terms in HazCom.

We removed the definitions for *employer* and *employee* from the interim final rule. Although not included in the definitions, we use these terms in the context of their ordinary meaning.

Ordinary consumer use. In response to comments, we are defining the phrase *ordinary consumer use*. For the purpose of HazCom, *ordinary consumer use* means:

(1) The product or article is packaged and sold by the manufacturer or retailer for use in or around a residence, a family, or a school; in recreation; or elsewhere for personal use or enjoyment, as opposed to business use.

(2) The miner's exposure is the same as it would be for an ordinary consumer using the product as the manufacturer intended.

To be considered *ordinary consumer use*, the miner could not be exposed to the product at more than the same concentration, frequency, and duration of time than an ordinary consumer would. For example, using an organic solvent that is an ingredient in a hand soap in a washroom would be considered normal consumer use. Using that same solvent as a detergent in a flotation reagent is not.

Pesticide. The term *pesticide* appears in the interim final rule to clarify that *pesticides* are regulated by another Federal agency and are exempt from HazCom. We do not define this term.

Physical hazard. The term *physical hazard* is used in the proposal and the interim final rule to describe those chemicals with properties that can present a risk of injury to a miner. The proposal listed examples of chemical reactions, such as flammability, that are physical hazards. The interim final rule lists the chemical reactions and then further defines each of them: a combustible liquid, a compressed gas, an explosive, a flammable, an organic peroxide, an oxidizer, a pyrophoric, an unstable (reactive), or a water reactive material. As normally used, *physical hazard* means the actual physical effect

that a chemical can cause, rather than the chemical itself. The proposed definition differed from this common meaning. To eliminate possible confusion or ambiguity, the interim final rule defines physical hazard consistent with its common meaning by listing examples of the types of chemical reactions that can cause physical harm to miners.

(1) *Combustible liquid*. We defined *combustible liquid* in the proposal as a liquid with a flashpoint at or above 100°F (100 degrees Fahrenheit) which is 37.8°C (37.8 degrees centigrade). The proposal listed the following three classes of *combustible liquids*:

(a) Class II liquids—those having flashpoints at or above 100°F (37.8°C) and below 140°F (60°C).

(b) Class III A liquids—those having flashpoints at or above 140°F (60°C) and below 200°F (93.4°C).

(c) Class III B liquids—those having flashpoints at or above 200°F (93.4°C).

OSHA's HCS had defined a *combustible liquid* as a liquid having a flashpoint at or above 100°F but below 200°F, except any mixture having components with flashpoints of 200°F or higher, the total volume of which make up 99% or more of the total volume of the mixture. Commenters stated that it would be preferable to have our definition of *combustible liquid* coincide with OSHA's definition, because many facilities are covered by both rules.

We believe that the proposed definition of *combustible liquid* is compatible with OSHA's definition. We had proposed to list the various classes of combustible liquids to match the definition in other MSHA standards. In response to comments, however, the interim final rule does not list these classes of combustible liquids. The interim final rule defines *combustible liquid* as a liquid having a flashpoint at or above 100°F (37.8°C) and below 200°F (93.3°C) or a liquid mixture having components with flashpoints of 200°F (93.3°C) or higher, the total volume of which make up 99% or more of the mixture. The definition in HazCom is the same as in OSHA's HCS.

(2) *Compressed gas*. We defined *compressed gas* to mean a contained gas or mixture of gases with an absolute pressure exceeding 40 psi (pounds per square inch) [276 kPa (kiloPascals)] at 70°F (21.1°C) or 104 psi (276 kPa) at 130°F (54.4°C) regardless of pressure at 70°F. In addition, we consider a liquid to be a compressed gas when its vapor pressure exceeds 40 psi (276 kPa) at 100°F (37.8°C), as determined by ASTM D-323-72. This definition is consistent

with OSHA's HCS and is unchanged in the interim final rule.

One commenter stated that the definition of *compressed gas* includes compressed air in motor vehicle tires and air compressors. Although compressed air meets the definition in HazCom for a compressed gas, an inflated tire is an article and exempt from HazCom. Also, an inflated tire is part of a motor vehicle and, thus, is not a container under HazCom. Neither do we consider compressed air in a tire or compressor to be a hazardous chemical under HazCom. A shop compressor contains compressed, ambient air and, unlike compressed gas cylinders, it is equipped with a safety valve to release excess pressure. We recognize that serious hazards exist when working with inflated tires and compressed air receivers, but we address these hazards in our safety standards. We do not require an MSDS or a label for compressors or compressed air.

(3) *Explosive*. We defined *explosive* in the proposed rule in the same way as it is defined in OSHA's HCS and added a reference to Department of Transportation requirements. There were a number of comments that objected to the use of an incorporation by reference. In response to comments, we eliminated this reference in the interim final rule and rely on the more familiar definition of *explosive* as a chemical that undergoes a rapid chemical change causing a sudden, almost instantaneous release of pressure, gas, and heat when subjected to sudden shock, pressure, or high temperature. We intend this definition to cover the same substances that were covered in the proposal, and we believe the term will be better understood by the mining industry.

(4) *Flammable*. We defined *flammable* in the proposed rule as a chemical that is an aerosol, a gas, a Class I liquid, or a solid that would meet specific criteria relating to its capability to ignite, to burn, and to sustain a flame. The proposal referenced testing methods in 16 CFR and classifications of *explosives* in 49 CFR, but did not include a specific publication date. A commenter requested that we include the dates of publication for references in the definition of *flammable*. This commenter also stated that unless—

* * * operational definitions are included in the rule, it is difficult to understand, and becomes a deterrent to compliance. The mine supervisor should be able to look at the definition and determine if an item such as a conveyor belt is flammable.

As with the term *explosive*, we recognize that the proposed definition

was highly technical and that a simpler, more generally understood definition would better serve the industry. Accordingly, and in response to comments, the interim final rule defines a *flammable* chemical as one that will readily ignite and, when ignited, will burn persistently at ambient temperature and pressure in the normal concentration of oxygen in the air. We intend that this definition include the same chemicals as would have been included under the proposed definition and under OSHA's HCS. We will include the more technical definition in the Compliance Guide for this rule.

We did not define *flashpoint* in the interim final rule. We believe that qualified persons who already know the meaning of the term will be determining a chemical's flashpoint.

(5) *Organic peroxide*. The proposal defined *organic peroxide* as an *explosive*, shock sensitive compound or an oxide that contains a high proportion of oxygen-superoxide. We received no specific comments on this definition. It is unchanged in the interim final rule except for the addition of the word "organic" to the description of the chemical. We intend the definition in HazCom to be essentially the same as in OSHA's HCS. OSHA defined *organic peroxide* as—

* * * an organic compound that contains the bivalent -O-O- structure and which may be considered to be a structural derivative of hydrogen peroxide where one or both of the hydrogen atoms has been replaced by an organic radical.

(6) *Oxidizer*. The proposal defined *oxidizer* as a chemical other than a blasting agent or explosive as classified in 49 CFR 173.53, 173.88, 173.100 or 173.114(a) that initiates or promotes combustion in other materials, thereby causing fire by itself or through the release of oxygen or other gases. This definition is consistent with the definition for *oxidizer* in OSHA's HCS. A commenter objected to our referencing 49 CFR in our definition of this term. In response to comments, we eliminated the reference from the interim final rule. We will include these further explanatory details in the Compliance Guide for HazCom.

(7) *Pyrophoric*. The interim final rule retains the proposed definition of *pyrophoric* with minor editorial changes. This definition is consistent with that in OSHA's HCS.

(8) *Unstable (reactive)*. We defined *unstable (reactive)* in the proposal and interim final rule as a chemical which in the pure state, or as produced or transported, will vigorously polymerize, decompose, condense, or become self-

reactive under conditions of shock, pressure, or temperature. This definition is consistent with OSHA's HCS.

(9) We defined *water-reactive* in the proposal and interim final rule as a chemical that reacts with water to release a gas that is either flammable or a health hazard. This definition is consistent with that in OSHA's HCS.

Produce. We defined *produce* in the proposal as to "manufacture, process, formulate, or repackage." This definition, together with the definition for use, is intentionally broad to include any situation where a hazardous chemical is present in such a way that a miner may be exposed.

We received a few comments supporting the proposed definition and no comments specifically opposing it. Other comments, however, are applicable to this issue. For example, one commenter suggested that we exempt certain mine emissions, such as diesel exhaust and welding fumes, from the MSDS requirements of HazCom. This commenter stated that the composition of these produced chemicals can vary so much that not even "generic MSDSs, created by MSHA as assistance to mine operators, will be very useful." Another commenter on the definition of *chemical* also assumed that it includes the byproducts of mining activities, such as diesel exhausts. This commenter stated that "constituent ingredients in diesel exhaust—nitrogen, carbon, and sulfur oxides, organic vapor, diesel particular matter—would have to be subject of this standard also."

The interim final rule defines *produce* as to "manufacture, process, formulate, generate, or repackage." By adding the term "generate" to the proposed definition, we clarify our intent that HazCom apply to byproducts of mining activities. For example, HazCom would apply to diesel emissions, the inadvertent generation of cyanide in a storage tank, or welding fumes from construction or repair of machinery. As explained under the definition for *chemical*, the byproducts of mining activities may be covered in the MSDS for the initial chemical or separately for the hazardous chemical byproduct itself. Also, you may develop an MSDS for a process if that is more relevant to the chemical hazard. For the most part, solid waste sites and tailings ponds are covered by other MSHA, Federal, or State standards. You already must train miners about these hazards and appropriate safe work practices and protective measures.

Raw material. In the proposal, we defined *raw material* as a mineral, or combination of minerals, that is

extracted from natural deposits by mining or is upgraded through milling. The proposed definition added that the term applied to the ore and valuable minerals extracted, as well as to the worthless material, gangue, or overburden removed during the mining or milling process. One commenter agreed that this definition correctly includes the tailings from crushed stone, and sand and gravel operations. Another commenter wanted to substitute the word "material" for "mineral" in the definition of *raw material*, stating that—

The term "mineral" has different uses in different areas of mining and geology that imply different definitions. The term "material" should be substituted in this definition as a more generic and less restrictive term for "mineral."

The interim final rule does not incorporate this suggestion, but retains the proposed definition of *raw material* with minor editorial changes. Our intent is that *raw material* be limited to minerals.

Trade secret. Like the proposal, the interim final rule defines *trade secret* as any confidential formula, pattern, process, device, information, or compilation of information that is used by the operator to give him or her an opportunity to obtain an advantage over competitors who do not know or use it. This definition is taken from the Restatement of Torts § 757, comment b (1939). HazCom allows you to withhold the *identity* of the chemical declared a trade secret under certain conditions. It requires that you provide the miners with all other pertinent HazCom information, though not process or percentage of mixture information.

One commenter was concerned that *trade secret*, as defined in the proposal, would allow you to arbitrarily restrict access. This commenter also recommended that the final rule include Appendix D from OSHA's HCS, which would reprint the entire Restatement of Torts comment, to guide you in applying the trade secret definition. Another commenter saw extremely limited utility and could find no reason to include this appendix.

We do not believe that this appendix is necessary. As stated in the preamble to the proposal, the Restatement of Torts indicates that there are at least six well-accepted factors in establishing a trade secret claim. Those six factors are—

- (1) The extent to which the information is known outside of the business;
- (2) The extent to which information is known by employees and others involved in the business;

(3) The extent of measures taken by the business to guard the secrecy of the information;

(4) The value of the information to the business and its competitors;

(5) The amount of effort and money expended in developing the information; and

(6) The ease or difficulty with which the information could be properly acquired or duplicated by others.

We believe these principles provide sufficient guidance in determining the legitimacy of a trade secret claim without publishing an appendix. We considered including several of the proposed appendices in the interim final rule. We determined, however, that the overall effect of these additions was to obscure rather than clarify the requirements. Instead, we intend to publish a Compliance Guide, a Toolbox, and other information apart from HazCom to assist the industry in complying.

Use. We defined *use* in the proposal as "to package, handle, react, or transfer." OSHA has defined *use* as "to package, handle, react, emit, extract, generate as a byproduct, or transfer." We did not include the terms "extract, emit, or generate as a byproduct" because we believe they are already covered under the definition for *produce*. The interim final rule is the same as the proposal in this respect. We intend this definition to be broad enough to include any situation where a hazardous chemical is present in such a way that a miner may be exposed.

Work area. We defined work area in the proposal as a room or defined space in a workplace (now a mine) where hazardous chemicals are produced or used and where employees (now miners) are present. The interim final rule changes the definition of *work area* to mean any place in or about a mine where a miner works or a chemical is used or produced to make HazCom's definition more consistent with common understanding and retain its application to the presence of chemicals. The definition is consistent with the intent of the proposal, but clarifies the conditions that must be present for a work area. We were going to use the more familiar term "working place," but it has different meanings for different segments of the mining industry.

Workplace. The proposal defined *workplace* as a mine, establishment, job site, or project at one geographical location containing one or more work areas. HazCom uses the term *mine* instead of *workplace*. Because the interim final rule does not include the

term *workplace*, we removed its definition.

K. Appendices

The proposal contained three appendices. Appendix A, Health Hazard Definition, a mandatory section providing additional details for the proposal's definitions. Appendix B, Information Sources, was a comprehensive advisory list of sources to evaluate the physical hazards of chemicals and their specific health effects. Appendix C, Guidelines for Operator Compliance, provided additional advisory guidance for complying with the HazCom standard. The interim final rule does not include these appendices. We also included a table of Hazard Communication Chemicals, identified in the proposal as Table 1, which was intended to help determine if a chemical was hazardous by listing chemicals from MSHA's health standards, the ACGIH, the NTP, and IARC. Table 1 has been deleted from the interim final rule. Much of this information will be included in a HazCom Toolbox to be published separately from the interim final rule.

IV. Legal Authority and Feasibility

The primary purpose of the Federal Mine Safety and Health Act of 1977 (Mine Act) is to ensure safe and healthful working conditions for the Nation's miners. One means established by Congress to achieve this goal is the authority vested in the Secretary of Labor (Secretary) to set mandatory safety and health standards. The HazCom interim final rule is being promulgated as a mandatory safety and health training and information standard under § 101 and § 115 of the Mine Act.

A. Statutory Requirements

Section 101(a)(6)(A) of the Mine Act applies to all mandatory standards involving toxic materials or harmful physical agents. It requires us to set standards to ensure that a miner will not suffer a material impairment of health or functional capacity as a result of exposure to the hazard, even if the miner is exposed for his or her working life. We must also consider the latest scientific data in the field, feasibility of the standard, and experience gained under this and other health and safety laws.

Material impairment. Section 101(a)(6)(A) of the Mine Act and § 6(b)(5) of the Occupational Safety and Health Act (OSH Act) contain similar statutory language. Both statutory sections contain provisions indicating that mandatory standards must be

designed to prevent "material impairment of health or functional capacity * * *"

The Supreme Court has indicated, in discussing significant risk of material impairment of health in the context of litigation under § 6(b)(5) of the OSH Act, that the significant risk determination constitutes a finding that, absent the change in practices mandated by the standard, the workplaces in question would be "unsafe" in the sense that workers would be threatened with a significant risk of harm. [*Industrial Union Dept. v. American Petroleum Institute*, 448 U.S. 607, 642 (1980) (Benzene)]. This finding, however, does not require mathematical precision or anything approaching scientific certainty if the "best available evidence" does not warrant that degree of proof. [Id. at 655–656]. Rather, the agency may base its findings largely on policy considerations and has considerable leeway with the kinds of assumptions it applies in interpreting the supporting data. [Id. at 656].

Feasibility. The Mine Act and the OSH Act also have similar statutory requirements regarding "feasibility." While § 6(b)(5) of the OSH Act requires that standards assure, "to the extent feasible, * * * that no employee will suffer material impairment of health or functional capacity," § 101(a)(6)(A) of the Mine Act requires us to consider "the feasibility of the standard * * *." In addition, the legislative history of the Mine Act specifically cites feasibility cases decided under the OSH Act and strongly suggests that "feasibility" principles applicable to OSHA standards are also applicable to MSHA standards. [S. Rep. No. 95–181, 95th Cong., 1st Sess. 21 (1977)]. The legislative history of the Mine Act also states that:

In adopting the language of [this section], the Committee wishes to emphasize that it rejects the view that cost benefit ratios alone may be the basis for depriving miners of the health protection which the law was intended to insure. Id.

Though the Mine Act and its legislative history are not specific in defining feasibility, the Supreme Court clarified its meaning in *American Textile Manufacturers' Institute v. Donovan* [452 U.S. 490, 508–509 (1981) (Cotton Dust)]. In that case, the Court defines the word "feasible" as "capable of being done, executed, or affected." The Court stated, however, that a standard would not be considered economically feasible if it threatened an entire industry's competitive structure. In promulgating standards, agencies do not have to rely on hard and precise

predictions regarding feasibility. We need only base our projections on reasonable inferences drawn from existing facts. Thus, to establish the economic and technological feasibility of a new rule, we must assess the likely range of costs that it will impose on mines, and show that a reasonable probability exists that a typical mine will be able to meet the standard.

Also, the 11th Circuit, in *National Mining Association v. Secretary of Labor* [153 F.3d 1264 (1998) (single sample)], has stated that we are required to comply not only with the procedural provisions of § 101 of the Mine Act when developing, promulgating, and modifying mandatory safety and health standards, but with all provisions of that section, including showings of feasibility, best available evidence, latest available scientific data, and experience. Accordingly, when developing, promulgating, and modifying mandatory standards, we must enact the most protective standard possible to eliminate a significant risk of material health impairment, subject to the constraints of technological and economic feasibility.

Also, § 101(a)(7) requires that any health or safety standard promulgated under the authority of § 101(a) of the Mine Act must—

* * * prescribe the use of labels or other appropriate forms of warning as are necessary to insure that miners are apprised [sic] of all hazards to which they are exposed, relevant symptoms and appropriate emergency treatment, and proper conditions and precautions of safe use or exposure.

These requirements provide basic protections for workers in the absence of specific permissible exposure limits.

B. Finding of Significant Risk

We have determined that hazardous chemicals are found in all mining environments and that many operators and miners are not sufficiently aware of the presence of these hazardous chemicals nor the nature of the hazards. Also, we have determined that this lack of knowledge increases a miner's risk of suffering a chemically-related occupational illness or injury, because precautions and appropriate protective measures are used only when the presence of a chemical hazard is known. Communicating this information to miners is intended to reduce the incidence of chemically-related occupational illnesses and injuries in the mining industry by changing the workplace behavior of miners and mine operators to reduce the risk of harmful exposures.

The provisions of this interim final rule—hazard evaluations, written

HazCom programs, labels and other forms of warning, MSDSs, and miner training—are directed not only at the identification of hazardous chemicals at the mine, but more significantly at the mitigation of their hazards. The probability of harm will decrease largely as a result of operators' and miners' increased awareness of the hazardous nature of the chemicals and the protective measures to avoid harmful exposures. Increased care and use of protective measures when working around hazardous chemicals will reduce the incidence of chemically-related illnesses and injuries at mines.

The information provided under this interim final rule also will enable health and safety professionals to provide better services to exposed miners. The ready availability of health and safety information, such as signs and symptoms of exposure, will aid medical surveillance and the early detection and treatment of problems. It also will help you make better decisions regarding exposure monitoring, process or exposure controls, and appropriate personal protective equipment. Because our rulemaking record clearly indicates that inadequate communication about serious chemical hazards endangers miners, and that the requirements of this standard are necessary and appropriate for the elimination or mitigation of these hazards, we are able to make the threshold "significant risk" determination.

Several commenters indirectly suggested that we needed to find significant risk for each chemical covered and for each exposure situation. We address these comments in more detail in our discussion of § 47.2, Operators and chemicals covered. It is clear from relevant court decisions involving OSHA's HCS, however, that a specific finding of significant risk is not required for a standard such as this, where the significant risk being regulated is that of inadequate knowledge.

In *Associated Builders & Contractors v. Brock* [862 F.2d 63 (1988)], industry confronted the 3rd Circuit Court with a similar argument involving the OSHA HCS and OSHA's general finding of significant risk. Industry argued that the standard was invalid because OSHA had promulgated it without a significant risk determination. Industry also claimed that OSHA needed to find significant risk for each chemical covered and for each industry covered. The court disagreed with industry and ruled that the general significant risk finding for the original 1983 rule was appropriate for the entire manufacturing sector, and that it was also applicable to

each of the 20 major Standard Industrial Classification (SIC) Code manufacturing subdivisions [Id. at 67].

The court also stated that OSHA was not required to determine significant risk for each chemical covered under the rule because the rule was not a substance based rule, but an information disclosure standard. The court concluded that—

* * * there is no more obvious need for industry specific significant risk determinations for the (non-manufacturing) industries than for subdivisions of the manufacturing sector. [Id. at 67–68]

Specifically, the court held that:

* * * for this performance-oriented information disclosure standard covering thousands of chemical substances used in numerous industries, the significant risk requirement must of necessity be satisfied by a general finding concerning all potentially covered industries. A requirement that the Secretary assess risk to workers and the need for disclosure with respect to each substance in each industry would effectively cripple OSHA's performance of the duty imposed on it by 29 U.S.C. 655(b)(5); a duty to protect all employees, to the maximum extent feasible. [Id. at 68]

OSHA was not required to assess individually the significant risk that would be alleviated by the HCS's application to each of the seventy major business classifications, much less for each of the hazardous substances used in those industries. In addition, OSHA's application of the 1983 general finding of significant risk to the construction and grain processing and storage industries was upheld by the 5th Circuit in *National Grain and Feed Association v. OSHA* [866 F.2d 717 (1989)](petition for review of OSHA's modified HCS as it applied to the construction and grain processing and storage industries)].

Because our HazCom rule was modeled on OSHA's HCS, and the Mine Act and OSH Act are similar with respect to the regulatory requirements for the promulgation of mandatory safety and health standards, we believe that we have satisfied our statutory threshold of significant risk with our general finding of risk presented in this section. We conclude that neither the record evidence nor policy considerations support the argument that we should apply HazCom only where chemical exposures pose known significant risks. We find that the risk of harm to miners will increase if operators allow a condition or situation to develop that poses a significant risk of harm to miners before providing the potentially exposed miners with chemical hazard information.

In addition, in light of § 101(a)(7) of the Mine Act which requires us to

“insure that miners are apprised [sic] of all hazards to which they are exposed,” you must inform miners about all hazards before the miner could be exposed to them. Linking the application of HazCom to a risk level is contrary to the standard's purpose—to change operator and miner behavior before an illness or injury occurs by preventing exposure.

Likewise, requiring information disclosure only in situations where exposure might exceed a PEL or ACGIH TLV is not consistent with the purpose of the rule. HazCom is intended to address all hazardous chemicals at mines. The range of hazards and concentrations are too diverse to address through a single measurement. Also, some chemicals are highly hazardous even in small amounts or low concentrations. A *de minimis* exemption, therefore, would not provide sufficient protection to miners and would not address the true issue of concern—informing miners of potential hazards. Exposure limits address a limited number of the hazardous chemicals encountered at the mine. Also, PELs are used to control inhalation exposures. Because the definition of exposure in HazCom includes absorption through the stomach or skin, in addition to the lungs, the exposure limits might be unrelated to the total exposure experienced by a miner. In certain circumstances, the most significant route of exposure may be through the stomach or skin.

These HazCom requirements are both necessary and appropriate to protect miners, even when we have not determined that the level of risk from a particular chemical exposure warrants a substance-specific standard that would require more complex and costly types of controls. We conclude that operators must obtain information for all hazardous chemicals to which miners can be exposed and provide it to miners, regardless of any judgments about possible levels of risk.

C. Finding of Feasibility

Only one commenter claimed that a provision was infeasible, stating that those working in isolated workplaces could not have immediate access to MSDSs. The interim final rule allows MSDSs to be kept in a central location, as well as electronic access.

The record contains substantial evidence of feasibility. We conclude that these administrative requirements can be merged economically into present practices. The performance-oriented, informational provisions of HazCom are capable of being done and

will not threaten the viability or long-term profitability of the mining industry.

This standard does not relate to activities on the frontiers of scientific knowledge. The informational requirements contained in this interim final rule are not the sorts of obligations that approach the limits of feasibility. There are no technological barriers preventing implementation of the HazCom requirements because most of these requirements are accepted, common business practices that are administrative in nature.

As estimated in our Regulatory Economic Analysis (REA) supporting this HazCom interim final rule, the mining industry will incur costs of about \$5.7 million annually to comply with the interim final rule. These compliance costs represent much less than 1% (about 0.01%) of mining industry annual revenues of \$59.7 billion and provide convincing evidence that the interim final rule is economically feasible.

1. Compliance Burden

We intend a number of factors to reduce the compliance burden associated with MSHA's HazCom interim final rule. The rule is closely modeled on OSHA's HCS and informational materials, training aids, and model training programs, developed and made widely available by both OSHA and commercial sources, will help mine operators comply. We are developing a HazCom Toolbox, designed particularly for small mine operators, that will provide MSDSs, labels, and formal programs for ease-of-use and ready adaptability. We will focus state grants on including HazCom training and informational materials, and will have trainers and videos available. Although we do not intend to conduct HazCom training for the mining industry, we will provide information and assistance to trainers through our Mine Health and Safety Academy, Educational Field Services, and the MSHA district offices.

Finally, we have simplified the language of the rule to make it easier to understand and, thus, easier to comply with.

2. Flexibility of Program

We wrote or revised the major provisions of the HazCom rule to provide the most flexibility possible that also ensured an enforceable interim final rule.

List of chemicals. Mine operators can compile the list for the mine or individual work areas. We did not specify a format or chemical

identification system, which will allow operators great latitude in how they identify their chemicals.

Hazard determination. We did not specify the format and criteria for establishing hazard determination procedures. Operators have considerable discretion in how they conduct the determination, so long as others can understand how they made their determinations.

Exchanging information. We used performance language rather than specification language in requiring operators to establish a way to exchange information with other operators on-site.

Labels. The label requirements in the interim final rule are performance-oriented, flexible, and consistent with the proposal and OSHA's HCS. Therefore, labels that comply with OSHA's HCS will comply with HazCom. The interim final rule does not require operators to label for downstream users; re-label containers of hazardous materials that are labeled in accordance with other Federal standards; update labels that they did not prepare; nor label chemicals in a particular format. They may substitute various types of standard operating procedures, process sheets, batch tickets, blend tickets, and similar written materials for container labels on stationary process equipment. The interim final rule is deliberately flexible to allow for the adoption of an international system for classifying and displaying hazard information, when it becomes available. We are not requiring that operators label raw materials at a mine.

Training. Relevant training that meets OSHA's HCS will comply with HazCom. Operators can combine HazCom training with pre-existing requirements under parts 46 and 48. We delayed the HazCom rule's effective date until 1 year from its date of publication in the **Federal Register** to allow operators the flexibility to include HazCom training in their annual refresher training under parts 46 and 48. Operators can use instructors already on staff qualified under parts 46 and 48.

MSDS. We did not require that MSDSs be in a particular format, only requiring certain basic information. Operators must only provide an MSDS for a mine product upon request. We are also allowing the MSDS to be in an electronic medium.

Hazardous waste. Operators are not required to have an MSDS for hazardous waste although they must make any relevant information available to the miner.

D. Petitions for Modification

Our classification of HazCom as both a safety and a health standard impacts whether operators or representative of miners can petition us for a modification. Under § 101(c) of the Mine Act, operators or representatives of miners may petition us to modify the application of a mandatory safety standard, but not a health standard. Because the HazCom standard is being promulgated as both a health and safety standard, operators may not petition us for a modification. To allow as much compliance flexibility as possible, the final HazCom requirements are performance oriented. We cannot envision any equally protective alternatives that HazCom does not already allow.

V. The Regulatory Flexibility Act, the Small Business Regulatory Enforcement Fairness Act, and Executive Order 12866

The Regulatory Flexibility Act (RFA) requires a regulatory agency to evaluate each proposed and final rule and to consider alternatives so as to minimize the rule's impact on small entities (businesses and local governments). Under the RFA, we must use the Small Business Administration's (SBA) definition of a small entity in determining a rule's economic impact unless, after consultation with SBA, we establish a different definition.

In the preamble to our HazCom proposal, we certified that this rule would not have a significant economic impact on a substantial number of small mining operations. The preamble also included a full discussion of the regulatory alternatives that we were considering and invited the public to comment.

In 1996, Congress enacted the Small Business Regulatory Enforcement Fairness Act (SBREFA) amending the RFA. SBREFA requires a regulatory agency to include in the preamble to a rule the factual basis for that agency's certification that the rule has no significant impact on a substantial number of small entities. The agency then must publish the factual basis in the **Federal Register**, followed by an opportunity for public comment. Although SBREFA did not exist when we published the HazCom proposal, we published a notice reopening the record in March 1999, to give you an opportunity to comment on the factual basis for our previous certification that the HazCom proposal would pose "no significant impact."

This rule has been drafted and reviewed in accordance with Executive

Order (E.O.) 12866, § 1(b), Principles of Regulation. E.O. 12866 requires a regulatory agency to assess both the costs and benefits of proposed and final rules and to complete a Regulatory Economic Analysis (REA) for any rule having major economic consequences for the national economy, an individual industry, a geographic region, or a level of government. We prepared a REA and Regulatory Flexibility Certification Statement to fulfill the requirements of the RFA and E.O. 12866. Based on our REA, we determined that this interim final rule is not an economically significant regulatory action pursuant to § 3(f)(1) of E.O. 12866. Because it affects all mining operations, almost all of which are small businesses using SBA's definition of a small business, we determined that this interim final rule is significant under § 3(f)(4) of E.O. 12866. This section defines a significant regulatory action as one that may—

* * * Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in this Executive Order.

The REA is available on request from MSHA, Office of Standards, Regulations, and Variances, 4015 Wilson Boulevard, Arlington, VA 22203 or from our Internet Home Page at www.msha.gov.

A. Alternatives Considered

In accordance with § 604 of the RFA, we are including a discussion of the regulatory alternatives considered in developing this interim final rule. We used OSHA's HCS as a model for the proposed rule. For the interim final rule, we also considered suggestions from commenters to the proposal. In part, the limited impact of the interim final rule on small mines reflects our decision not to require more costly alternatives. Most of the alternatives addressed the scope of the standard—what would be covered and what would be exempt. The interim final rule did not adopt any alternatives that were not discussed in the proposal. In response to comments, we did adopt several provisions that differ from the proposal or OSHA's HCS.

1. The proposal would have exempted hazardous waste regulated by EPA under the Resource Conservation and Recovery Act from both the labeling and MSDS provisions of HazCom. The

interim final rule does not exempt hazardous waste regulated by EPA from labeling and MSDSs. We determined that such an exemption would put miners at risk of a potential injury or illness.

2. As proposed, the interim final rule exempts the raw material being mined or milled from labeling while on mine property.

3. The proposed rule exempted from HazCom's labeling requirements certain hazardous substances regulated and labeled under the authority and standards of other Federal agencies. These hazardous substances include cosmetics, drugs, tobacco products, foods, food additives, and color additives which are labeled in accordance with the requirements of the Food and Drug Administration or the Department of Agriculture. The interim final rule extends these exemptions to the full scope of the rule rather than to labeling only.

4. To be consistent with OSHA's HCS, we included exemptions from labeling for hazardous substances that EPA or other Federal agencies require to be labeled for hazards.

5. The proposal would have allowed you to not label temporary, portable containers of a hazardous chemical that was to be used only by the miner who transferred it from its labeled container. The interim final rule allows other miners to use the hazardous chemical from the unlabeled container if you ensure that all miners know the chemical's identity, its hazards, and protective measures; and that you ensure the container is left empty at the end of the shift.

6. In the proposal, we would have required you to label containers of your hazardous product or provide a copy of the labeling information with the first shipment to an employer. The interim final rule does not require you to label your hazardous product for sale to customers who are employers. Rather, we require you to provide the label or labeling information and an MSDS when requested.

7. The interim final rule allows you to credit relevant training provided for compliance with other MSHA standards or OSHA's HCS to meet HazCom's training requirements and we require training records.

B. Consultation With SBA

The RFA requires regulatory agencies to consult with SBA's Chief Counsel for Advocacy about regulations that have an impact on small entities. The RFA also requires us to use SBA's definition of a small entity in determining a rule's economic impact. To comply with this law, we consulted with SBA about this rule and our certification of no significant economic impact on small mines. For the mining industry, SBA defines "small" as a business with 500 or fewer employees (13 CFR 121.201). Almost all of the coal and M/NM mines fall into this category. To establish an alternative definition for the mining industry, after consultation with SBA, we must publish that definition in the **Federal Register** providing an opportunity for public notice and comment.

Traditionally, for regulatory purposes over the past 20 years, we have considered a mine "small" if it employs fewer than 20 miners and "large" if it employs 20 or more. These small mines differ from larger mines not only in the number of employees, but also, among other things, in economies of scale in material produced, in the type and amount of production equipment, and in supply inventory. Their costs of complying with the interim final rule and the impact of the interim final rule on them will also differ. It is for this reason that "small mines," as traditionally defined by the mining community, are of special concern to us.

For purposes of the REA and to comply with the RFA, we analyzed the impact of the interim final rule on mines using SBA's definition of "small," as well as our traditional definition.

C. Compliance Costs

We estimate that the total net yearly cost of the final HazCom rule (30 CFR part 47) will be about \$5.7 million. Table 4 summarizes our estimate of the yearly costs by mine size and by major provision. These costs reflect first year (one-time, start-up) costs of \$15 million and annually recurring costs of \$4.7 million. HazCom will affect all coal and M/NM mines; some only insignificantly.

TABLE 4.—YEARLY COSTS FOR HAZCOM INTERIM FINAL RULE BY PROVISION, COMMODITY, AND MINE SIZE *

Mine size	Provision					Total
	Written program	Labels	MSDSs	HazCom training	Access	
Coal Mines and Independent Contractors						
<20	\$375,300	\$15,700	\$134,400	\$284,300	\$137,500	\$947,300
≥20	258,500	6,231	84,900	261,000	132,200	742,800
M/NM Mines and Independent Contractors (M/NM)						
<20	1,062,900	31,800	450,700	963,000	486,100	2,994,400
≥20	244,300	9,200	94,700	352,900	309,100	1,010,100
All Mining	1,941,000	63,000	764,600	1,861,100	1,064,900	5,694,600

* Values are rounded.

D. Regulatory Flexibility Certification and Factual Basis

Based on our analysis of costs and benefits in the REA, we certify that this HazCom interim final rule will not have a significant economic impact on a substantial number of small mining entities using either SBA's or our traditional definition of "small."

1. Derivation of Costs and Revenues

In this interim final rule, both coal and M/NM mines must absorb compliance costs. We examined the relationship between costs and revenues for the coal and M/NM mine sectors as two independent entities, rather than combining them into one category. All cost estimates in this chapter are presented in 1998 dollars.

For this interim final rule, we estimated the one-time costs, annualized costs (one-time costs amortized over a specific number of years), and annual costs. One-time costs are those that are incurred once and do not recur. For example, the cost to develop a written procedural program occurs only once. For the purpose of this REA, we amortized one-time costs over an infinite life resulting in an annualized cost equal to 7% of the one-time cost. Converting one-time costs to annualized costs allows us to add them to annual costs in order to compute a combined yearly cost for the rule. Annual costs are those that normally recur annually. Three examples of annual costs are maintenance costs, operating expenses, and recordkeeping costs.

Commenters to the recent request for information on the economic impact of HazCom on small mines expressed their belief that we underestimated the costs. Commenters stated that costs for gathering MSDSs and keeping them updated could cost thousands of dollars per year; that we had not included a

cost for lost production; that operators could not train miners or label containers for the \$10 per miner that we estimated as the cost of the rule; and that the wage rates were two to three times too low because consultants, not mine employees, would be conducting the hazard evaluation.

We believe that the cost estimates in the final REA, \$5.7 million affecting about 193,000 miners or about \$30 per miner, represent a reasonable approximation of the burden on operators for the following reasons.

First, we have existing standards for training. We did not calculate a cost for miners to attend training or for lost production because the HazCom training can be accomplished during annual refresher training or task training, both of which require operators to cover health and safety hazards. Our recent final training rules, both the new part 46 and the modified part 48, give operators more flexibility in developing training courses to meet the changing needs of the miners and the changing hazards of the mine environment. For example, these training standards allow the operator to adjust the amount of time spent on each topic. This, in turn, allows the operator to spend more of the training time on mine-specific, task-specific, or new information, tailored to their assessment of the miners' training needs. Operators can credit relevant training already provided to comply with HazCom training requirements. In addition, we delayed the effective date of the rule for one year to give operators the time needed to incorporate the HazCom training into their mines' training cycles. Training costs for HazCom include the time to develop a HazCom training course, time for the instructor to prepare the lesson, the cost for training materials, and the time for making a record of the training.

Second, we have existing standards for labeling. We calculated only a small cost for labels because most hazardous chemicals are already labeled by the manufacturer or supplier before they are brought to the mine, our existing standards require hazardous materials to be labeled, and HazCom exempts the raw materials being mined or milled from labeling. The small cost is for labeling storage tanks of bulk hazardous materials and portable transport containers, as necessary, and for replacing damaged or missing labels.

Third, OSHA's HCS has had widespread impact on State right-to-know regulations and, indirectly, on the mining industry. All operators already comply with some of the provisions of this interim final rule (at least labeling and training). Some comply with most or all of the provisions because of existing Federal, State, or local regulations; voluntarily because of corporate policy; or because they work in industries under OSHA jurisdiction, as well as in the mining industry.

Finally, we are developing compliance aids to reduce the burden on operators, especially small operators. These include generic HazCom programs, MSDSs for common minerals and common hazardous chemicals at mines, generic training programs, training materials, and videos (some to help the operator develop a HazCom program and some to use in training the miner). We will also provide training and compliance assistance through state grants, MSHA health specialists, and our Educational Field Services so that you can understand the rule and comply yourself. The benefit we see is that if you develop your program yourself to meet the unique needs of your operation, you will be better prepared to maintain it. HazCom's effective date is one year after the publication of the rule. During this period, we will make

every effort to help the industry gain compliance before HazCom goes into effect.

Because of our commitment to help the mining industry, especially small operators, implement a HazCom program with minimum burden, we do not anticipate a need for them to hire consultants. We anticipate that the vast majority of hazard determinations will be made by reading the MSDS and label and acting accordingly. We assumed in our calculation of wage rates that mine employees will conduct the hazard determination rather than consultants and this is appropriate for the industry.

In determining revenues for coal mines, we multiplied mine production data (in tons) by the estimated price per ton of the commodity (\$17.58 per ton in 1998). We obtained production data from our CM441 reports⁶ and the price estimates from the Department of Energy.⁷ Because we do not collect data on M/NM mine production, we took the total revenue generated by the M/NM industry (\$40 billion)⁸ and divided it by the total number of employee hours to arrive at the average revenue per hour of employee production (\$104.86). We then took the \$104.86 and multiplied it by the employee hours in specific size categories to arrive at the estimated revenues for the size category.

2. Factual Basis for Certification

Whether or not compliance costs impose a "significant" impact on small entities depends on their effect on the profits, market share, and financial viability of small mines. To address these issues, we had to determine

whether compliance with HazCom will place small mines at a significant competitive disadvantage relative to large mines or impose a significant cost burden on small mines.

The first step in this determination is to establish whether the compliance costs impose a significant burden on small mines in absolute terms. For this purpose, we began with a "screening" analysis of compliance costs relative to revenues for small mines. When estimated compliance costs are less than 1% of estimated revenues, we conclude that there is no significant impact on a substantial number of small entities. When estimated compliance costs approach or exceed 1% of revenue, we conclude that further analysis is needed.

The second step in this determination is to establish whether compliance with HazCom will impose substantial capital or first-year, start-up costs on small mines. Because financing is typically more difficult or more expensive to obtain for small mines than for large mines, initial costs may impose a greater burden on small mines than on large mines. HazCom, however, does not require engineering controls or other items requiring a substantial initial capital expenditure. The initial costs associated with HazCom are those necessary to develop and implement a HazCom program. Because this cost is well below 1% of revenues, we do not consider it to be significant.

The third step in this determination is to establish whether there are significant economies of scale in compliance that place small mines at a competitive

disadvantage relative to large mines. We investigated economies of scale by calculating whether compliance costs are proportional to mine employment. Although the annual compliance cost per miner is greater for small operations than for large, this difference is unlikely to provide strategic leverage because small mines generate over 95% of the revenues in their respective markets. Furthermore, total compliance costs will be greater, on average, for a large mine than for a small mine.

3. Results of Screening Analysis

In all cases, the cost of complying with the interim final rule is well below 1% of revenues.

- For coal mines with fewer than 20 miners, the estimated average yearly cost of HazCom is \$190 per operation, which is about 0.14% of the average annual revenue per operation.
- For coal mines with 500 or fewer miners, the estimated average yearly cost is \$270 per operation, which is about 0.01% of the average annual revenue per operation.
- For M/NM mines with fewer than 20 miners, the estimated average yearly cost of HazCom is \$230 per operation, which is about 0.02% of the average annual revenue per operation.
- For M/NM mines with 500 or fewer miners, the estimated average yearly cost is \$270 per operation, which is less than 0.01% of the average annual revenue per operation. As shown in Table 5, compliance costs represent only about 0.01% of the value of mine production.

TABLE 5.—COMPLIANCE COSTS COMPARED TO REVENUE *

	Small mines (1-500)	Average cost per mine	Total yearly cost (millions)	Total revenue (millions)	Cost as % of revenue
Coal		\$270	\$1.69	\$18,252	0.009
M/NM		269	4.00	35,137	0.011

* Includes independent contractors and their employees.

Because the cost of HazCom as a percentage of revenue is considerably less than 1%, we believe that this result, in conjunction with the previous analysis, provides a reasonable basis for the certification of "no significant impact" in this case.

E. Benefits

In considering a HazCom standard, we reviewed chemically-related injuries and illnesses reported to MSHA

between January 1983 and June 1999. During this period, the mining industry reported almost 4,700 chemical burns crossing 57 commodities and 70 job classifications and involving exposures to chemicals at all sizes and types of mines. This same accident and injury data indicated more than 800 poisonings, 2,600 eye injuries, and 2,100 cases of dermatitis or skin injury as a result of chemical exposures. These data only account for the acute effects

of chemical hazards, not the chronic effects which we know exist.

We conclude that miners face a significant risk from exposure to hazardous chemicals. We further conclude that compliance with this rule will prevent a substantial number of acute illnesses, injuries, and fatalities, as well as long term cancer cases.

HazCom is an important means of ensuring that both operators and miners are aware of the chemical hazards to

⁶ MSHA's 1998 CM441 Report, cycle 1998/198.

⁷ U.S. Department of Energy, Energy Information Administration, *Annual Energy Review 1998*, July 1999, p. 203.

⁸ U.S. Department of the Interior, U.S. Geological Survey, January 1999, pp. 3 and 6.

which they may be exposed at the mine. We anticipate that our HazCom standard will enhance both operator and miner awareness of the safety and health hazards associated with hazardous chemical substances in such a way that both parties will take positive steps to lower exposures, resulting in lower incidence of chemically-related injuries and illnesses. Also, if the miner and operator know the potential health effects from exposure to a chemical, they can forewarn their doctor to watch for signs and symptoms of exposure and further reduce the risk of injury by obtaining early diagnosis and treatment.

Based on our review and analysis of the available data, we estimate that compliance with this rule will prevent one fatality every four years, beginning when the rule takes effect, as well as an annual average of 57 chemically-related acute injuries and illnesses (15 in coal mines and 42 in M/NM mines). Of these 57 injuries and illnesses, 32 will result in 386 lost workdays and 25 will not require lost workdays.

In addition, we expect that HazCom will prevent 76 cancer deaths (51 in coal and 25 in M/NM) from year 11 through year 20 after promulgation and 13.8 cancer deaths every year thereafter.

VI. Other Regulatory Considerations

We recognize that the mining industry has changed since 1990 when we developed the Preliminary Regulatory Impact Analysis (PRIA) and published the HazCom proposal. Most of the changes, however, decreased the impact of HazCom on the mining industry. For example, the number of mines and miners has decreased while the number of independent contractors has increased. Independent contractors are more likely than mines to have an existing hazard communication program because they are more likely to work in operations under OSHA jurisdiction, as well as in mines under MSHA jurisdiction. Similarly, more mines have a hazard communication program now than in 1990 because the parent company also has operations in industries subject to OSHA's HCS, or the mine is located in a State with a State right-to-know law that covers mining. We believe that these existing programs decrease the economic impact of HazCom on the mining industry.

Another change that affects the hazard communication environment is increased public awareness due to the length of time that the OSHA HCS has been in effect. There is an abundance of hazard communication information, supplies, training, and training aids readily available to the public off-the-shelf or through the Internet.

On March 30, 1999, we reopened the rulemaking record (64 FR 15144) for the limited purpose of receiving comments on several regulatory mandates, some of which were not in existence when the Agency published the hazard communication proposal in 1990. These statutory mandates and Executive Orders require the Agency to evaluate the impact of a regulatory action on small mines; on State, local, and tribal governments; on the environment; on constitutionally protected property rights; on the Federal court system; on children; on Indian tribal governments; and on Federalism.

A. *The National Environmental Policy Act of 1969*

The National Environmental Policy Act (NEPA) (42 U.S.C. 4321 *et seq.*) requires each Federal agency to consider the environmental effects of its actions. NEPA also requires an agency to prepare an Environmental Impact Statement for major actions significantly affecting the quality of the environment. We have reviewed HazCom in accordance with the requirements of NEPA, the regulations of the Council on Environmental Quality (40 CFR 1500), and the Department of Labor's NEPA regulations (29 CFR 11). As a result of this review, we determined that this interim final rule has no significant environmental impact.

B. *Unfunded Mandates Reform Act of 1995*

For purposes of the Unfunded Mandates Reform Act of 1995, this rule does not include any Federal mandate that may result in increased expenditures by State, local, and tribal governments in the aggregate of more than \$100 million, or increased expenditures by the private sector of more than \$100 million.

C. *Executive Order 12630: Government Actions and Interference With Constitutionally Protected Property Rights*

HazCom is not subject to E.O. 12630 because it does not involve implementation of a policy with takings implications.

D. *Executive Order 12988: Civil Justice Reform*

We have reviewed E.O. 12988 and determined that the HazCom interim final rule will not unduly burden the Federal court system. We wrote HazCom to provide a clear legal standard for affected conduct and have reviewed it carefully to eliminate drafting errors and ambiguities.

E. *Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks*

We have evaluated the environmental safety and health effects of the rule on children and have determined that the interim final rule will have no disproportionate effect on children.

HazCom is a health and safety information and training rule. It does not set exposure limits or require controls. It can, however, benefit children indirectly. One commenter to the reopened record supported the interim final rule stating that—

- Parents exposed to a genotoxic material could have their reproductive genes damaged which, in turn, could result in miscarriages or congenital or developmental impairments in their children;
- Parents could bring home hazardous chemicals on their clothing or their person which could result in children being injured by contact with the parent; and
- If parents knew that a chemical could adversely affect their children, they would take more precautions to prevent their own and their children's exposure.

F. *Executive Order 13084: Consultation and Coordination With Indian Tribal Governments*

We certify that the interim final rule does not impose substantial direct compliance costs on Indian tribal governments.

Further, MSHA provided the public, including Indian tribal governments which operated mines, the opportunity to comment during the proposed rule's comment period. No Indian tribal government applied for a waiver or commented on the proposal.

G. *Executive Order 13132: Federalism*

We have reviewed this rule in accordance with E.O. 13132 regarding federalism, and have determined that it does not have "federalism implications." The rule does not "have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government."

List of Subjects

30 CFR Part 42

Education, Intergovernmental relations, Mine safety and health.

30 CFR Part 47

Chemicals, Hazard communication, Hazardous substances, Labeling,

Material safety data sheets, Mine safety and health, Reporting and recordkeeping requirements, Right-to-know, Training.

30 CFR Part 56

Chemicals, Electric power, Explosives, Fire prevention, Hazardous substances, Metals, Mine safety and health, Noise control, Reporting and recordkeeping requirements.

30 CFR Part 57

Chemicals, Electric power, Explosives, Fire prevention, Gases, Hazardous substances, Metals, Mine safety and health, Noise control, Radiation protection, Reporting and recordkeeping requirements.

30 CFR Part 77

Communications equipment, Electric power, Emergency medical services, Explosives, Fire prevention, Mine safety and health, Reporting and recordkeeping requirements.

Dated: September 22, 2000.

J. Davitt McAteer,

Assistant Secretary for Mine Safety and Health.

For the reasons set out in the preamble, and under the authority of the Federal Mine Safety and Health Act of 1977, we are amending chapter I of title 30 of the Code of Federal Regulations as follows.

PART 47—[REDESIGNATED AS PART 42]

1. The authority for part 47 continues to read as follows:

Authority: 30 U.S.C. 957.

2. Part 47—National Mine Health and Safety Academy is transferred to subchapter G—Filing and other administrative requirements, and redesignated as part 42.

PART 56—[AMENDED]

3. The authority citation for part 56 continues to read as follows:

Authority: 30 U.S.C. 811.

4. Section 56.16004 is revised to read as follows:

§ 56.16004 Containers for hazardous materials.

Containers holding hazardous materials must be of a type approved for such use by recognized agencies.

§ 56.20012 [Removed]

5. Section 56.20012 is removed.

PART 57—[AMENDED]

6. The authority citation for part 57 continues to read as follows:

Authority: 30 U.S.C. 811.

7. Section 57.16004 is revised to read as follows:

§ 57.16004 Containers for hazardous materials.

Containers holding hazardous materials must be of a type approved for such use by recognized agencies.

§ 57.20012 [Removed]

8. Section 57.20012 is removed.

PART 77—[AMENDED]

9. The authority citation for part 77 continues to read as follows:

Authority: 30 U.S.C. 811.

10. Paragraph (c) of § 77.208 is revised to read as follows:

§ 77.208 Storage of materials.

* * * * *

(c) Containers holding hazardous materials must be of a type approved for such use by recognized agencies.

* * * * *

PART 47—HAZARD COMMUNICATION (HAZCOM)

11. Add a new part 47 to subchapter H in chapter I, title 30 of the Code of Federal Regulations to read as follows:

PART 47—HAZARD COMMUNICATION (HAZCOM)

Subpart A—Purpose and Scope of HazCom Sec.

47.1 Purpose of a HaZCoM standard.
47.2 Operators and chemicals covered.

Subpart B—Hazard Determination

47.11 Identifying hazardous chemicals.

Subpart C—HaZCoM Program

47.21 Requirement for a HazCom program.
47.22 HazCom program contents.

Subpart D—Container Labels and Other Forms of Warning

47.31 Requirement for container labels.
47.32 Label contents.
47.33 Label alternatives.
47.34 Temporary, portable containers.

Subpart E—Material Safety Data Sheet (MSDS)

47.41 Requirement for an MSDS.
47.42 MSDS contents.
47.43 MSDS for hazardous waste.
47.44 Access to an MSDS.
47.45 Retaining an MSDS.

Subpart F—HazCom Training

47.51 Requirement for HazCom training.

47.52 HazCom training contents.

47.53 HazCom training records.

Subpart G—Making HazCom Information Available

47.61 Access to HazCom materials.
47.62 Cost for copies.
47.63 Providing labels and MSDSs to customers.

Subpart H—Trade Secret Hazardous Chemical

47.71 Provisions for withholding trade secrets.
47.72 Disclosure of trade secret information to MSHA.
47.73 Disclosure in a medical emergency.
47.74 Non-emergency disclosure.
47.75 Confidentiality agreement and remedies.
47.76 Denial of a written request for disclosure.
47.77 Review of denial.

Subpart I—Exemptions

47.81 Exemptions from the HazCom standard.
47.82 Exemptions from labeling.

Subpart J—Definitions

47.91 Definitions of terms used in this part.

Authority: 30 U.S.C. 811, 825.

Subpart A—Purpose and Scope of HazCom

§ 47.1 Purpose of a HazCom standard.

The purpose of this part is to reduce injuries and illnesses by ensuring that each operator—

- (a) Identifies the chemicals at the mine,
- (b) Determines which chemicals are hazardous,
- (c) Establishes a HazCom program, and
- (d) Informs each miner who can be exposed, and other on-site operators whose miners can be exposed, about those hazards and appropriate protective measures.

§ 47.2 Operators and chemicals covered.

This part applies to any operator producing or using a hazardous chemical to which a miner can be exposed under normal conditions of use or in a foreseeable emergency. (Subpart I lists exemptions from coverage.)

Subpart B—Hazard Determination

§ 47.11 Identifying hazardous chemicals.

A hazardous chemical is any chemical that is a physical or health hazard. The operator must evaluate each chemical brought onto mine property and each chemical produced on mine property to determine if it is hazardous as specified in Table 47.11 as follows:

TABLE 47.11.—IDENTIFYING HAZARDOUS CHEMICALS

Category	Basis for determining if a chemical is hazardous
(a) Chemical brought to the mine	(1) The chemical is hazardous when its MSDS or container label indicates it is a physical or health hazard; or the operator may choose to evaluate the chemical using the criteria in paragraph (b) or (c) of this table. (2) If the chemical is a hazardous waste and an MSDS is unavailable, the chemical is hazardous if any of the sources in paragraph (b) of this table indicates it is a physical or health hazard.
(b) Chemical produced at the mine	The chemical is hazardous if any one of the following indicates that it is a hazard: (1) Available evidence concerning its physical hazards. (2) MSHA standards in 30 CFR chapter 1. (3) American Conference of Governmental Industrial Hygienists (ACGIH), "Threshold Limit Values and Biological Exposure Indices" (latest edition). (4) National Toxicology Program (NTP), "Annual Report on Carcinogens" (latest edition). (5) International Agency for Research on Cancer (IARC), Supplement 7 "Overall Evaluations of Carcinogenicity: An Updating of IARC Monographs Volumes 1 to 42," or any subsequent IARC "Monographs" or "Supplements".
(c) Mixture produced at the time	(1) If a mixture has been tested as a whole to determine its hazards, use the results of that testing. (2) If a mixture has not been tested as a whole to determine its hazards— (i) Use whatever scientifically valid evidence is available to determine its physical hazards; (ii) Assume that it presents the same health hazard as a component that makes up 1% or more (by weight or volume) of the mixture; and (iii) Assume that it presents a carcinogenic hazard if a component considered carcinogenic by ACGIH, NTP, or IARC makes up 0.1% or more (by weight or volume) of the mixture. (3) If evidence indicates that a component could be released from a mixture in a concentration that could present a health risk to miners, assume that the mixture presents the same hazard.

Subpart C—HazCom Program**§ 47.21 Requirement for a HazCom program.**

Each operator must—

- (a) Develop and implement a written HazCom program;
- (b) Maintain it for as long as a hazardous chemical is known to be at the mine; and
- (c) Share relevant HazCom information with other operators whose miners can be affected.

§ 47.22 HazCom program contents.

The HazCom program must include the following:

- (a) How this part is put into practice at the mine through the use of—
 - (1) Hazard determination,
 - (2) Labels and other forms of warning,
 - (3) Material safety data sheets (MSDSs), and
 - (4) Miner training.
- (b) A list or other record of the identity of all hazardous chemicals known to be at the mine. The list must—
 - (1) Use a chemical identity that permits cross-referencing between the

list, a chemical's label, and its MSDS; and

(2) Be compiled for the whole mine or by individual work areas.

(c) At mines with more than one operator, the methods for—

- (1) Providing other operators with access to MSDSs, and
- (2) Informing other operators about—
 - (i) Hazardous chemicals to which their employees can be exposed,
 - (ii) The labeling system on the containers of these chemicals, and
 - (iii) Appropriate protective measures.

Subpart D—Container Labels and Other Forms of Warning**§ 47.31 Requirement for container labels.**

(a) The operator must ensure that each container of a hazardous chemical has a label. If a container is tagged or marked with the appropriate information, it is labeled.

(1) The operator must replace a container label immediately if it is missing or if the hazard information on the label is unreadable.

(2) The operator must not remove or deface existing labels on containers of hazardous chemicals.

(b) For each hazardous chemical produced at the mine, the operator must prepare a container label and update this label with any significant new information about the chemical's hazards within 3 months of becoming aware of this information.

(c) For each hazardous chemical brought to the mine, the operator must replace an outdated label when a revised label is received from the chemical's manufacturer or supplier.

(d) The operator is not responsible for an inaccurate label obtained from the chemical's manufacturer or supplier.

§ 47.32 Label contents.

If an operator must make a label, the label must—

- (a) Be prominently displayed, legible, accurate, and in English;
- (b) Display appropriate hazard warnings; and
- (c) Use a chemical identity that permits cross-referencing between the

list of hazardous chemicals, a chemical's label, and its MSDS.

§ 47.33 Label alternatives.

The operator may use signs, placards, process sheets, batch tickets, operating procedures, or other label alternatives for individual, stationary process containers, provided that the alternative—

(a) Identifies the container to which it applies,

(b) Communicates the same information as required on the label, and

(c) Is readily accessible throughout each work shift to miners in the work area.

§ 47.34 Temporary, portable containers.

The operator does not have to label a temporary, portable container into which a hazardous chemical is transferred from a labeled container provided that—

(a) The operator ensures that the miner using the portable container knows the identity of the chemical, its hazards, and any protective measures needed; and

(b) The portable container is left empty at the end of the shift.

Subpart E—Material Safety Data Sheets (MSDS)

§ 47.41 Requirement for an MSDS.

(a) The operator must have an MSDS for each hazardous chemical before using it. The MSDS may be in any medium, such as paper or electronic, that does not restrict access.

(b) For each hazardous chemical produced at the mine, the operator must prepare an MSDS and update this MSDS with significant new information about the chemical's hazards or protective measures within 3 months of becoming aware of this information.

(c) For each hazardous chemical brought to the mine, the operator must

replace an outdated MSDS when a revised MSDS is received from the chemical's manufacturer or supplier.

(d) Operators may choose to rely on the MSDS received from the chemical manufacturer or supplier. Alternatively, operators may develop their own MSDS or they may obtain one from another source. The operator is not responsible for an inaccurate MSDS obtained from the chemical's manufacturer or supplier.

§ 47.42 MSDS contents.

If an operator must prepare an MSDS, the MSDS must—

(a) Be legible, accurate, and in English;

(b) Use a chemical identity that permits cross-referencing between the list of hazardous chemicals, the chemical's label, and its MSDS; and

(c) Contain information, or indicate if no information is available, for the categories listed in Table 47.42 as follows:

TABLE 47.42.—CONTENTS OF MSDS

Category	Requirements, descriptions, and exceptions
(1) Identity	The identity of the chemical or, if the chemical is a mixture, the identities of all hazardous ingredients. See § 47.11 (identifying hazardous chemicals).
(2) Properties	The physical and chemical characteristics of the chemical such as vapor pressure and solubility in water.
(3) Physical hazards	The physical hazards of the chemical including the potential for fire, explosion, and reactivity.
(4) Health hazards	The health hazards of the chemical including— (i) Signs and symptoms of exposure; (ii) Any medical conditions which are generally recognized as being aggravated by exposure to the chemical; and (iii) The primary routes of entry for the chemical, such as lungs, stomach, or skin.
(5) Exposure limits	For the chemical, or for the ingredients of the mixture— (i) The MSHA permissible limit, if there is one, and (ii) Any other exposure limit recommended by the preparer of the MSDS.
(6) Carcinogenicity	Whether the chemical or an ingredient in the mixture is a carcinogen or potential carcinogen. See the sources specified in § 47.11 (identifying hazardous chemicals).
(7) Safe use	Precautions for safe handling and use including— (i) Appropriate hygienic practices, (ii) Protective measures during repair and maintenance of contaminated equipment, and (iii) Procedures for clean-up of spills and leaks.
(8) Control measures	Generally applicable control measures such as engineering controls, work practices, and personal protective equipment.
(9) Emergency information	(i) Emergency medical and first-aid procedures, and (ii) The name and telephone number of a person who can provide additional information on the hazardous chemical and appropriate emergency procedures.
(10) Date prepared	The date the MSDS was prepared or last changed.

§ 47.43 MSDS for hazardous waste.

(a) If an MSDS is not available for hazardous waste and the operator is unable to obtain or develop one, the operator must provide each potentially exposed miner with the information specified in Table 47.42 for the hazardous waste to the extent that it is available.

(b) If the mine produces or uses hazardous waste, the operator must provide each exposed miner and designated representative with access to any HazCom material which—

- (1) Identifies its hazardous chemical components,
- (2) Describes its physical or health hazards, or
- (3) Specifies appropriate protective measures.

§ 47.44 Access to an MSDS.

The operator must provide miners with access during each work shift to the MSDS for each hazardous chemical to which they may be exposed either—

- (a) At each work area where the hazardous chemical is produced or used, or
- (b) At a central location, provided that a miner can readily access it in an emergency.

§ 47.45 Retaining an MSDS.

The operator must—

- (a) Retain its MSDS for as long as the hazardous chemical is known to be at the mine, and
- (b) Notify miners at least 3 months before disposing of the MSDS.

Subpart F—HazCom Training**§ 47.51 Requirement for HazCom Training.**

(a) The operator must instruct each miner about the hazardous chemicals in his or her work area—

- (1) Before the miner's first assignment to that work area;
- (2) Whenever the operator introduces a new hazardous chemical into the miner's work area, unless the operator has previously trained the miner about the hazard; and

(3) Whenever the operator becomes aware of new and significant information about a chemical's hazards.

(b) Relevant training conducted in compliance with other parts of this chapter or with OSHA's Hazard Communication Standard can be used to meet the requirements of this part. Relevant training conducted in compliance with this part can be used to meet the requirements of other parts of this chapter.

§ 47.52 HazCom training contents.

HazCom training must include instruction on the following:

(a) The physical and health hazards of chemicals in the work area.

(b) The requirements of this part.

(c) The mine's HazCom program, including an explanation of the labeling system and MSDSs and how miners can obtain and use this hazard information.

(d) The location and availability of the written HazCom program, the list of hazardous chemicals, labeling information, and MSDSs.

(e) The operations or locations where hazardous chemicals are present in the miner's work area, such as unlabeled pipes, stockpiles, conveyors, rod or ball mills, containers of raw materials, and non-routine tasks, such as the cleaning of a storage tank that had contained a hazardous chemical.

(f) The methods and observations that can be used to detect the presence or release of a hazardous chemical in the work area.

(g) The measures that a miner can take to protect himself or herself from these hazards.

(h) The specific procedures, such as work practices, engineering controls, emergency procedures, and use of personal protective equipment, in place at the mine to protect miners from hazardous chemical exposure.

§ 47.53 HazCom training records.

The operator must make a record of each miner's HazCom training and keep the record for 2 years.

Subpart G—Making HazCom Information Available**§ 47.61 Access to HazCom materials.**

Upon request, the operator must provide access to all HazCom materials required by this part to miners and designated representatives, except as provided in § 47.71 through § 47.77 (provisions for trade secrets).

§ 47.62 Cost for copies.

(a) The operator must provide the first copy and each revision of the HazCom material without cost.

(b) Fees for a subsequent copy of the HazCom material must be non-discriminatory and reasonable.

§ 47.63 Providing labels and MSDSs to customers.

(a) For a hazardous chemical produced at the mine, the operator must provide customers, upon request, with the chemical's label, or a copy of the label information, and the chemical's MSDS.

(b) The label or label information must include the name and address of a responsible party who can provide additional information about the hazardous chemical.

Subpart H—Trade Secret Hazardous Chemical**§ 47.71 Provisions for withholding trade secrets.**

(a) Operators may withhold the identity of a trade secret chemical, including the name and other specific identification, from the written list of hazardous chemicals, the label, and the MSDS, provided that the operator—

(1) Can support the claim that the chemical's identity is a trade secret,

(2) Identifies the chemical in a way that it can be referred to without disclosing the secret,

(3) Indicates in the MSDS that the chemical's identity is withheld as a trade secret, and

(4) Discloses in the MSDS information on the properties and effects of the hazardous chemical.

(b) The operator must make the chemical's identity available to miners, designated representatives, and health professionals in accordance with the provisions of this subpart H.

(c) This subpart H does not require the operator to disclose process or percentage of mixture information, which is a trade secret, under any circumstances.

§ 47.72 Disclosure of information to MSHA.

(a) Even if the operator has a trade secret claim, the operator must disclose to MSHA, upon request, any information which this subpart H requires the operator to make available.

(b) The operator must make a trade secret claim, no later than at the time the information is provided to MSHA, so that MSHA can determine the trade secret status and implement the necessary protection.

§ 47.73 Disclosure in a medical emergency.

(a) Upon request and regardless of the existence of a written statement of need or a confidentiality agreement, the operator must immediately disclose the identity of a trade secret chemical to the treating health professional when that person determines that—

(1) A medical emergency exists, and

(2) The identity of the hazardous chemical is necessary for emergency or first-aid treatment.

(b) The operator may require a written statement of need and confidentiality agreement in accordance with the provisions of § 47.74 and § 47.75 as soon as circumstances permit.

§ 47.74 Non-emergency disclosure.

Upon request, the operator must disclose the identity of a trade secret chemical in a non-emergency situation

to an exposed miner, the miner's designated representative, or a health professional providing services to the miner, if the following conditions are met.

- (a) The request is in writing.
- (b) The request describes in reasonable detail an occupational health need for the information, as follows:
 - (1) To assess the chemical hazards to which the miner will be exposed.
 - (2) To conduct or assess health sampling to determine the miner's exposure levels.
 - (3) To conduct reassignment or periodic medical surveillance of the exposed miner.
 - (4) To provide medical treatment to the exposed miner.
 - (5) To select or assess appropriate personal protective equipment for the exposed miner.
 - (6) To design or assess engineering controls or other protective measures for the exposed miner.
 - (7) To conduct studies to determine the health effects of exposure.
- (c) The request explains in detail why the disclosure of the following information would not satisfy the purpose described in paragraph (b) of this section:
 - (1) The properties and effects of the chemical.
 - (2) Measures for controlling the miner's exposure to the chemical.
 - (3) Methods of monitoring and analyzing the miner's exposure to the chemical.
 - (4) Methods of diagnosing and treating harmful exposures to the chemical.
- (d) The request describes the procedures to be used to maintain the confidentiality of the disclosed information.
- (e) The requester enters a written confidentiality agreement that he or she will not use the information for any purpose other than the health needs

asserted and agrees not to release the information under any circumstances, except as authorized by § 47.75, by the terms of the agreement, or by the operator.

§ 47.75 Confidentiality agreement and remedies.

- (a) The confidentiality agreement authorized by § 47.74—
 - (1) May restrict the use of the trade secret chemical identity to the health purposes indicated in the written statement of need;
 - (2) May provide for appropriate legal remedies in the event of a breach of the agreement, including stipulation of a reasonable pre-estimate of likely damages;
 - (3) Must allow the exposed miner, the miner's designated representative, or the health professional to disclose the trade secret chemical identity to MSHA.
 - (4) May provide that the exposed miner, the miner's designated representative, or the health professional inform the operator who provided the trade secret chemical identity prior to or at the same time as its disclosure to MSHA; and
 - (5) May not include requirements for the posting of a penalty bond.
- (b) Nothing in this subpart precludes the parties from pursuing non-contractual remedies to the extent permitted by law.

§ 47.76 Denial of a written request for disclosure.

- To deny a written request for disclosure of the identity of a trade secret chemical, the operator must—
- (a) Put the denial in writing, and
 - (1) Include evidence to substantiate the claim that the chemical's identity is a trade secret,
 - (2) State the specific reasons why the request is being denied, and
 - (3) Explain how alternative information will satisfy the specific

medical or occupational health need without revealing the chemical's identity.

- (b) Provide the denial to the health professional, miner, or designated representative within 30 days of the request.

§ 47.77 Review of denial.

- (a) The health professional, miner, or designated representative may refer the written denial to MSHA for review. The request for review must include a copy of—
 - (1) The request for disclosure of the identity of the trade secret chemical,
 - (2) The confidentiality agreement, and
 - (3) The operator's written denial,
- (b) If MSHA determines that the identity of the trade secret chemical should have been disclosed, the operator shall be subject to citation by MSHA.
- (c) If MSHA determines that the confidentiality agreement would not sufficiently protect against unauthorized disclosure of the trade secret, MSHA may impose additional conditions to ensure that the occupational health services are provided without an undue risk of harm to the operator.
- (d) If the operator contests a citation for a failure to release the identity of a trade secret chemical, the matter will be adjudicated by the Mine Safety and Health Review Commission. The Administrative Law Judge may review the citation and supporting documentation in camera or issue appropriate orders to protect the trade secret.

Subpart I—Exemptions

§ 47.81 Exemptions from the HazCom standard.

A hazardous chemical is exempt from this part 47 under the conditions described in Table 47.81 as follows:

TABLE 47.81.—CHEMICALS AND PRODUCTS EXEMPT FROM THIS HAZCOM STANDARD

Exemption	Conditions for exemption
Article	If, under normal conditions of use, it— (1) Releases no more than insignificant amounts of a hazardous chemical, and (2) Poses no physical or health risk to exposed miners.
Biological hazards	All biological hazards, such as poisonous plants, insects, and micro-organisms.
Consumer product	As defined in the Consumer Product Safety Act, if the operator can show that— (1) The miner uses it for the purpose the manufacturer intended; and (2) Such use does not expose the miner more often and for longer than ordinary consumer use.

TABLE 47.81.—CHEMICALS AND PRODUCTS EXEMPT FROM THIS HAZCOM STANDARD—Continued

Exemption	Conditions for exemption
Cosmetics, drugs, food, food additive, color additive drinks, alcoholic beverages, tobacco and tobacco products, or medical or veterinary device or product, including materials intended for use as ingredients in such products (such as flavors and fragrances).	When labeled in accordance with the Federal Food, Drug, and Cosmetic Act or the Virus-Serum-Toxin Act or regulations issued under those Acts, if they are packaged for retail sale and color intended for personal consumption or use by additive, miners while on mine property.
Hazardous substance	As defined in the Federal Hazardous Substances Act, if the operator can show that— (1) The miner uses it for the purpose the manufacturer intended; and (2) Such use does not expose the miner more often and for longer than ordinary consumer use.
Radiation	All ionizing or non-ionizing radiation, such as alpha or gamma, micro-waves, or x-rays.
Wood or wood products, including lumber	If they do not release or otherwise result in exposure to a hazardous chemical under normal conditions of use. For example, wood is not exempt if it is treated with a hazardous chemical or if it will be subsequently cut or sanded.

§ 47.82 Exemptions from labeling.

A hazardous chemical is exempt from subpart D of this part 47 under the conditions described in Table 47.82 as follows:

TABLE 47.82.—HAZARDOUS CHEMICALS EXEMPT FROM LABELING

Exemption	Conditions for exemption
Chemical substance or mixture regulated by EPA	When labeled in accordance with the Toxic Substances Control Act or regulations issued under that Act.
Consumer product or hazardous substance not exempt under § 47.81 ..	When subject to a consumer product safety standard or a labeling requirement of the Consumer Product Safety Act and Federal Hazardous Substances Act respectively, or regulations issued under those Acts.
Hazardous substances	When the subject of remedial or removal action under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) in accordance with EPA regulations.
Pesticide regulated by EPA or the Department of Agriculture	When labeled in accordance with the Federal Insecticide, Fungicide, and Rodenticide Act or the Federal Seed Act or regulations issued under those Acts.
Raw material being mined or processed	While on mine property, except when the container holds a mixture of the raw material and another hazardous chemical and the mixture is determined to be hazardous under § 47.11 (identifying hazardous chemicals) of this part.
Wood or wood products, including lumber, not exempt under § 47.81 ...	If it releases more than insignificant amounts of a hazardous chemical or will be subsequently cut or sanded.

Subpart J—Definitions

§ 47.91 Definitions of terms used in this part.

The definitions in Table 47.91 apply in this part 47 as follows:

TABLE 47.91.—DEFINITIONS

Term	Definition for purposes of HazCom
Access	The right to examine and copy records.

TABLE 47.91.—DEFINITIONS—Continued

Term	Definition for purposes of HazCom
Article	A manufactured item, other than a fluid or particle, that— (1) Is formed to a specific shape or design during manufacture, and (2) Has end-use functions dependent upon its shape or design.
Chemical	Any element, chemical compound, or mixture of these.
Chemical name	(1) The scientific designation of a chemical in accordance with the nomenclature system of either the International Union of Pure and Applied Chemistry (IUPAC) or the Chemical Abstracts Service (CAS), or (2) A name that will clearly identify the chemical for the purpose of conducting a hazard evaluation.
Common name	Any designation or identification (such as a code name, code number, trade name, brand name, or generic name) used to identify a chemical other than by its chemical name.
Consumer product	Any article or component that is— (1) Produced or distributed for sale to a consumer; (2) Normally used for personal, family, household, school, or recreation purposes; and (3) Labeled in accordance with the Consumer Product Safety Act or regulations issued under that Act.
Container	(1) Any bag, barrel, bottle, box, can, cylinder, drum, reaction vessel, storage tank, or the like. (2) The following are not considered to be containers for the purpose of compliance with this part: (i) Pipes or piping systems; (ii) Conveyors; and (iii) Engines, fuel tanks, or other operating systems or parts in a vehicle.
Cosmetics and drugs	(1) Cosmetics are any article applied to the human body for cleansing, beautifying, promoting attractiveness or altering appearance. (2) Drugs are any article used to affect the structure or any function of the body of humans or other animals.
Designated representative	(1) Any individual or organization to whom a miner gives written authorization to exercise the miner's rights under this part, or (2) A representative of miners under part 40 of this chapter.
EPA	The U.S. Environmental Protection Agency.
Exposed	Subjected, or potentially subjected, to a physical or health hazard in the course of employment. "Subjected," in terms of health hazards, includes any route of entry, such as through the lungs (inhalation), the stomach (ingestion), or the skin (skin absorption).
Foreseeable emergency	Any potential occurrence that could result in an uncontrolled release of a hazardous chemical into the mine and for which an operator normally would plan, such as equipment failure, breaks or spills of containers, or failure of control equipment.
Hazard warning	Any words, pictures, or symbols, appearing on a label or other form of warning, that convey the specific physical and health hazards of the chemical. (See the definitions for <i>physical hazard</i> and <i>health hazard</i> for examples of the hazards that the warning must convey.)
Hazardous chemical	Any chemical that presents a physical or health hazard.
Hazardous waste	Chemicals regulated by EPA under the Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act.

TABLE 47.91.—DEFINITIONS—Continued

Term	Definition for purposes of HazCom
Health hazard	<p>A chemical for which there is statistically significant evidence that it can cause acute or chronic health effects in exposed persons. <i>Health hazard</i> includes chemicals which—</p> <ol style="list-style-type: none"> (1) Cause cancer; (2) Damage the reproductive system or cause birth defects; (3) Irritate or corrode tissues; (4) Cause a sensitization reaction; (5) Damage the liver; (6) Damage the kidneys; (7) Damage the nervous system, including psychological or behavioral problems; (8) Damage the blood or lymphatic systems; (9) Damage the stomach or intestines; and (10) Damage the lungs, skin, eyes, or mucous membranes.
Health professional	A physician, nurse, physician's assistant, emergency medical technician, industrial hygienist, toxicologist, epidemiologist, or other person qualified to provide medical or occupational health services.
Identity	A chemical's <i>common name</i> or <i>chemical name</i> .
Label	Any written, printed, or graphic material displayed on or affixed to a container to identify its contents and convey other relevant information.
Material safety data sheet (MSDS)	<p>Written or printed material concerning a hazardous chemical which—</p> <ol style="list-style-type: none"> (1) An operator prepares in accordance with Table 47.42 (MSDS requirements) of this part, or (2) An employer prepares in accordance with 29 CFR 1910.1200, 1915.1200, 1917.28, 1918.90, 1926.59, or 1928.21 (OSHA Hazard Communication regulations).
Mixture	Any combination of two or more chemicals which is not the result of a chemical reaction.
Ordinary consumer use	A product or article packaged by the manufacturer or retailer for ordinary household, family, school, recreation, or other personal use or enjoyment, as opposed to business use, and the miner's exposure is not more than it would be for an ordinary consumer using the product as the manufacturer intended.
OSHA	The Occupational Safety and Health Administration, U.S. Department of Labor.

TABLE 47.91.—DEFINITIONS—Continued

Term	Definition for purposes of HazCom
Physical hazard	<p>A chemical for which there is scientifically valid evidence that it is—</p> <ul style="list-style-type: none"> (1) A <i>combustible liquid, i.e.</i> <ul style="list-style-type: none"> (i) A liquid having a flash point at or above 100 °F (37.8 °C) and below 200 °F (93.3 °C); or (ii) A liquid mixture having components with flashpoints of 200 °F (93.3 °C) or higher, the total volume of which make up 99% or more of the mixture. (2) A <i>compressed gas, i.e.</i> <ul style="list-style-type: none"> (i) A contained gas or mixture of gases with an absolute pressure exceeding: <ul style="list-style-type: none"> (A) 40 psi (276 kPa) at 70 °F (21.1 °C); or (B) 104 psi (717 kPa) at 130 °F (54.4 °C) regardless of pressure at 70 °F. (ii) A liquid having a vapor pressure exceeding 40 psi (276 kPa) at 100 °F (37.8 °C) as determined by ASTM D-323-72. (3) An <i>explosive, i.e.</i>, a chemical that undergoes a rapid chemical change causing a sudden, almost instantaneous release of pressure, gas, and heat when subjected to sudden shock, pressure, or high temperature; (4) A <i>flammable, i.e.</i>, a chemical that will readily ignite and, when ignited, will burn persistently at ambient temperature and pressure in the normal concentration of oxygen in the air; (5) An <i>organic peroxide, i.e.</i>, an explosive, shock sensitive, organic compound or an oxide that contains a high proportion of oxygen-superoxide; (6) An <i>oxidizer, i.e.</i>, a chemical, other than an explosive, that initiates or promotes combustion in other materials, thereby causing fire either of itself or through the release of oxygen or other gases; (7) A <i>pyrophoric, i.e.</i>, capable of igniting spontaneously in air at a temperature of 130 °F (54.4 °C) or below. (8) <i>Unstable (reactive), i.e.</i>, a chemical which in the pure state, or as produced or transported, will vigorously polymerize, decompose, condense, or become self-reactive under conditions of shock, pressure, or temperature; or (9) <i>Water-reactive, i.e.</i>, a chemical that reacts with water to release a gas that is either flammable or a health hazard.
Produce	To manufacture, process, formulate, generate, or repackage.
Raw material	Ore, valuable minerals, worthless material or gangue, overburden, or a combination of these, that is removed from natural deposits by mining or is upgraded through milling.
Trade secret	Any confidential formula, pattern, process, device, information, or compilation of information that is used by the operator and that gives the operator an opportunity to obtain an advantage over competitors who do not know or use it.
Use	To package, handle, react, or transfer.
Work area	Any place in or about a mine where a miner works.