Environmental Protection Agency

§ 59.505 How do I demonstrate compliance with the reactivity limits?

(a) To demonstrate compliance with the PWR limits presented in Table 1 of this subpart, you must calculate the PWR for each coating as described in paragraphs (a)(1) through (2) of this section:

(1) Calculate the weighted reactivity factor (WRF) for each propellant and coating component using Equation 1:

\[ WRF_i = RF_i \times WF_i \]  

Equation 1

Where:

WRF\(_i\) = weighted reactivity factor of component \(i\), g \(\text{O}_3\)/g component.

RF\(_i\) = reactivity factor of component \(i\), g \(\text{O}_3\)/g component, from Table 2A, 2B, or 2C.

WF\(_i\) = weight fraction of component \(i\) in the product.

(b) In calculating the PWR, you must follow the guidelines in paragraphs (b)(1) through (b)(4) of this section.

(1) Any ingredient which does not contain carbon is assigned a RF value of 0.

(2) Any aerosol coating solid, including but not limited to resins, pigments, fillers, plasticizers, and extenders is assigned a RF of 0. These items do not have to be identified individually in the calculation.

(3) All individual compounds present in the coating in an amount equal to or exceeding 0.1 percent will be considered ingredients regardless of whether or not the ingredient is reported to the manufacturer.

(4) All individual compounds present in the coating in an amount less than 0.1 percent will be assigned an RF value of 0.

(5) Any component that is a VOC but is not listed in Table 2A, 2B, or 2C of this subpart is assigned an RF value as detailed in paragraph (e) of this section.

(c) You may use either formulation data (including information for both the liquid and propellant phases), California Air Resources Board Method 310—Determination of Volatile Organic Compounds (VOC) in Consumer Products and Reactive Organic Compounds in Aerosol Coating Products (May 5, 2005) (incorporated by reference in 59.515), or EPA’s Method 311—Analysis of Hazardous Air Pollutant Compounds in Paints and Coatings by Direct Injection into a Gas Chromatograph (40 CFR part 63, appendix A), to calculate the PWR. However, if there are inconsistencies between the formulation data and the California Air Resources Board Method 310 (May 5, 2005) (incorporated by reference in 59.515), or EPA Method 311—Analysis of Hazardous Air Pollutant Compounds in Paints and Coatings by Direct Injection into a Gas Chromatograph (40 CFR part 63, appendix A) results, the California Air Resources Board Method 310 (May 5, 2005) (incorporated by reference in 59.515), or EPA
§ 59.506 How do I demonstrate compliance if I manufacture multi-component kits?

(a) If you manufacture multi-component kits as defined in §59.503, then the Kit PWR must not exceed the Total Reactivity Limit.

(b) You must calculate the Kit PWR and the Total Reactivity Limit as follows:

Method 311—Analysis of Hazardous Air Pollutant Compounds in Paints and Coatings by Direct Injection into a Gas Chromatograph (40 CFR part 63, appendix A) results will govern.

(d) If you manufacture a coating containing either an aromatic or aliphatic hydrocarbon solvent mixture, you must use the appropriate RF for that mixture provided in Table 2B or 2C of this subpart when calculating the PWR using formulation data. However, when calculating the PWR for a coating containing these mixtures using data from California Air Resources Board Method 310 (May 5, 2005) (incorporated by reference in 59.515), or EPA Method 311—Analysis of Hazardous Air Pollutant Compounds in Paints and Coatings by Direct Injection into a Gas Chromatograph (40 CFR part 63, appendix A), you must identify the individual compounds that are present in the solvent mixture and use the weight fraction of those individual compounds and their RF from Table 2A of this subpart in the calculation.

(e) If a VOC is used in a product but not listed in Table 2A of this subpart, the Reactivity Factor (RF) is assigned according to paragraphs (e)(1), (e)(2), (e)(3) or (e)(4) of this section.

(f) In calculating the PWR value for a coating containing an aromatic hydrocarbon solvent with a boiling range different from the ranges specified in Table 2C of this subpart, you must assign an RF as described in paragraphs (f)(1) and (f)(2) of this section:

(1) If the solvent boiling point is lower than or equal to 420 degrees F, then you must use the RF in Table 2C of this subpart specified for bin 23;

(2) If the solvent boiling point is higher than 420 degrees F, then you must use the RF specified in Table 2C of this subpart for bin 24.

(g) For purposes of compliance with the PWR limits, all compounds listed in Tables 2A, 2B, or 2C that are used in the aerosol coating products must be included in the calculation. This includes compounds that may otherwise be exempted from the definition of VOC in §59.100(s).