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DEPARTMENT OF COMMERCE
BUREAU OF STANDARDS
WASHINGTON, D. C.

Letter
Circular
LC 341

August 1, 1932.

DRAINPIPE CLEANERS OR SOLVENTS

This letter circular has been prepared as a result of the numerous requests received by the Bureau of Standards for general information regarding various drainpipe cleaners or solvents.

For the removal of grease, as in kitchen sink drains, a water solution of concentrated lye (sodium hydroxide or caustic soda) is in general use. Potassium hydroxide, commonly known as caustic potash, would probably be more satisfactory from a cleansing standpoint, since the potash soap that is formed from the grease is a soft soap that is readily dissolved and washed away. This material, however, is more difficult to obtain. While soda soap is not as soluble as potash soap it is, nevertheless, soluble in water and can be removed in time by flushing with hot water. This latter preparation is also less expensive. There are drainpipe cleaners on the market consisting of a mixture of caustic soda (lye) and a small amount of aluminum turnings or chips.

It is probable that most, if not all, drainpipe cleaners will attack some of the metals or parts used in household plumbing especially galvanized coatings, aluminum, glazed earthenware, porcelain, and enameled iron. However, if such products are used with care, followed by copious flushing with water, it is believed that the life of the plumbing will not be materially shortened. Care should also be taken to avoid spilling these cleaners on floor coverings, or the clothing. If this occurs the surfaces should be treated at once with a mixture of vinegar and water followed by a thorough rinsing with water. It is our understanding that the labels on drainpipe solvents contain precautionary statements under such captions as "Caution" and "Poison".

In the presence of water, caustic soda and aluminum react vigorously resulting in the formation of hydrogen gas.

It may be that this stirring or agitating effect of the gas combined with the heat generated by such reaction, facilitate the removal of waste matter lodged in drainpipes. It would seem, therefore, that such mixtures should be carefully guarded, since any water splashed into an open can of the material or any moisture absorbed by it from the atmosphere will cause the reaction before mentioned, to an extent depending upon the amounts of water, caustic soda and aluminum. Should a can that has become wetted or that has stood open and absorbed moisture be subsequently closed tightly, sufficient pressure might be developed in some cases to cause the can to "blow up". If this should occur it might result in damage to household goods and injury to persons close by. However, we have not been informed of a case of damage or injury from the use of such products.

The Bureau of Standards has not investigated the various drainpipe cleaners or solvents that may be on the market. We are, therefore, not in a position to furnish formulas, or data based on experimental work as to the efficiency of such products or their action on plumbing fixtures, piping, etc.

Information regarding the possible application of the Federal Caustic Poison Act to the sale of drain cleaners may be obtained by addressing the Food and Drug Administration, U. S. Department of Agriculture, Washington, D. C.

1. The first part of the report is a general statement of the purpose and scope of the study. It is followed by a description of the methods used in the investigation. The results of the study are then presented in a series of tables and figures. The final part of the report is a discussion of the results and their implications.

2. The second part of the report is a detailed description of the methods used in the investigation. This includes a description of the subjects, the experimental design, and the procedures used to collect and analyze the data.

3. The third part of the report is a presentation of the results of the study. This is done in a series of tables and figures. The tables show the mean values and standard deviations for each of the variables measured. The figures are line graphs showing the changes in the variables over time.

4. The fourth part of the report is a discussion of the results and their implications. This includes a comparison of the results with those of previous studies, a discussion of the limitations of the study, and a conclusion about the overall findings.

