

Poison!!

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MODERN chemists are accustomed to the vast piles of paperwork generated by the federally mandated Occupational Safety and Health Administration (OSHA) when it comes to the labeling, storage and shipping of chemicals (figure 1). This requires an elaborate rating system with respect to possible toxicity, inflammability, instability and more specific chemical dangers (figure 2), as well as annual training sessions to initiate students, faculty and staff into the intricacies of the resulting pictographic symbolism and numerical rating system. All of this might cause one to wonder how chemical laboratories managed to function for hundreds of years without this vast government bureaucracy to monitor their every move.

Some evidence relative to this question may be found in the Oesper Collections which house many chemical bottles from the 19th and early 20th centuries. The answer is that, in the vast majority of the cases, no information at all was provided by the labels on early chemical bottles relative to the potential dangers of their contents. Instead, chemists were trained to always assume that a chemical was dangerous until they had definite knowledge to the contrary – a system that saved a great deal of time and paperwork.

This point is illustrated by the series of circa 1910

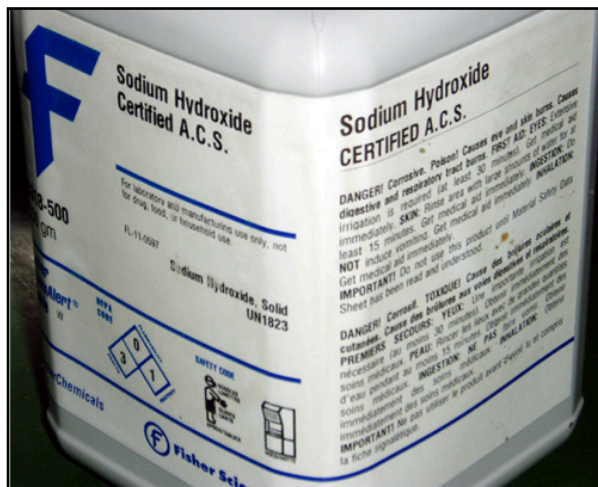


Figure 1. A typical modern chemical bottle with its array of OSHA warnings.

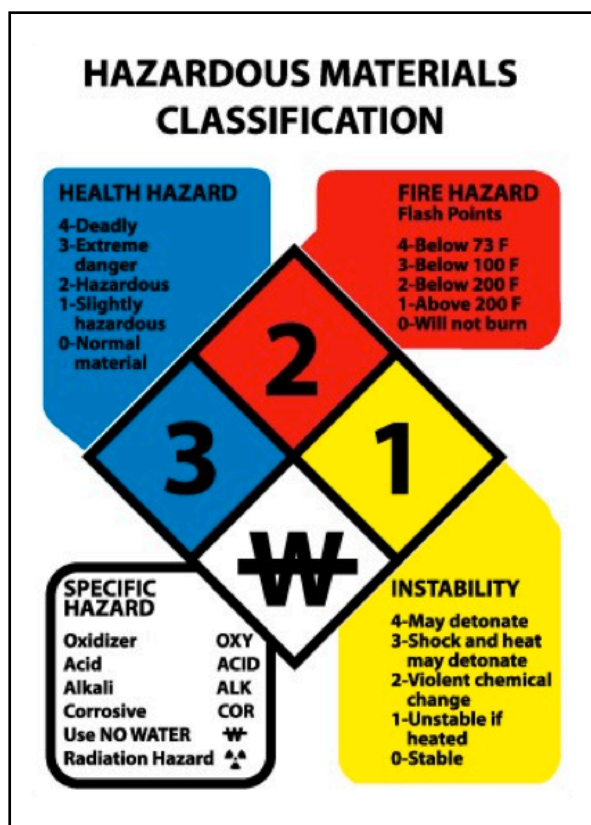


Figure 2. An overview of OSHA's rating system for laboratory chemicals

bottles shown in figure 3 which originally housed various chemicals made by the C. A. F. Kahlbaum Chemische Fabrik of Berlin, a major supplier of laboratory chemicals prior to World War I and one used extensively during this period by the Chemistry Department at Cincinnati. Not only do the labels contain no warnings concerning possible dangers, they are in German rather than English! – a language which every chemistry major was expected to understand prior to the 1960s, though in several cases some helpful person has inked in the proper English equivalents.

As indicated by our earlier use of the qualifying phrase “vast majority”, there are exceptions to this state of affairs, especially when it came to the toxicity



Figure 3 (Above). An array of circa 1910 bottles that originally contained chemicals produced by the C. A. F. Kahlbaum Chemische Fabrik of Berlin Germany.

of various chemicals used in pharmacy and medicine. A particularly striking example from our collections is the bottle shown in figure 4 which contains tablets of mercury dichloride, commonly known as “corrosive sublimate.” Now occasionally used externally as an antiseptic and disinfectant, in the 19th century this extremely toxic compound was most often administered internally to treat syphilis, though, according to Remington, it was also taken for chronic rheumatism (1).

Mercury poisoning was a very real side effect of this internal usage and so the word “poison” not only appears on the bottle’s label, it is emphasized by printing it upon a drawing of a wooden coffin. The same is equally true of the mercury dichloride tablets inside which are also coffin shaped with the word poison impressed on each. To drive home the point even further, the bottle itself is shaped like a coffin with the word poison blown into the glass and sharp points added to the surface so that one doesn’t accidentally mistake the bottle in the dark for something less lethal.

References and Notes

1. J. P. Remington, *The Practice of Pharmacy*, 2nd ed., Lippincott: Philadelphia, PA, 1891, p. 669.



Figure 4. A circa 1890 coffin-shaped bottle of poisonous mercury dichloride tablets.