

LETTERBOOK C. E. BLADES
September 1984

AP00049905



Date 21 September 1984

INTEROFFICE
MEMORANDUM

Subject Drum Label Design for
Emulsion Products

To E. J. Kuchar

Chemicals Manufacturing

(Location, Organization, or Department)

From C. E. Blades

Toxicology Department

(Location, Organization, or Department)

You have raised a question concerning labels to meet the new OSHA Hazard Communication Rule as it applies to polymer emulsions. This is an issue in your mind not because the emulsions would be classified as hazardous but rather because varying amounts of hazardous substances are added or remain as residues in emulsions. Specifically you identify:

- ° Formaldehyde
- ° Vinyl Chloride
- ° Vinyl acetate
- ° Butyl Acrylate

The OSHA rule 29 CFR 1910.1200 (d) requires identification of hazardous substances in mixtures at levels down to 1% and of carcinogens down to 0.1%.

The only substance of potential concern by these guidelines is formaldehyde. Some emulsion products contain up to 0.1% of added formaldehyde and there may be a potential for off-gassing into headspaces at concentrations in that headspace in excess of the OSHA permissible exposure limit (3 ppm). Ordinarily, however, workers do not invade the headspace environment and therefore would not be exposed above the permissible level. In our Material Safety Data Sheets we advise that drums be opened in well ventilated rooms which if followed will prevent exposure above PEL. This conclusion is based on a calculation from headspace analysis. The model case follows:

Airflex 105 stored at room temperature developed a headspace concentration of 50 ppm using a gas chromatographic method (J. H. Terrell to C. E. Blades 16 June 1980). For a room of 1000 cu ft. (10 x 10 x 10) with instantaneous diffusion and no air exhaust the formaldehyde concentration from a 1 cu ft. headspace would be 50×10^{-3} or 0.05 ppm or from a drum with 30 gal. of headspace (4 cu ft.) the concentration in the room would be 0.2 ppm each well below the 3 ppm PEL OSHA standard.

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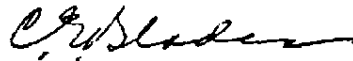
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This data predicts that workplace concentrations will not exceed permissible levels providing there is provision for adequate ventilation and the workplace standard would not be exceeded.

However, the OSHA Hazard Communication Rule does not address workplace concentrations. The rule requires labels contain appropriate hazard warning language when a mixture contains a 0.1% or greater of a substance designated as a carcinogen per specific lists. Formaldehyde qualifies under the OSHA definition. Labels therefore need to:

- Identify
- Appropriate Hazard Warning
- Name and Address of Chemical Manufacturer

Similarly there is a specific requirement for the Material Safety Data Sheet entries.



C. E. Blades

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