STORAGE AND HANDLING OF ISOPROPANOL

Isopropanol, Anhydrous, can be stored in carbon steel tanks. In the case of Isopropanol/water solutions, some rusting of steel can be expected to occur, due to the moisture present. Although suspended rust particles can be removed by the use of a fine porosity filter, a preferred method is to use an alternate material of construction, such as a lined steel tank or a tank made of stainless steel or aluminum.

NOTES
Baked phenolic coatings and epoxy-phenolic coatings have been tested for tank linings and found to be suitable.

Anhydrous Isopropanol may be corrosive to aluminum, especially at temperatures higher than room temperature. The addition of water reduces this tendency and 91 or 95 percent Isopropanol can be handled in aluminum at normal storage temperatures.

Anhydrous Isopropanol and all aqueous solutions containing more than about 10 percent Isopropanol are classed as "flammable liquids" under OSHA Regulations (i.e., their closed cup flash points are below 100°F). Facilities for handling these materials should conform to the OSHA Regulations.

The flammable limits of Isopropanol vapors in air are 2.0 to 12.7 volume percent. At 68°F, the vapor pressure of Isopropanol is 33 millimeters of mercury. The vapor concentration in the vapor space of a storage tank will be 33/760 x 100 or about 4.3 volume percent. Since this mixture is within the flammable range, it is safest to exclude air by blanketing the tank with an inert gas (nitrogen). In the case of Anhydrous Isopropanol, nitrogen blanketing will not only prevent formation of a flammable vapor-air mixture but, also, by excluding atmospheric moisture, will prevent moisture pickup during storage.

Transfer lines may be of carbon steel. For Isopropanol, 91 or 95 percent, stainless steel, galvanized or lined piping should be considered if rusting is to be eliminated. Acceptable elastomers for use at ambient conditions include

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EPDM, Butyl, Silicone, and Viton A. "Teflon" tape can be used as thread sealant on screwed fittings. A centrifugal pump with an explosion-proof motor drive is recommended and a pump equipped with a mechanical seal is preferred.

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