

TABLE 38-D

ALKALI EQUIVALENTS TO ABSORB CHLORINE

Chlorine Container (lb net)	100% Caustic Soda (lb)	Water (gal)	Soda Ash (lb)	Water (gal)	Hydrated Lime (lb)	Water (gal)
100	125	40	300	100	125	125
150	188	60	450	150	188	188
2,000	2,500	800	6,000	2,000	2,500	2,500

shift the container or containers so that chlorine gas can escape. If possible, transfer the containers to a suitable conveyance and transport them to the open country.

- 9 Pinhole leaks in cylinder and other containers may sometimes be temporarily stopped by tapered hardwood pegs or metal drift pins driven into the holes. First turn the container so that only gas is escaping. Use extreme care in driving the plug, because the wall area surrounding the hole may be thin and crumble. When this emergency measure is taken, empty the cylinder as quickly as possible.
- 10 At usual points of storage and use, make emergency preparation for disposing of chlorine from leaking containers. Chlorine may be absorbed in caustic soda, soda ash, or hydrated lime solution. Caustic soda is recommended because it absorbs chlorine most readily. The recommended proportions of alkali and water are given in Table 38-D.
- 11 Provide a suitable container to hold the solution in a convenient location. Pass the chlorine into the solution through an iron pipe or rubber hose weighted to hold it under the surface. Discuss the details of such preparations with the chlorine supplier.

Mechanical devices for plugging leaks in chlorine containers of various sizes up to tank cars, available from suppliers of chlorine, can be kept on hand. They are highly efficient if used by trained individuals.

Chlorine dioxide is used as a bleaching

agent and for odor control. It is liberated from acid solutions of sodium chlorite and from reactions of sulfur dioxide with sodium chlorate in acid solutions. Dangerous concentrations are detectable by its strong, unpleasant odor. Chlorine dioxide is a greenish-yellow gas, which decomposes in sunlight.

It is a strong respiratory and eye irritant. Acute inhalation exposures cause bronchitis and pulmonary edema, accompanied by delayed symptoms and slow recovery. Repeated acute exposures give symptoms including coughing, wheezing, respiratory distress, nasal discharge, and eye and throat irritation.

Chlorine trifluoride presents a serious hazard due to its oxidizing nature—upon contact with other combustible material it may cause a fire. It is also a known primary skin irritant—skin contact can cause inflammation. It is suggested that the safety precautions outlined in data sheets, or those recommended by the manufacturer of this material, be clearly understood before this compound is used. The literature reports that the pathologic findings were severe pulmonary irritation in dogs and rats exposed to this material compared with no remarkable pathology in the controls. The threshold limit value for this material was set on the basis of acute, subacute, and six-month chronic toxicity studies on laboratory animals.

Chloroacetic acids are similar to acetic acid in their general properties but are stronger. Their strength increases with increasing amounts of chlorine in the molecules. Trichloroacetic acid is nearly as strong as the mineral acids and is extremely corrosive to the skin.