

A photograph of a warehouse interior. In the foreground, several large white and yellow plastic storage tanks are visible. In the background, a large open bay door reveals an outdoor area with more industrial equipment and a person walking. The lighting is bright, and the overall scene is industrial.

CHEMICAL STORAGE RECOMMENDATIONS
FROM ASSMANN CORPORATION OF AMERICA

(\leq) 50% SODIUM HYDROXIDE STORAGE

Sodium Hydroxide, also known caustic soda, is an inorganic compound with formula NaOH.

The specific gravity of 50% NaOH is 1.5372. Sodium Hydroxide also has a very high freezing temperature and can begin solidifying around 45°F. It is highly soluble in water and readily absorbs moisture and carbon dioxide from the air. Sodium Hydroxide is a highly caustic base and alkali that decomposes proteins at ordinary ambient temperatures and may cause severe chemical burns. Sodium Hydroxide is used in many industries in the manufacture of pulp and paper,

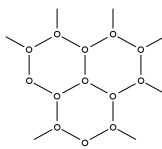
textiles, drinking water, soaps and detergents, and as a drain cleaner. When dissolved in water or neutralized with acid it creates substantial heat, which may ignite combustible materials. Sodium Hydroxide is generally used as a solid or solutions up to 50%. It is also used in processing cotton fabric, laundering and bleaching, metal cleaning and processing, oxide coating, electroplating, and electrolytic extracting. It is commonly present in commercial drain and oven cleaners. Sodium Hydroxide is an extremely important compound in our lives because it has so many uses.

ASSMANN POLYETHYLENE TANKS ARE NSF CERTIFIED

Assmann Corporation is the only manufacturer that has NSF certification for our Crosslink polyethylene in chemical storage applications. Other storage tank manufacturers do not carry the NSF certification on Crosslink polyethylene without the use of expensive liners, or they simply have potable water certification and do not have chemical certification. While selecting your storage tank, consider if NSF certification is required.



Assmann recommends that tanks be constructed of Crosslink Polyethylene. Assmann requires that tanks be rated for a minimum of 1.9 Specific Gravity. All connections below liquid level must prevent chemical from contacting the tank wall cross section. Since Sodium Hydroxide is often delivered hot, Crosslink Polyethylene should be the material of choice since it has a much higher softening point than conventional polyethylene. Assmann also recommends the use of our Heat Tracing and Insulation packages to keep the chemical above its freezing point. We offer 50°F, 80°F and 100°F heat tracing packages. Assmann will manufacture Sodium Hydroxide tanks up to 12,000 gallon capacity.



Assmann's Crosslink polyethylene has a much higher softening point than conventional linear polyethylene. This helps when your chemical can be delivered at elevated temperatures. Crosslink also has a much higher impact resistance.

SODIUM HYDROXIDE (≤)50%

| Resin | Specific Gravity | Fitting Material | Gasket Material | Hardware |
|-------|------------------|------------------|-----------------|---------------------|
| XLPE | 1.9 | PVC | EPDM | 316 Stainless Steel |



Venting polyethylene storage tanks is one of the most commonly overlooked steps but is a significant one. It is extremely important that polyethylene tanks are not over-pressurized or placed under vacuum. Adequate vent size will always be based on flow rates and delivery rates; however you can NEVER have too much venting. Over-pressurization and vacuum are the two leading causes of failure in a polyethylene storage tank. Vents should be sized a minimum of 2-3 times the largest inlet or outlet connection when tanks are filled by a tanker that uses air unloading techniques. Vents should be sized 1½-2 times the largest inlet or outlet nozzle when diaphragm pumps or non-pressurized methods are used for filling. Venting is critical when considering tank longevity. Polyethylene storage tanks must maintain atmospheric pressure. Under no circumstances should a tank be placed under pressure or vacuum conditions. Assmann Corporation offers a wide variety of venting options in multiple sizes and configurations.



Assmann offers manway covers specifically designed to help prevent tank over-pressurization. These manways are available in 16", 22", and 24" sizes depending on tank model. These manways should be used when tanks are pneumatically filled by tanker trucks or when there are high delivery flows. We also offer bolted and gasketed covers for indoor applications where hazardous fumes need to be restricted.

SECONDARY CONTAINMENT

Proper design of a storage system will include adequate containment in case of tank failure. Containment should be adequate in capacity and suitable for Sodium Hydroxide. Typically, containment basins are sized to a minimum of 110% of the primary tank's capacity. Assmann offers both secondary containment basins and double-walled tanks to meet containment requirements. End user should check local regulations to meet secondary containment requirements and ensure that all coatings and linings are compatible.





Flexible hoses or expansion joints must be used on all lower ½ sidewall connections. A lightweight isolation valve is permitted prior to the flexible joint. All piping must be supported independent of tank. Pipe supports must be installed after the flexible joint to allow the tank to expand and contract under normal service conditions. Polyethylene tanks expand and contract both laterally and vertically; expansion hose or joint must accommodate this expansion.



Assmann recommends the following fitting materials of construction; Materials should be PVC or 316 Stainless Steel for nozzles. Gaskets should be EPDM material. Metallic fittings and hardware should be 316 Stainless Steel. All connections below liquid level must prevent chemical from contacting the tank wall cross section. Bulkhead-style connections can be used on tanks 2,000 gallons and below. The sidewall connections of tanks above 2,000 gallons should be 316 Stainless Steel construction. (Flange-style fittings are not recommended). There are no restrictions on dome fittings.



Certificate Number:
DAS 90024930/39/Q Rev: 001

Quality: First and Forever

Assmann polyethylene bulk storage tanks are built the right way – even if that's not the easiest or fastest way. We're the only manufacturer who uses non-shielded molds with low temperature heat and gradual air cooling. The result is truly uniform wall thickness, unparalleled certified quality, and reliability that proves itself every time and across decades.

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