<15% Sodium Hypochlorite Storage

Chemical Storage Recommendations From Assmann Corporation Of America

Sodium Hypochlorite is a chemical compound with the formula NaClO. When dissolved in water it is commonly known as bleach or liquid bleach. Sodium Hypochlorite is used as a bleaching agent in the textile, detergent, and paper and pulp industries. Large quantities are also used as a disinfectant in water and wastewater treatment and sanitary equipment. In food processing, Sodium Hypochlorite is used to sanitize food preparation equipment, in fruit and vegetable processing, hog, beef and poultry production, and fish processing.

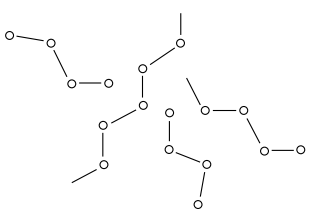
Sodium Hypochlorite has an approximate specific gravity of 1.160. Few materials of construction will withstand the highly reactive nature of Sodium Hypochlorite. Improper selection of those materials may result in damage to the handling system and contamination of the product. Often with Sodium Hypochlorite, two smaller, properly sized storage tanks used alternately to their lowest level before any new shipment is received are preferrable to one large storage tank. If possible, locate tank in a shaded area. If it is necessary to insulate the storage tank to keep the product from freezing or cool to reduce decomposition, a two-inch layer of polyurethane foam is an option available from Assmann Corporation. Tank manufacturers' products and processes vary considerably, therefore, selecting an appropriate storage vessel should entail a thorough evaluation. This document is to be used as a guideline for selecting the best options for your Assmann Polyethylene Tank.

ASSMANN POLYETHYLENE TANKS ARE NSF CERTIFIED

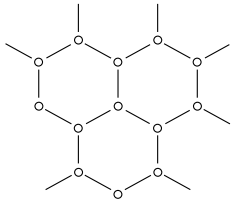
Assmann Corporation is the only manufacturer that has NSF certification for our Crosslink polyethylene in chemical storage applications. Other storage tank manufacturers do not carry the NSF certification on Crosslink polyethylene without the use of expensive liners, or they simply have potable water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

Certified to NSF/ANSI 61

Assmann recommends that tanks be constructed of Crosslink or Linear Polyethylene. Tanks should always 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. When practical, Sodium Hypochlorite should not exceed 100°F at delivery or during storage. Tank should be kept from direct sunlight to avoid excessive heat.



LINEAR



CROSSLINKED

SODIUM HYPOCHLORITE ≤15%

Resin	Specific Gravity	Fitting Material	Gasket Material	Hardware
XLPE or LLDPE	1.9	PVC	Viton	Titanium

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 tanks 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 Hypochlorite. Typically, containment basins are sized to a minimum of a 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 with Sodium Hypochlorite.

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 Titanium for nozzles. Gaskets should be Viton material. Metallic fittings and hardware should be Titanium. 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 Titanium construction. (Flange-style fittings are not recommended). There are no restrictions on dome fittings.

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In the past few years, we have been purchasing more and more tanks from Assmann because they are much higher quality.

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Odyssey Manufacturing Co.

Learn how Assmann storage tanks extend the lifespan of Sodium Hypochlorite

WHAT IS SODIUM HYPOCHLORITE?

Sodium Hypochlorite is a chemical compound with the formula NaClO. When dissolved in water, it's known as bleach. Generally, Sodium Hypochlorite is a bleaching agent, often used in the textile, detergent, and paper and pulp industries. Large quantities are often used as disinfectant in water, wastewater treatment, and sanitary equipment.

WHY DOES SODIUM HYPOCHLORITE BREAK DOWN?

Sodium Hypochlorite is an organic chemical, and all organic chemicals break down eventually. Because of its highly reactive nature, only few materials will withstand storing Sodium Hypochlorite over time.

Improper selection of those materials may result in damage to the handling system, and contamination to the product. Proper storage for Sodium Hypochlorite is essential for the storage tank, the operators, and the quality of the product.

SPECIFIC GRAVITY

Storage tanks should always be rated for a minimum of 1.9 Specific Gravity. When practical, Sodium Hypochlorite should not exceed 100 degrees Fahrenheit at delivery or during storage. Keeping a tank from direct sunlight can help regulate temperature.

Assmann Storage Tanks

UNIFORM WALL THICKNESS

Uniform wall thickness provides better structural integrity compared to other tanks on the market. As well, uniform wall thickness allows for a more solid dome which will reduce UV penetration into the tank, providing a longer lifespan for Sodium Hypochlorite.

AIR COOLING

Air cooling eliminates a process related stress in rotomolding, where water cooling shocks the plastic and causes an abrupt stop to the curing process.

Assmann is the only manufacturer who uses non-shielded molds with low temperature heat and gradual air cooling to ensure reliability that lasts.

SPECIFIC GRAVITY

Using a 1.9 rated tank gives additional wall thickness to help extend the lifespan of the storage tank. Assmann offers 1.9 rated storage tanks in either crosslink or linear polyethylene.

AVOIDING CROSS-SECTIONAL EXPOSURE

When storing Sodium Hypochlorite, avoiding cross sectional exposure is critical as it eliminates an area for the bleach to start its chemical attack. All metallic titanium fittings are the best solution to eliminate cross sectional exposure. Assmann offers custom and titanium fittings to prevent cross-sectional exposure.

VENTING

Under venting is one of the most common causes for tank failure. When filling and draining tanks, it's important to keep the tank from vacuum and pressure exposure. A vent two times the size of your largest inlet is required to avoid pressurization. Sometimes a larger vent is necessary when tanks are pneumatically filled. Assmann offers a variety of venting options in multiple sizes and configurations.

PNEUMATIC TANK FILLING

Though it's common to have bleach delivered by tanker trucks, when offloading into a chemical storage tank, do not allow your delivery drivers to purge their delivery lines into your tank. The sudden surge of air can cause rapid expansion of the tank. This can either cause immediate failure, or delayed damage to the tank. Do not allow your storage tank to be pressurized.

HOW TO AVOID TANK PROBLEMS

Keep tanks from direct sunlight whenever possible, oversize the vent connections, monitor chemical deliveries, eliminate cross section exposure, only install required nozzles (no need for spares and unnecessary ports), and insulate bleach tanks for additional life.

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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