Sodium Hypochlorite.

An aggressive oxidizer that presents a major storage challenge.

NaOCl

SODIUM HYPOCHLORITE

Commonly known as bleach, sodium hypochlorite is used in a variety of applications, particularly for the disinfection of drinking water and wastewater. When it comes to storage of this chemical, three factors must be considered:

- UV can degrade sodium hypochlorite, so special precautions must be taken to reduce this effect.

- Sodium hypochlorite typically contains transition metals such as nickel, iron and copper, which can buildup in a storage tank creating off-gassing.

- "Hypo" is a potent oxidizer, so all materials in the chemical's storage tank must be up to the task.

By addressing all three of these issues, this caustic chemical can be contained in a more secure and effective manner, with a tank system that meets NSF/ANSI Standard 61 for chemical storage.

NaOCl
SODIUM HYPOCHLORITE

The Poly Processing Hypo System

Poly Processing's Sodium Hypochlorite Storage Systems are specifically designed for containment of this challenging chemical. By using carbon black, white or gray compound XLPE resin, **UV degradation of the chemical can be dramatically reduced**. Mastic coatings and insulation are other ways to reduce UV's effect on the chemical.

To **prevent the potential buildup of transition metals in the tank**, Poly has developed the IMFO® system. This special design allows for full drainage of the tank, which can greatly increase the half-life of the chemical*.

*Natural tanks are available for indoor use.

Poly's OR-1000™ system is another key component of the Hypo System. OR-1000™ is the result of our exclusive rotomolding process, which creates a seamless bond between an inner surface of medium-density polyethylene and an outer surface of high-density crosslinked polyethylene. OR-1000™ allows **four times the antioxidant strength** of a normal polyethylene. In any application where OR-1000™ is used, all wetted surfaces – including covering the face of the IMFO® drain – are completely covered by the material, eliminating any opportunity for a chemical attack on the structural portion of the tank.

CHEMICAL	RESIN TYPE	SPECIFIC GRAVITY RATING	FITTING MATERIAL	GASKET MATERIAL	BOLT MATERIAL
Sodium Hypochlorite 9%–15%	XLPE with OR-1000™	1.9	PVC	EPDM/Viton®	Titanium

»» See our website for a complete Chemical Resistance Chart.

NOTE: To meet NSF-61 certification, use EPDM or Viton® GF.

NaOCl
SODIUM HYPOCHLORITE

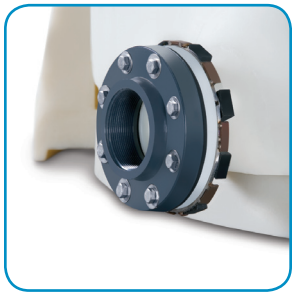
Tank Specifications

- **High-density crosslinked polyethylene (XLPE)** outer surface ensures maximum corrosion protection through molecular bonding.
- **OR-1000™** molecularly bonds XLPE with an antioxidant inner surface that resists the heavily oxidizing nature of sodium hypochlorite.
- **Integrally Molded Flanged Outlet (IMFO®)** constructed as part of tank ensures complete drainage. Non-IMFO® options also available
- **UV protection** for the chemical is achieved by using compounded black, white or gray resin or insulation coating to help maximize the half-life of the chemical for outdoor applications.

The above components are just a few of the many options offered by Poly Processing. See pages 38–63 for additional information and products, or talk to your Poly Processing representative.

Recommended System Components

Secondary containment: Recommended.
Alternative: PPC secondary containment basin of XLPE, or SAFE-Tank® if concrete containment is not available.



Fittings:
IMFO® to prevent transition metal buildup

NOTE: Do NOT use stainless steel or Alloy C-276 due to nickel content reaction.

Plumbing:
Requires flexible, Hypo-resistant connections [see page 54] to allow for lateral and vertical tank contraction and expansion, and to reduce vibration stress

Venting:
SAFE-Surge™ manway cover is recommended on pneumatically loaded systems to support tank longevity.

CAUTION! The life of a Sodium Hypochlorite Storage System is greatly affected by the quality of the chemical itself. Tank owners are cautioned to use high-quality sodium hypo with low iron, nickel and copper content, to avoid decomposition of the chemical and acceleration of the oxidization and degradation of the tank.

Technical Overview:
Sodium Hypochlorite Storage Tanks

TANK

IMFO® Vertical / Sloped Bottom of XLPE with OR-1000™:

- 1,000–15,500 gallons
- 1.9 spg rating

NOTE: 230–1,000 gallons do not require OR-1000™.

Non-IMFO® alternative*:

Standard Vertical Flat Bottom XLPE with OR-1000™:

- 1,000–15,500 gallons
- 1.9 spg rating

NOTE: 30–1,000 gallons do not require OR-1000™.

*Three-year warranty offered on Non-IMFO® alternatives.

SAFE-Tank® XLPE:

- 1,500–8,700 gallons
- 1.9 spg rating for primary tank with OR-1000™
- Spg ratings for secondary tanks ≥ 3,000 gallons may be equal to or 1 less spg than primary tank.
- All other tank sizes must equal primary tank spg rating.

NOTE: 55–1,000 gallons do not require OR-1000™.

Black, white or gray color or insulation with mastic coating required in outdoor applications to minimize bleach degradation and maximize chemical half-life.

SECONDARY CONTAINMENT

Recommend **SAFE-Tank®** secondary XLPE as shown above.

Non-SAFE-Tank® Alternatives:

- PPC secondary containment basin
- Other secondary containment suitable for sodium hypochlorite, of adequate size for use

FITTINGS

Sidewall: Recommend 3″ maximum B.O.S.S.™ fitting

Dome: No restrictions

PLUMBING TO THE TANK

- Required use of **flexible connections** with fittings on lower third of sidewall
  - » Allows for lateral and vertical expansion and contraction of the tank
  - » Reduces pump and piping vibration stress on the tank
- Expansion joints must meet the following minimum requirements:
  - » Axial Compression ≥ 0.67″
  - » Axial Extension ≥ 0.67″
  - » Lateral Deflection ≥ 0.51 "
  - » Angular Deflection ≥ 14°
  - » Torsional Rotation ≥ 4°

VENTING

See chart at www.polyprocessing.com/venting

FOUNDATION AND RESTRAINTS

- PPC IMFO® tank pad or smooth concrete, asphalt or steel foundation designed to accommodate IMFO®, SAFE-Tank® or vertical tank
- No restraint or ladder attachment bands circumscribing the tank are allowed. Cable restraint systems must pass cables over the top of the tank.

TEMPERATURE

Product should not exceed 100°F at delivery or during storage to reduce the decomposition of the chemical and maintain ASTM D1998 design parameters.

LID

SAFE-Surge™ manway cover for pneumatically loaded tanks; bolted manway cover for all other applications

OPTIONS

Restraint systems for wind and seismic, level gauges, ladders, heating pads, insulation, fume-tight manway cover, NSF-61 certification and engineering stamp

ADDITIONAL SPECIAL REQUIREMENTS:

On-site generation (.08%) max size : 4000 gallons without engineering review. **0.8% may require OR1000 system depending on the installation parameters.**

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