

HYDROCHLORIC ACID.

Controlling a chemical – and its fumes.



Also known as muriatic acid, hydrochloric acid is used to acidize petroleum wells, remove scales from boilers, aid in ore reduction and serve as a chemical intermediate, among other applications. This pungent liquid is a strong, highly corrosive acid, and it presents serious storage challenges.

- Hydrochloric acid has an extremely low pH, making it highly corrosive.
- The chemical creates toxic fumes that can deteriorate equipment – and these fumes can be fatal to employees. To control the chemical's fumes, the tank's venting system must be exact.
- Tank maintenance can also be an issue because of fuming. Entering the tank must be avoided at all costs, and part replacement must be minimized.

By creating a strong, corrosion-resistant tank system that ties into a scrubber system, all of these issues can be addressed.



HCL
HYDROCHLORICACID

The Poly Processing Hydrochloric Acid System

Storing a chemical as corrosive and fuming as HCL takes a truly specialized system. Poly Processing resolves these issues with its tank, venting and fittings solutions. An Integrally Molded Flanged Outlet, or IMFO®, allows for complete drainage of the tank, **which eliminates the need to enter the tank for cleaning.** This is imperative when dealing with such a strongly fuming chemical. The IMFO® design also reduces chances of having to replace parts, as the drainage system is part of the tank's mold.

Poly Processing's OR-1000™ surface is ideal for HCL storage. OR-1000™ has proven so effective in containing HCL that systems using it have a **5-year warranty.** These tanks bring you the strength of high-density crosslinked polyethylene with an **antioxidant surface.**

Poly also incorporates **airtight lids** and **customized scrubbers** to accommodate the fuming of HCL.

CHEMICAL	RESIN TYPE	SPECIFIC GRAVITY RATING	FITTING MATERIAL	GASKET MATERIAL	BOLT MATERIAL
Hydrochloric Acid ≤ 37%	XLPE with OR-1000™	1.9	PVC	EPDM	C-276

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

Tank Specifications



- **OR-1000™** binds the XLPE with an antioxidant inner surface, which is vital when storing such a corrosive chemical.
- **IMFO® construction** eliminates the need to enter the tank for cleaning, helping employees avoid HCL's toxic fumes.
- **High-density crosslinked polyethylene (XLPE)** ensures the strength of the tank.

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:
SAFE-Tank® is recommended where secondary containment is not available.



Fittings:
IMFO® system is recommended.



Fittings:
B.O.S.™ fitting is also recommended to prevent leaks.



Plumbing:
Requires flexible connections with fittings on lower third of sidewall to accommodate expansion and contraction and reduce vibration stress on the tank



Fume-tight manway cover:
17", 19" or 24" with EPDM gaskets



Scrubbers:
Individually designed to support the reduction of dangerous fumes into the environment

TECHNICAL OVERVIEW:

Hydrochloric Acid Storage Tanks



TANK

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

- 1,000–13,650 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™:

- 1,000–13,650 gallons
- 1.9 spg rating

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

SAFE-Tank® XLPE:

- 1,500–8,700 gallons
- 1.9 spg rating for primary tank with OR-1000™
- Spg ratings for secondary tanks \geq 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™.

SECONDARY CONTAINMENT

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

Non-SAFE-Tank® Alternatives:

- PPC secondary containment basin
- Other secondary containment suitable for hydrochloric acid, 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 \geq 1.5"
 - » Axial Extension \geq 0.625"
 - » Lateral Deflection \geq 0.750"
 - » Angular Deflection \geq 14°
 - » Torsional Rotation \geq 4°

VENTING

See chart on page 63.

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 maintain ASTM D1998 design parameters.

LID

Fume-tight manway cover to manage release of chemical gases

OPTIONS

Restraint systems for wind and seismic, level gauges, ladders, heating pads, insulation and engineering stamp