

# How To Select Your High-Performance Tank

## Tank Resin Selection Guide — Typical Properties and Applications<sup>1</sup>

Material RESIN	General Chemical Resistance	Stress-Crack <sup>2</sup> Resistance	Maximum Service Temperature	Brittleness Temperature	Impact Resistance <sup>3</sup>	Can Be Welded (Hot Gas)	Food-Grade Acceptability NATURAL, UNPIGMENTED	Color NATURAL, UNPIGMENTED
HDPE High Density Polyethylene	Very Good	Good	140°F 60°C	-94°F -70°C	Good	Yes	Yes <sup>4</sup> Natural and Black	White
XLPE Cross-Linked High Density Polyethylene	Very Good	Excellent	140°F 60°C	-180°F -118°C	Excellent	No	No	Yellow
PP Polypropylene	Very Good	Excellent	220°F 104°C	32°F 0°C	Fair	Yes	Yes <sup>4</sup>	Off-White
PVDF Polyvinylidene Fluoride	Excellent	Excellent	230°F 110°C	-40°F -40°C	Fair	Yes	Yes <sup>4</sup>	Off-White

## Tank Resin Selection Guide — (continued)

Material RESIN	ADVANTAGES AND APPLICATIONS			DO NOT USE WITH:
HDPE High Density Polyethylene	<ul style="list-style-type: none"> <li>•Hard, smooth finish</li> <li>•Good temperature resistance</li> <li>•Less expensive than stainless steel or fiberglass</li> </ul>	<ul style="list-style-type: none"> <li>•Storing caustics</li> <li>•Metal finishing</li> <li>•Storing organic and inorganic acids</li> <li>•Water treatment</li> </ul>	<ul style="list-style-type: none"> <li>•Dispensing lab and photo chemicals</li> <li>•Plating</li> <li>•Brine</li> </ul>	Strong oxidizing agents, aromatic hydrocarbons, halogenated-aliphatic hydrocarbons, liquefied petroleum gas, solvents
XLPE Cross-Linked High Density Polyethylene	<ul style="list-style-type: none"> <li>•Suitable for many corrosives not handled by FRP</li> <li>•Storing corrosives, including sulfuric, hydrochloric and hydrofluoric acids</li> </ul>	<ul style="list-style-type: none"> <li>•Storing sodium hypochlorite (See statement on page 38)</li> <li>•Storing organic and inorganic chemicals and compounds</li> </ul>	<ul style="list-style-type: none"> <li>•Chemical processing</li> <li>•Storing boiler treatment chemicals</li> <li>•Water and wastewater treatment</li> </ul>	Strong oxidizing agents, aromatic hydrocarbons, halogenated-aliphatic hydrocarbons, liquefied petroleum gas, solvents
PP Polypropylene	<ul style="list-style-type: none"> <li>•Good resistance to many organic chemicals</li> <li>•Less expensive than comparable stainless steel tanks</li> </ul>	<ul style="list-style-type: none"> <li>•Weldable PP fittings available</li> <li>•Plating and pickling lines</li> <li>•Sanitary process tanks</li> </ul>	<ul style="list-style-type: none"> <li>•Etch tanks for processing silicone wafers</li> </ul>	Strong oxidizing agents; aromatic or chlorinated hydrocarbons, sub-freezing temperatures
PVDF Polyvinylidene Fluoride	<ul style="list-style-type: none"> <li>•Superior resistance to inorganic acids, strong oxidizing agents and halogenated compounds</li> <li>•High-purity; does not contaminate process fluids</li> <li>•PVDF Schedule 80 threaded fittings available</li> </ul>	<ul style="list-style-type: none"> <li>•Etch tanks for processing silicone wafers</li> <li>•Ultra-pure water storage (not potable)</li> <li>•Precious metal recovery</li> <li>•Storing and processing halogenated compounds (i.e., bromine)</li> </ul>	<ul style="list-style-type: none"> <li>•Storing bleach and sulfuric acid for pulp and paper processing</li> <li>•Industrial battery casings</li> <li>•Insecticide manufacturing</li> </ul>	Ketones, esters and hot, concentrated caustics; nascent chlorine gas and concentrated caustic soda

### NOTES:

1 At low temperatures, protect all tanks from impact. Below 40°F/4°C, specify XLPE Tanks.

2 Cross-linked, high-density polyethylene is recommended for use with stress-cracking agents.

3 Brittleness temperature per ASTM test D-746. The impact resistance of most rotomolded tanks declines at freezing temperatures. Cross-linked, high-density polyethylene tanks are well suited for cold storage.

4 The resins used in Saint-Gobain Performance Plastics linear low- and high-density polyethylene and polypropylene tanks comply with 21 CFR Regulation 177.1520. Polyethylene meets all food-grade requirements; however, this product is restricted to contacting food only of the types identified in 21 CFR 176.170 Table 1, under categories 1, IV-B, VII-B, VIII, and under conditions of use B through H described in Table 2 of 21 CFR 176.170. Saint-Gobain rotomolded polypropylene complies with FDA 21 CFR 177.1520 (c) 3.1 regulation. The resin used in PVDF tanks complies with 21 CFR 177.2510.

5 Open-top tanks do not contain UV stabilizer; black is recommended for certain applications. Bulk tanks are UV-stabilized and may be used outdoors.