

How To Select Your High-Performance Tank

Tank Resin Selection Guide — Typical Properties and Applications¹

Material RESIN	General Chemical Resistance	Stress-Crack ² Resistance	Maximum Service Temperature	Brittleness Temperature	Impact Resistance ³	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 ⁴ 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 ⁴	Off-White
PVDF Polyvinylidene Fluoride	Excellent	Excellent	230°F 110°C	-40°F -40°C	Fair	Yes	Yes ⁴	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"> •Hard, smooth finish •Good temperature resistance •Less expensive than stainless steel or fiberglass 	<ul style="list-style-type: none"> •Storing caustics •Metal finishing •Storing organic and inorganic acids •Water treatment 	<ul style="list-style-type: none"> •Dispensing lab and photo chemicals •Plating •Brine 	Strong oxidizing agents, aromatic hydrocarbons, halogenated-aliphatic hydrocarbons, liquefied petroleum gas, solvents
XLPE Cross-Linked High Density Polyethylene	<ul style="list-style-type: none"> •Suitable for many corrosives not handled by FRP •Storing corrosives, including sulfuric, hydrochloric and hydrofluoric acids 	<ul style="list-style-type: none"> •Storing sodium hypochlorite (See statement on page 38) •Storing organic and inorganic chemicals and compounds 	<ul style="list-style-type: none"> •Chemical processing •Storing boiler treatment chemicals •Water and wastewater treatment 	Strong oxidizing agents, aromatic hydrocarbons, halogenated-aliphatic hydrocarbons, liquefied petroleum gas, solvents
PP Polypropylene	<ul style="list-style-type: none"> •Good resistance to many organic chemicals •Less expensive than comparable stainless steel tanks 	<ul style="list-style-type: none"> •Weldable PP fittings available •Plating and pickling lines •Sanitary process tanks 	<ul style="list-style-type: none"> •Etch tanks for processing silicone wafers 	Strong oxidizing agents; aromatic or chlorinated hydrocarbons, sub-freezing temperatures
PVDF Polyvinylidene Fluoride	<ul style="list-style-type: none"> •Superior resistance to inorganic acids, strong oxidizing agents and halogenated compounds •High-purity; does not contaminate process fluids •PVDF Schedule 80 threaded fittings available 	<ul style="list-style-type: none"> •Etch tanks for processing silicone wafers •Ultra-pure water storage (not potable) •Precious metal recovery •Storing and processing halogenated compounds (i.e., bromine) 	<ul style="list-style-type: none"> •Storing bleach and sulfuric acid for pulp and paper processing •Industrial battery casings •Insecticide manufacturing 	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.