

PLASTIC-CRAFT PVC

Polyvinyl Chloride — Type I (Rigid)

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One of the most widely used and cost-effective engineering plastics. Rigid PVC Type I combines excellent chemical resistance, self-extinguishing flame behavior, and good mechanical strength at a fraction of the cost of specialty polymers — the workhorse of chemical processing and plumbing.

STOCK AVAILABILITY

Sheets, rods, tubes, and angle in gray, white, and clear. Full range of standard thicknesses and diameters from stock.

KEY HIGHLIGHTS

Excellent chemical resistance
Self-extinguishing (V-0)
Very low cost
Easy to fabricate & weld
Good electrical insulation
FDA-compliant grades avail.

✓ The most economical choice for corrosion-resistant tanks, ducts & piping

COMMON APPLICATIONS

Chemical tanks & linings
Pipe & fittings
Fume hoods & ductwork
Electrical conduit
Water treatment systems
Plating line tanks
Signage & displays

GRADES AVAILABLE

Type I (gray, standard)
Type I (white)
Type I (clear)
Type II (higher impact)
CPVC (higher temp.)
Expanded / Foam PVC

MATERIAL PROPERTIES — TYPICAL VALUES (TYPE I, GRAY)

PROPERTY	ASTM	TYPICAL VALUE	UNITS
PHYSICAL			
Specific Gravity	D792	1.40	—
Water Absorption, 24h	D570	0.05	%
MECHANICAL			
Tensile Strength, Ultimate	D638	7,500	psi (52 MPa)
Tensile Modulus	D638	420,000	psi (2,900 MPa)
Elongation at Break	D638	40 – 80	%
Flexural Strength	D790	13,000	psi (90 MPa)
Flexural Modulus	D790	425,000	psi (2,930 MPa)
Compressive Strength	D695	9,500	psi (66 MPa)
Impact, Izod Notched	D256	0.7 – 1.0	ft-lb/in (37–53 J/m)
Hardness, Rockwell	D785	R115	—
Hardness, Shore D	D2240	D80	—
THERMAL			
Heat Deflection @ 264 psi	D648	158	°F (70°C)
Max Continuous Service	—	140	°F (60°C)
CTE (Linear)	D696	3.0 × 10 ⁻⁵	in/in/°F
Thermal Conductivity	C177	1.1	BTU-in/hr-ft²-°F
Glass Transition (Tg)	—	~180	°F (82°C)
ELECTRICAL			
Volume Resistivity	D257	> 10 ¹⁶	ohm-cm
Dielectric Strength	D149	425	V/mil (17 kV/mm)
Dielectric Constant, 1MHz	D150	3.0	—
Dissipation Factor, 1MHz	D150	0.016	—
FLAMMABILITY			
UL Flammability Rating	UL 94	V-0	—
Limiting Oxygen Index	D2863	43	%

PROCESSING / FABRICATION NOTES: Easy to machine, saw, drill & tap | Weldable with hot air & solvent cement | Thermoformable at 270–350°F | Do NOT overheat — releases HCl gas above 350°F | Use coolant when machining

CHEMICAL RESISTANCE: Excellent resistance to most acids, bases, salts, aliphatic hydrocarbons, and oxidizers. **AVOID:** ketones (MEK, acetone), esters, aromatic & chlorinated solvents, and THF — will dissolve or swell PVC.

Typical values; not to be used as specifications. Actual values may vary by grade, manufacturer, and processing conditions. Contact Plastic-Craft for grade-specific data.