

CHEMICAL RESISTANCE CHART

FDM 3D-PRINT FILAMENTS

For advisory and reference use:
Temperatures, exposure times, chemical concentrations
may affect material performance.
On-site testing is strongly advised before use.
Blank spaces indicate that no data is available.

✓ Excellent or Good Resistance
⚠ Partial or Limited Resistance
✗ No Resistance

	ABS	PA	PC	PEEK	PEI	PEN*	PETG	PLA	PMMA	PP	PPS	PPSU	PVDF*	TPU
Acetic acid (10%)	✓	⚠	✓	✓	✓	✓	✓	✓	⚠	✓	✓	✓	✓	⚠
Acetic acid (40%)	⚠	✗	✗	✓	✓	✓	✓	✗	✗	✓	✓	✓	✓	✗
Acetone	✗	✓	✗	✓	⚠	⚠	✗	✗	✗	✓	✓	✗	✗	⚠
Ammonium chloride (25%)				✓		✓	✓		✓		✓		⚠	✓
Benzene	✗	✓	✗	✓	✓	✓	⚠	⚠	✗	⚠	✓	⚠	✓	⚠
Cyclohexane	✓	✓	✗	✓	✓	✓	✓		⚠	✗	✓	✓	✓	✓
Cyclohexanol	✗	✓	✓	✓	✓	✓			✗	⚠	✓		✓	⚠
Calcium chloride (10%)				✓		✓	✓		✓	✓	✓		✓	✓
Chromic acid (10%)				✓	✓	✓	✓		⚠	⚠	✓		✓	⚠
Citric acid (10%)	✓	✓	✓	✓	✓	✓	✓	✓		✗	✓	✓	✓	✓
Dichloromethane	✗	✗	✗	✓	✓	⚠			✗	✓	✓		✓	✗
Diethyl ether		✓	✗	✓	✓	✓	✓		✗	⚠	✓	✓	✓	✓
Dimethyl sulfoxide (DMSO)	✗		✗	⚠	⚠	✗	✗	✗	✗	✓	✓		⚠	
Dimethyl formamide (DMF)	✗	✓	✗	✓	✗	⚠	✗	✗	✗	✓	✓		✗	
Ethanol	✓	✓	✓	✓	✓	✓	✓	⚠	⚠	✓	✓	✓	✓	✗
Ethyl acetate			✗	✓	⚠	✓	✓	✓	✗	✓	✓	✗	✗	✗
Ethylene diamine				✓	⚠	⚠			✗	✓	✓		✓	
Ethylene glycol			✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
Formaldehyde (40%)	✓			✓	✓	✓	✓		✓	✓	✓	✓	✓	✗
Formic acid (10%)	✓			✓	✓	✓	✓	✗	✓	✓	✓	✓	✓	⚠
Formic acid (30%)				✓	✗	⚠		✗	✗	✓	✓	✓	✓	✗
Gasoline	⚠	✓	✗	✓	✓	✓	✓	⚠	✗	✓	✓	✓	✓	✓
Glycerol				✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
Hexanes	✓			✓	✓	✓	✓		⚠	✓	✓	✓	✓	⚠
Hydrobromic acid (10%)		✗		✓	✓	✓	✓	✗		✓	✓		✓	
Hydrobromic acid (47%)		✗		⚠	✓	⚠	✗	✗		✓	✓		✓	
Hydrochloric acid (10%)		✗	✓	✓	✓	✓	✓	✗	⚠	⚠	⚠	✓	✓	⚠
Hydrochloric acid (37%)	✓	✗	⚠	✓	⚠	⚠	⚠	✗	✗	✓	⚠	⚠	✓	✗
Hydrofluoric acid (5%)		✗	✓	✓	✓	✓		✗	✓	✓	✗		✓	✗
Hydrofluoric acid (50%)	✓	✗	⚠	⚠	✓	✗		✗	✗	✓	✓		✓	✗
Hydrogen peroxide (30%)	⚠	✗	✓	✓	✓	✓	✓	✓	⚠	✓	⚠	✓	✓	✓
Isopropyl alcohol (IPA)	⚠	✓	⚠	✓	✓	✓	✓	⚠	✓	✓	⚠		✓	✗
Methanol	✗	✓		✓	✓	✓	✓		⚠	✓	✓	✓	✓	✗
Methyl ethyl ketone (MEK)	✗	✓	✗	✓	⚠	✓	⚠	✗	✗	✓	✓	✓	✗	⚠
Nitric acid (10%)	✗	✗	✓	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓	⚠
Nitric acid (20%)	✗	✗	⚠	✓	✓	✓	⚠	✗	✓	✓	✓	✓	✓	✗
Nitric acid (67%)	✓	✗	✗	✓	✓	✗	✗	✗	✗	✓	✓	✗	✓	✗
Phosphoric acid (10%)	✓	✗	✓	✓	✓	✓	✓	✗	✓	✓	⚠		✓	✓
Phosphoric acid (85%)	✓	✗	⚠	✓	⚠	✗	✗	✗	✗	✓	✓		⚠	✗
Potassium hydroxide (10%)	✓	✓	⚠	✓	✓	✓	✓	⚠	✓	✓	✓	✓	✓	✓
Potassium hydroxide (30%)	✓	✓	✗	✓	✓	✓	⚠	✗	✓	✓	✓	✓	⚠	⚠
Sulfuric acid (10%)	✗	✗	✓	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓	⚠
Sulfuric acid (30%)	✗	✗	✗	⚠	⚠	⚠	✗	✗	✓	✓	✓	✓	✓	✗
Sulfuric acid (>80%)		✗	✗	✗	✗	✗	✗	✗	✗	✓	✓	✗	✓	✗
Sodium acetate (40%)	✓			✓		✓			✓	✓	✗		✓	✓
Sodium chloride (sat.) (32%)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sodium bicarbonate (sat.)	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
Sodium hydroxide (10%)	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
Sodium hydroxide (30%)	✓	✓	⚠	✓	✓	✓	⚠		✓	✓	✓	✓	⚠	⚠
Sodium hypochlorite (bleach)		✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✗
Styrene (monomer)	✗	✓	✗			✓			✗	✓	✓		✓	
Tetrahydrofuran (THF)	✗	✓	✗	✓	⚠	⚠	✓		✗	✓	✓		⚠	⚠
Toluene	✓	✓	✗	✓	✓	✓	⚠	⚠	✗	✓	✓	✓	✓	⚠
Triethanolamine		✓	⚠	✓		⚠			✗	✗	✓	✓	⚠	
Vinyl chloride (monomer)					⚠	✓							✓	
Xylene	✗	✓	✗	✓	⚠	✓			✗	✓	✓		✓	✗

Solvent resistance was tested by submerging the specimen for 30 days in solvent at R.T.; ranking definition:
A: weight change < 1%, tensile strength retained > 95% to standard; B: weight change between 1~10%, tensile strength retained > 75%;
C: weight change > 10%, tensile strength retained < 75%; D: dissolved and softened within 120 hours.

*PEN and PVDF is tested using 3D-printed ASTM D638 specimen by FLXR Team.
For latest rev: www.flxr.engineering