

GRP Grating Chemical Resistance

ZeAllgrate - izeall.com

Working chemical tolerance of the three principal GRP resin systems - isophthalic (Iso) polyester, vinyl ester (VE) and phenolic - graded against common process chemicals with service temperatures. This is a working guide for quotation; final resin selection is confirmed against certified chemical resistance datasheets per application.

Resin Working Temperatures

Resin System	Service Temp	Best For
Iso polyester (isophthalic)	60-70 C	General chemical exposure, cost-effective
Vinyl ester	80-90 C	Strong acids, alkalis, solvents
Phenolic	120-150 C	Fire-critical, low-smoke service

Chemical Resistance by Resin

Chemical / Environment	Iso Polyester GRP	Vinyl Ester GRP	Phenolic GRP
Sulphuric acid (dilute)	Satisfactory to 40 C	Satisfactory to 90 C	Satisfactory to 120 C
Hydrochloric acid (dilute)	Satisfactory to 35 C	Satisfactory to 80 C	Satisfactory to 110 C
Sodium hydroxide / caustic	Limited < 20%	Satisfactory to 60 C	Satisfactory to 100 C
Organic solvents	Not recommended	Limited, verify by test	Satisfactory (low smoke)
Salt water / marine spray	Satisfactory	Superior	Satisfactory
Fire / flame exposure	Flame-retardant grade	Flame-retardant grade	Best (low smoke, 120-150 C)

Rating Legend

Rating	Meaning
C - Continuous	Acceptable for continuous contact at listed concentration/temperature
S - Frequent splash	Acceptable for frequent splashes and spills (not immersion)
I - Infrequent splash	Acceptable only for infrequent splashes, cleaned immediately
N - Not recommended	Do not use this resin for this chemical under listed conditions
T - Test required	Consult the factory; test coupon on your exact condition required

Hard temperature ceiling: 180 F (82 C) for vinyl ester, 150 F (66 C) for iso polyester. For solvents, oxidizers, ClO₂, NaOCl or high-temperature service above 180 F, specify the custom vinyl ester (up to 400 F / 204 C) with factory confirmation.

Data per ZeAllgrate published technical tables (izeall.com). Working guide - confirm with engineering before specification.