

Chemical resistance properties of polymer flooring technologies

A guide to the chemical resistance of resin coatings

Chemicals, cleaning agents and other ingredients will have a different effect on polymer flooring materials, depending on their formulation as well as the type and degree of exposure.

This guide to the chemical resistance of resin flooring technologies demonstrates the typical response for a range of common irritants on various floor coatings, dependent on their concentration and temperature. Each coating type has been determined to exhibit a different level of resistance, as outlined below.

Excellent	No physical signs of attack after long term contact
MediumTerm	Unaffected after 1 month ontact but may begin to fail thereafter
ShortTerm	Unaffected after 24 hours contact but may begin to fail thereafter
Not Resistant	Attacked on contact or within 2–3 hours

please note...

This document serves as a tool to aid in choosing the most suitable product for expected chemical exposure conditions. The information presented is derived from laboratory immersion tests and practical observations. All laboratory samples underwent a curing period of at least 10 days at 20°C before testing. It is important to note that certain chemicals may discolour the surface of the resin flooring product without compromising its hardness, especially in the presence of mechanical abrasion. Adhering to good housekeeping practices is always recommended.

Chemical		%	Solvent free epoxy coating	Solvent free epoxy screed	Water based epoxy coating	Polyurethane coating	Polyurethane screed	Flexible polyurethane coatings
A	Acetaldehyde							
	Acetic acid @ 20°C	5						
	Acetic acid @ 20°C	10						
	Acetic acid @ 60°C	10						
	Acetic acid @ 20°C	20						
	Acetic acid @ 20°C	30						
	Acetic acid @ 60°C	30						
	Acetic anhydride							
	Acetone							
	Acetonitrile							
	Acetyl chloride							
	Acrolein							
	Acrylic acid @ 20°C							
	Acrylic methylester							
	Acrylonitrile							
	Adiponitrile							
	Allyl alcohol							
	Allyl chloride							
	Aluminium sulphate @ 20°C	30						
	Amines							
	Ammonia 0.880 @ 20°C							
	Ammonia (aqueous solution) @ 20°C	40						
	Ammonium chloride @ 20°C	30						
	Ammonium nitrate @ 20°C	30						
	Amyl acetate (mixed isomers)							
	Aniline							
	AromasolH							
B	Beer							
	Benzene							
	Benzyl alcohol							
	Benzyl chloride							
	Blood							
	Boric acid @ 20°C	20						
	Brine	30						
	Butanol							

Excellent

Medium Term

Short Term

Not Resistant

Chemical		%	Solvent free epoxy coating	Solvent free epoxy screed	Water based epoxy coating	Polyurethane coating	Polyurethane screed	Flexible polyurethane coatings
Butylacetate								
Butylacrylate								
Butyl benzyl phthalate								
Butylether								
Butyricacid								
Butyrolactone								
C	Calcium carbonate solution	Saturated						
	Calcium hydroxide suspension	30						
	Caprolactam @ 20°C	20						
	Caprolactam @ 20°C	30						
	Caprolactam @ 20°C	50						
	Caprolactam @ 20°C	100						
	Carbon tetrachloride							
	Castor oil							
	Chicken fats							
	Chloride of lime solution @ 20°C	1						
	Chlorinated paraffin							
	Chlorobenzene							
	Chloroform							
	Chromic acid @ 20°C	1						
	Chromic acid @ 20°C	5						
	Chromic acid @ 20°C	10						
	Chromic acid @ 20°C	30						
	Ciopen A30							
	Ciopen A60							
	Citric acid @ 20°C	10						
	Citric acid @ 20°C	30						
	Cleaning agent for heavy duty vehicles	10						
	Cleaning agent for heavy duty vehicles Concentrate							
	Cleaning petrol							
	Coconut fatty acid							
	Coconut oil							
	Cod liver oil							
	Common salt solution @ 20°C	5						
	Common salt solution	Saturated						

Chemical		%	Solvent free epoxy coating	Solvent free epoxy screed	Water based epoxy coating	Polyurethane coating	Polyurethane screed	Flexible polyurethane coatings
Copper sulphate solution @ 20°C			30					
Cotton seed oil								
Creosote								
Cresylic acid								
Crotonaldehyde								
Crude oil								
Cyclohexane								
Cyclohexanol								
Cyclohexanone								
D	Decanol							
	Deionized water							
	Detergent solution		3					
	Diacetone alcohol							
	Dibutyl phthalate							
	Dichlorobenzene							
	Dichloroethane							
	Dichloroethylene							
	Dichloromethane							
	Dichloropropane							
	Dicyclopentadiene							
	Diesel oil							
	Diethanolamine							
	Diethylamine (aqueous solution) @ 20°C		50					
	Diethylamine (aqueous solution) @ 20°C		60					
	Diethylene glycol							
	Diethylene glycol monobutyl ether							
	Diethylene glycol monoethyl ether							
	Diethylene glycol monomethyl ether							
	Diethylene triamine @ 20°C		100					
	Diethylether							
	Di-isobutyl ketone							
	Dimethylamine (aqueous solution) @ 20°C		40					
	Dimethylamine (aqueous solution) @ 20°C		50					
	2-Diethylaminoethanol							
	Dimethyl formamide (DMF)							

Chemical		%	Solvent free epoxy coating	Solvent free epoxy screed	Water based epoxy coating	Polyurethane coating	Polyurethane screed	Flexible polyurethane coatings
Di-n-butyl phthalate								
Di-octyl phthalate								
Dioxane								
Dipentene								
Di-propylene glycol								
Dishwashing detergent		3						
Dutrex 217 UK								
E	Electrocoating							
	Epichlorohydrin							
	Ethanol @ 20°C	10						
	Ethanol @ 20°C	15						
	Ethanol @ 20°C	70						
	Ethanol @ 20°C	96						
	Ethanolamine							
	Ethyl acetate							
	Ethyl acrylate							
	Ethyl benzene							
	Ethylene diamine							
	Ethyl glycol							
	Ethylene glycol							
	Ethyl glycol acetate							
	Ethylene glycol monobutyl ether							
	Ethylene glycol monobutyl ether acetate							
	Ethylene glycol monoethyl ether							
	Ethylene glycol monoethyl ether acetate							
	Ethylene glycol monomethyl ether							
	2-Ethyl hexanol							
	2-Ethyl hexyl acrylate							
	Ethylene amine							
F	Fish oil							
	Formaldehyde @ 20°C	40						
	Formaldehyde @ 20°C	100						
	Formic acid @ 20°C	5						
	Formic acid @ 20°C	10						

Chemical		%	Solvent free epoxy coating	Solvent free epoxy screed	Water based epoxy coating	Polyurethane coating	Polyurethane screed	Flexible polyurethane coatings
	Formic acid @ 20°C	20						
	Formic acid @ 20°C	30						
	Formic acid @ 20°C	98						
	Furfural							
	Furfuryl alcohol							
G	Glycerol							
	Grape juice							
	Groundnut oil							
H	Heptane							
	Hexane							
	Hexylene glycol							
	Hydrazine hydrate							
	Hydrochloric acid @ 20°C	5						
	Hydrochloric acid @ 20°C	10						
	Hydrochloric acid @ 20°C	36						
	Hydrofluoric acid @ 20°C	20						
	Hydrogen peroxide @ 20°C	3						
	Hydrogen peroxide @ 20°C	30						
	Hydrogen sulphide							
I	Iso-amyl acetate							
	Iso-amyl alcohol							
	Iso-butanol							
	Iso-butyl acetate							
	Iso-butyl aldehyde							
	Iso-octanol							
	Iso-pentane							
	Iso-phorone							
	Iso-phorone diamine @ 20°C							
	Isoprene							
	Iso-propanol							
J	Jet fuel							
K	Kerosene							
L	Lactic acid @ 20°C	2						
	Lactic acid @ 20°C	5						
	Lactic acid @ 20°C	30						

Chemical		%	Solvent free epoxy coating	Solvent free epoxy screed	Water based epoxy coating	Polyurethane coating	Polyurethane screed	Flexible polyurethane coatings
M	Lactic acid @ 20°C	90						
	Lard							
	Lime juice							
	Linseed fatty acid							
	Linseed oil							
	Maleic acid @ 20°C	30						
	Methanol							
	Methyl acetate							
	Methyl acrylate							
	Methylene chloride							
	Meta cresol							
	Methyl ethyl ketone (MEK)							
	Methyl glycol acetate							
	Methyl isobutyl ketone (MIBK)							
	Methyl methacrylate							
	N-methyl pyrrolidone							
	Milk							
	Mineral oil							
	Molasses							
N	Morpholine							
	N-amino ethyl piperazine @ 20°C							
	Naphtha (petroleum)							
	Naphtha (solvent)							
	Naphthenic acid							
	N-butanol							
	N-butyl acetate							
	N-heptanol							
	N-hexanol							
	Nitric acid @ 20°C	1						
	Nitric acid @ 20°C	3						
	Nitric acid @ 20°C	5						
	Nitric acid @ 20°C	10						
	Nitric acid @ 20°C	30						
	Nitric acid @ 20°C	69						
	Nitrobenzene							

Chemical

			Solvent free epoxy coating	Solvent free epoxy screed	Water based epoxy coating	Polyurethane coating	Polyurethane screed	Flexible polyurethane coatings
	Nitro-ethane							
	Nitro-propane (mixed isomers)							
	Nonanol							
	Nonyl phenol							
	N-pentane							
O	Octanol							
	Oleic acid @ 20°C	100						
	Olive oil							
	Ortho cresol							
	Orthophosphoric acid @ 20°C	85						
	Oxalic acid @ 20°C	2						
	Oxalic acid @ 20°C	10						
P	Palm kernel oil							
	Para cresol (aqueous)							
	Paraffin							
	Paraffin wax							
	Pentane (mixed isomers)							
	Perchlorethylene							
	Perchloric acid @ 20°C	30						
	Petrol							
	Petroleum ether							
	Phenol							
	Phosphoric acid @ 20°C	5						
	Phosphoric acid @ 20°C	10						
	Phosphoric acid @ 20°C	20						
	Phosphoric acid @ 20°C	50						
	Photographic developer solution	10						
	Pine oil							
	Polypropylene glycol							
	Potassium dichromate @ 20°C	20						
	Potassium hydroxide solution @ 20°C	5						
	Potassium hydroxide solution @ 20°C	10						
	Potassium hydroxide solution @ 100°C	10						
	Potassium hydroxide solution @ 20°C	20						
	Potassium hydroxide solution @ 20°C	50						

Chemical		%	Solvent free epoxy coating	Solvent free epoxy screed	Water based epoxy coating	Polyurethane coating	Polyurethane screed	Flexible polyurethane coatings
S	Pyridine							
	Pyridine bases							
	Seawater							
	Sec-butanol							
	Shell rotella oil							
	Shellsol A							
	ShellsolT							
	Silicone oil							
	Skydrol A500							
	Soap solution							
	Soda solution (saturated)							
	Soda solution (dilute)							
	Sodium chloride	Saturated						
	Sodium dichromate aqueous solution @ 20°C	33						
	Sodium bicarbonate (aqueous)							
	Sodium hydroxide @ 20°C	5						
	Sodium hydroxide @ 20°C	20						
	Sodium hydroxide @ 20°C	50						
	Sodium hydroxide @ 60°C	50						
	Sodiumhypochlorite solution 15% <small>(available cl @ 20°C)</small>							
	Sodium nitrate @ 20°C	20						
	Solvesso 150							
	Soya bean oil							
	Stannic chloride							
	Styrene							
	Succinic acid	10						
	Sugar solution @ 20°C	30						
	Sulphuric acid @ 20°C	5						
	Sulphuric acid @ 20°C	10						
	Sulphuric acid @ 100°C	10						
	Sulphuric acid @ 20°C	20						
	Sulphuric acid @ 20°C	30						
	Sulphuric acid @ 20°C	50						
	Sulphuric acid @ 20°C	98						
	Sunflower seed oil							

Chemical		%	Solvent free epoxy coating	Solvent free epoxy screed	Water based epoxy coating	Polyurethane coating	Polyurethane screed	Flexible polyurethane coatings
T	Tall oil							
	Tall oil fatty acid							
	Tallow							
	Tap water							
	Tartaric acid @ 20°C	5						
	Tartar solution @ 20°C	5						
	Teepol							
	Tert-butanol							
	Tetrachloroethylene							
	Tetrahydrofuran (THF)							
	Tetrahydronaphthalene							
	Titanium tetrachloride							
	Toluene							
	Toluene-di-isocyanate							
	Tributyl citrate							
	1,1,1 – Trichloroethane							
	Trichloroethylene							
	Tri cresyl phosphate							
	Triethanolamine							
	Triethylene glycol							
	Triethylene cetramine							
	Triolyl phosphate							
	Trixylyl phosphate							
U	Urea @ 20°C	30						
V	Vegetable juice							
W	Water @ 20°C500%							
	Water, distilled @ 100°C							
	Whisky							
	White spirit							
	Wine							
X	Xylene (mixedsomers)							



brix