



Chemical Resistance

of RINOL Industrial Flooring Systems

RINOL INDUSTRIAL FLOORING SYSTEMS – A GUIDE TO CHEMICAL RESISTANCE

Introduction

This guide is intended to help specifiers and users of RINOL resin based industrial flooring systems to select the optimum product for the chemical exposure conditions likely to be encountered.

The recommendations in the guide are based both on laboratory tests and practical experience gained since RINOL was founded in 1956.

Three classes of resistance are used:

- R** resistant (assuming that reasonable standards of cleanliness are maintained).
- L** limited resistance (infrequent spillages are tolerated if the floor is washed down or the spillage evaporates quickly)
- NR** not resistant (floor is severely attacked rapidly even by small spillages).

When using the guide the following factors should be considered:

The recommendations are for floors only:

They do not apply to RINOL systems used as linings and subject to total or partial immersion. In such cases resistance will be more limited and RINOL should be consulted before any RINOL system is specified.

Discoloration and staining:

Many chemicals in common use will stain or discolour the surface of resin floors without causing any deterioration or reduction of properties. Examples are dilute nitric acid and sodium hypochlorite used in food processing plants and chromic acid widely used in metal plating processes.

Solvents:

A number of aggressive solvents will attack resin floors on long-term exposure but are so volatile that spillages evaporate before any damage to the floor occurs. A typical example is methylene chloride. In these cases a classification of limited resistance is sufficient to provide a serviceable floor.

Secondary containment:

When used in secondary containment areas a classification of limited resistance is in most cases sufficient to provide protection of the underlying substrate for 72 hours. If there is any doubt contact RINOL.

Maximum service temperature:

All RINOL industrial flooring systems have a maximum service temperature which is specified in the individual System Data Sheet. This temperature limit must be respected for all but the most minor spillages.

CHEMICAL	CONCENTRATION	TEMP	RINOL	RINOL	RINOL	RINOL	RINOL	RINOL	RINOL
	%	°C	STANDARD	ALLROUNDER & HEAVYDUTY	SAFETY	SOLID	CONDUCTIVE & ETEC	CONCRETE STANDARD & HEAVYDUTY	VINYL ESTER
Acetaldehyde	100	20	NR	NR	NR	NR	NR	R	R
Acetic acid	10	20	R	R	R	R	R	R	R
Acetic acid	10	80	NR	NR	NR	NR	NR	R	R
Acetic acid	20	20	L	L	L	L	L	R	R
Acetic acid	20	80	NR	NR	NR	NR	NR	L	R
Acetic acid	60	20	NR	NR	NR	NR	NR	R	R
Acetic acid	100	20	NR	NR	NR	NR	NR	L	R
Acetic anhydride	-	20	L	L	L	L	L	L	R
Acetone	100	20	NR	NR	NR	NR	NR	L	R
Acetonitrile	100	20	NR	NR	NR	NR	NR	L	R
Acrylic acid	100	20	NR	NR	NR	NR	NR	R	R
Adipic acid	all	20	R	R	R	R	R	R	R
Aluminium chloride	all	20	R	R	R	R	R	R	R
Aluminium sulphate	all	20	R	R	R	R	R	R	R
Ammonia (ammonium hydroxide)	10	20	R	R	R	R	R	R	R
Ammonia (ammonium hydroxide)	25	20	L	L	L	L	L	R	R
Ammonium nitrate	all	20	R	R	R	R	R	R	R
Ammonium phosphate	all	20	R	R	R	R	R	R	R
Ammonium sulphate	all	20	R	R	R	R	R	R	R
Amyl acetate	100	20	L	L	L	L	L	R	R
Aniline	100	20	L	L	L	L	L	R	R
Antifreeze (ethylene glycol)	100	20	R	R	R	R	R	R	R
Apple juice	-	20	R	R	R	R	R	R	R
Barium chloride	all	20	R	R	R	R	R	R	R
Barium sulphate	all	20	R	R	R	R	R	R	R
Beer	-	20	R	R	R	R	R	R	R
Benzaldehyde	100	20	NR	NR	NR	NR	NR	L	R
Benzene	100	20	NR	NR	NR	NR	NR	L	R
Benzoic acid	100	20	L	L	L	L	L	R	R
Benzoyl chloride	100	20	NR	NR	NR	NR	NR	R	L
Benzyl alcohol	100	20	R	R	R	R	R	R	R
Blood	-	20	R	R	R	R	R	R	R
Boric acid	all	20	R	R	R	R	R	R	R
Brake fluid	-	20	R	R	R	R	R	R	R
Brine - chlorinated	all	80	NR	NR	NR	NR	NR	L	R
Brine (sodium chloride)	all	20	R	R	R	R	R	R	R
Butanol	100	20	R	R	R	R	R	R	R
Butter	-	20	R	R	R	R	R	R	R
Butyl acetate	100	20	L	L	L	L	L	R	R
Butyric acid	100	20	R	R	R	R	R	R	R

CHEMICAL	CONCENTRATION	TEMP	RINOL	RINOL	RINOL	RINOL	RINOL	RINOL	RINOL
	%	°C	STANDARD	ALLROUNDER & HEAVYDUTY	SAFETY	SOLID	CONDUCTIVE & ETEC	CONCRETE STANDARD & HEAVYDUTY	VINYL ESTER
Calcium chloride	all	20	R	R	R	R	R	R	R
Calcium hydroxide	all	20	R	R	R	R	R	R	R
Calcium hypochlorite	all	20	R	R	R	R	R	R	R
Capric (decanoic) acid	100	20	R	R	R	R	R	R	R
Caprolactam	100	20	NR	NR	NR	NR	NR	R	R
Caprylic (octanoic) acid	100	20	R	R	R	R	R	R	R
Carbon disulphide	100	20	NR	NR	NR	NR	NR	L	L
Carbon tetrachloride	100	20	L	L	R	R	L	R	R
Chloroacetic acid	10	20	R	R	R	R	R	R	R
Chloroacetic acid	50	20	NR	NR	NR	NR	NR	L	R
Chloroform	100	20	NR	NR	NR	NR	NR	L	L
Chromic acid	20	20	L	L	L	L	L	R	R
Cinnamaldehyde	100	20	L	L	L	L	L	R	R
Citric acid	20	20	R	R	R	R	R	R	R
Citric acid	20	60	L	L	L	L	L	R	R
Citric acid	50	20	L	L	L	L	L	R	R
Copper(II) sulphate	all	20	R	R	R	R	R	R	R
Cyclohexane	100	20	R	R	L	L	R	R	R
Cyclohexanone	100	20	NR	NR	NR	NR	NR	R	R
Detergents - acidic	all	20	R	R	R	R	R	R	R
Detergents - acidic	all	80	NR	NR	NR	NR	NR	R	R
Detergents - alkaline	all	20	R	R	R	R	R	R	R
Detergents - alkaline	all	80	NR	NR	NR	NR	NR	R	R
Dibutyl phthalate	100	20	R	R	R	R	R	R	R
Dichlorobenzene	100	20	NR	NR	NR	NR	NR	L	R
Diethyl ether	100	20	R	R	L	L	R	R	R
Diethylene glycol	100	20	R	R	R	R	R	R	R
Di-isopropylamine	100	20	R	R	R	R	R	R	R
Dimethylformamide	100	20	NR	NR	NR	NR	NR	NR	R
Dioctyl phthalate	100	20	R	R	R	R	R	R	R
Ethanol	100	20	L	L	NR	NR	L	R	R
Ethyl acetate	100	20	NR	NR	NR	NR	NR	L	R
Ethyl glycol acetate	100	20	NR	NR	NR	NR	NR	R	R
Ethylene dichloride	100	20	NR	NR	NR	NR	NR	L	L
Ethylene glycol	100	20	R	R	R	R	R	R	R

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	%	°C	STANDARD	ALLROUNDER & HEAVYDUTY	SAFETY	SOLID	CONDUCTIVE & ETEC	CRETE STANDARD & HEAVYDUTY	VINYL ESTER
Fats - animal and vegetable	-	20	R	R	R	R	R	R	R
Fats - animal and vegetable	-	80	NR	NR	NR	NR	NR	R	R
Fish oils	-	20	R	R	R	R	R	R	R
Fish oils	-	80	NR	NR	NR	NR	NR	R	R
Fluorosilicic acid	all	20	R	R	R	R	R	R	R
Formaldehyde (formalin)	37	20	R	R	R	R	R	R	R
Formic acid	20	20	L	L	NR	NR	L	R	R
Formic acid	90	20	NR	NR	NR	NR	NR	L	R
Fumaric acid	all	20	R	R	R	R	R	R	R
Gasoline	-	20	R	R	L	L	R	R	R
Glucose	all	20	R	R	R	R	R	R	R
Glycerol	100	20	R	R	R	R	R	R	R
Glycolic acid	100	20	R	R	R	R	R	R	R
Hexane	100	20	R	R	R	R	R	R	R
Hydrobromic acid	48	20	L	L	L	L	L	R	R
Hydrochloric acid	5	20	R	R	R	R	R	R	R
Hydrochloric acid	15	20	R	R	R	R	R	R	R
Hydrochloric acid	15	60	NR	NR	NR	NR	NR	R	R
Hydrochloric acid	37	20	R	R	R	R	R	R	R
Hydrochloric acid	37	60	NR	NR	NR	NR	NR	L	R
Hydrofluoric acid	10	20	L	L	L	L	L	R	R
Hydrofluoric acid	40	20	NR	NR	NR	NR	NR	L	L
Hydrogen peroxide	35	20	R	R	R	R	R	R	R
Iron(II) sulphate	all	20	R	R	R	R	R	R	R
Iron(III) chloride	all	20	R	R	R	R	R	R	R
Iso-butanol	100	20	R	R	R	R	R	R	R
Iso-octane	100	20	R	R	R	R	R	R	R
Isopropanol	100	20	R	R	L	L	R	R	R
Jet fuel - IP4	-	20	R	R	R	R	R	R	R
Kerosene	-	20	R	R	R	R	R	R	R
Lactic acid	5	20	R	R	R	R	R	R	R
Lactic acid	5	60	NR	NR	NR	NR	NR	R	R
Lactic acid	90	20	L	L	L	L	L	R	R
Lauric acid	-	60	NR	NR	NR	NR	NR	R	R
Lauric acid	-	80	NR	NR	NR	NR	NR	R	R

CHEMICAL	CONCENTRATION	TEMP	RINOL	RINOL	RINOL	RINOL	RINOL	RINOL	RINOL
	%	°C	STANDARD	ALLROUNDER & HEAVYDUTY	SAFETY	SOLID	CONDUCTIVE & ETEC	CRETE STANDARD & HEAVYDUTY	VINYL ESTER
Magnesium nitrate	all	20	R	R	R	R	R	R	R
Maleic anhydride	100	20	R	R	R	R	R	R	R
Malic acid	5	20	R	R	R	R	R	R	R
Methacrylic acid	100	20	NR	NR	NR	NR	NR	R	R
Methanol	100	20	NR	NR	NR	NR	NR	R	R
Methyl ethyl ketone	100	20	NR	NR	NR	NR	NR	L	R
Methyl ethyl ketone peroxide	100	20	R	R	R	R	R	R	R
Methyl isobutyl ketone	100	20	R	R	L	L	R	R	R
Methyl methacrylate	100	20	NR	NR	NR	NR	NR	R	R
Methylated spirits	-	20	L	L	NR	NR	L	R	R
Methylene chloride	100	20	NR	NR	NR	NR	NR	L	L
Milk	-	20	R	R	R	R	R	R	R
Monochlorobenzene	100	20	L	L	L	L	L	R	R
N -Methyl pyrrolidone	100	20	NR	NR	NR	NR	NR	NR	R
<i>N,N</i> -Dimethyl acetamide	100	20	NR	NR	NR	NR	NR	NR	R
Nitric acid	5	20	R	R	R	R	R	R	R
Nitric acid	25	20	R	R	R	R	R	R	R
Nitric acid	50	20	NR	NR	L	L	NR	R	R
Nitric acid	65	20	NR	NR	NR	NR	NR	L	R
Nitropropane	100	20	L	L	L	L	L	L	R
o -Cresol	100	20	L	L	L	L	L	L	R
Oil - crude	-	20	R	R	R	R	R	R	R
Oil - diesel	-	20	R	R	R	R	R	R	R
Oil - fuel	-	20	R	R	R	R	R	R	R
Oil - lubricating	-	20	R	R	R	R	R	R	R
Oil - mineral	-	20	R	R	R	R	R	R	R
Oil - motor	-	20	R	R	R	R	R	R	R
Oil - silicone	-	20	R	R	R	R	R	R	R
Oleic acid	100	20	R	R	R	R	R	R	R
Oleic acid	100	80	NR	NR	NR	NR	NR	R	R
Orange juice	-	20	R	R	R	R	R	R	R
Oxalic acid	5	20	R	R	L	L	R	R	R

CHEMICAL	CONCENTRATION	TEMP	RINOL	RINOL	RINOL	RINOL	RINOL	RINOLCRETE	RINOL
	%	°C	STANDARD	ALLROUNDER & HEAVYDUTY	SAFETY	SOLID	CONDUCTIVE & ETEC	STANDARD & HEAVYDUTY	VINYL ESTER
Palmitic acid	100	20	R	R	R	R	R	R	R
Perchloric acid	70	20	R	R	R	R	R	R	R
Phenol	5	20	L	L	L	L	L	L	R
Phosphoric acid	5	20	R	R	R	R	R	R	R
Phosphoric acid	5	80	NR	NR	NR	NR	NR	R	R
Phosphoric acid	50	20	R	R	R	R	R	R	R
Phosphoric acid	80	20	R	R	R	R	R	R	R
Potassium aluminium sulphate (alum)	all	20	R	R	R	R	R	R	R
Potassium carbonate	all	20	R	R	R	R	R	R	R
Potassium dichromate	all	20	R	R	R	R	R	R	R
Potassium hydroxide	10	20	R	R	R	R	R	R	R
Potassium hydroxide	10	80	NR	NR	NR	NR	NR	R	R
Potassium hydroxide	45	20	R	R	R	R	R	R	R
Potassium nitrate	all	20	R	R	R	R	R	R	R
Potassium permanganate	all	20	R	R	R	R	R	R	R
Propylene glycol	100	20	R	R	R	R	R	R	R
Pyridine	100	20	NR	NR	NR	NR	NR	L	R
Salicylic acid	100	20	L	L	NR	NR	L	R	R
Skydrol 500B4	-	20	L	R	L	L	R	R	R
Skydrol LD4	-	20	L	R	L	L	R	R	R
Sodium acetate	all	20	R	R	R	R	R	R	R
sodium carbonate	all	20	R	R	R	R	R	R	R
Sodium chlorate	all	20	R	R	R	R	R	R	R
Sodium chloride	all	20	R	R	R	R	R	R	R
Sodium hydroxide	5	20	R	R	R	R	R	R	R
Sodium hydroxide	20	20	R	R	R	R	R	R	R
Sodium hydroxide	20	80	NR	NR	NR	NR	NR	R	R
Sodium hydroxide	50	20	R	R	R	R	R	R	R
Sodium hydroxide	50	80	NR	NR	NR	NR	NR	R	R
Sodium hypochlorite	15	20	R	R	L	L	R	R	R
Sodium sulphide	all	20	R	R	R	R	R	R	R
Stearic acid	100	20	R	R	R	R	R	R	R
Styrene	100	20	L	L	L	L	L	R	R
Succinic acid	20	20	R	R	L	L	R	R	R
Sugar (sucrose)	all	20	R	R	R	R	R	R	R
Sugar (sucrose)	all	80	NR	NR	NR	NR	NR	R	R
Sulphuric acid	20	20	R	R	R	R	R	R	R
Sulphuric acid	20	60	L	L	NR	NR	L	R	R
Sulphuric acid	50	20	R	R	R	R	R	R	R
Sulphuric acid	70	20	R	R	R	R	R	R	R
Sulphuric acid	98	20	NR	NR	NR	NR	NR	L	L

CHEMICAL	CONCENTRATION %	TEMP °C	RINOL STANDARD	RINOL ALLROUNDER & HEAVYDUTY	RINOL SAFETY	RINOL SOLID	RINOL CONDUCTIVE & ETEC	RINOLCRETE STANDARD & HEAVYDUTY	RINOL VINYL ESTER
Tartaric acid	15	20	R	R	R	R	R	R	R
Tetrachloroethylene (perchloroethylene)	100	20	L	L	R	R	L	R	R
Tetrahydrofuran	100	20	NR	NR	NR	NR	NR	L	R
Thioglycolic acid	100	20	R	R	R	R	R	R	R
Toluene	100	20	L	L	L	L	L	R	R
Toluene sulphonic acid	100	20	L	L	NR	NR	L	R	R
Trichloroacetic acid	100	20	NR	NR	NR	NR	NR	L	R
Trichlorobenzene	100	20	NR	NR	NR	NR	NR	L	R
Trichloroethylene	100	20	NR	NR	L	L	NR	L	R
Trisodium phosphate	all	20	R	R	R	R	R	R	R
Turpentine	-	20	R	R	L	L	R	R	R
Urea	20	20	R	R	R	R	R	R	R
Urine	-	20	R	R	R	R	R	R	R
Vegetable oils	-	20	R	R	R	R	R	R	R
Vegetable oil	-	80	NR	NR	NR	NR	NR	R	R
Water	-	20	R	R	R	R	R	R	R
Water	-	80	NR	NR	NR	NR	NR	R	R
White spirit	-	20	R	R	R	R	R	R	R
Xylene	10	20	L	L	L	L	L	R	R



No.1 in industrial flooring

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IMPORTANT

Whilst all reasonable care is taken in compiling technical data on the company's products, all recommendations or suggestions regarding the use of such products are made without guarantee since the conditions of use are beyond the control of the company. It is the customer's responsibility to satisfy himself that each product is fit for the purpose for which he intends to use it and that the actual conditions of use are suitable.