CRCA CANADIAN ROOFING CONTRACTORS ASSOCIATION

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# Chemical Resistance of Roofing Asphalt

Since the discovery of natural asphalt deposits more than 5,000 years ago, asphalt has proved to be one of nature's most useful – and abundant – materials. It has been used successfully as an excellent natural preservative, as well as an outstanding waterproofing and adhesive agent for centuries. For over 150 years, asphalt has proven to be one of the most popular roofing materials in North America.

Asphalt is now obtained as a residue of the distillation of petroleum crude oil. As such, it is the highest molecular weight fraction of petroleum. Asphalts are very complex oil mixtures that can be separated into four fractions, namely the saturates, the aromatics, the resins and the asphaltenes, each fraction being a mixture in its own. The chemical composition of asphalt and its fractions vary with the source and the refining of the crude oil. This composition governs asphalt properties, including ease of oxidation, miscibility with polymers, and durability amongst others.

Roofing asphalt is considered to have good resistance to a wide variety of chemicals and compounds. However, most of the information regarding chemical resistance has been empirically derived. It is generally accepted that:

1. resistance to chemical attack increases with the hardness (measured by penetration) of the asphalt,
2. chemical resistance decreases with time, temperature and the concentration of the chemical.

The following table is a compilation of data from the Shell Bitumen Industrial Handbook (Shell Bitumen, UK). It provides some information on the resistance of asphalt to various chemicals. Two asphalts may not have the exact same resistance to a given chemical. One would not normally encounter most of these substances in the roofing environment, particularly at the concentrations and at the temperatures listed in the tables. Notwithstanding, this bulletin provides guidelines regarding the chemical resistance of an asphalt based roof cover. Final selection of the roofing system should be based on anticipated service conditions in consultation with the manufacturer or supplier.

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A — Good Chemical Resistance
X — Do Not Use (not recommended)

C — Conditional (consult supplier)
Blank — No Information

Acetic Acid (Liquid)

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | X |
| ≥50 | C | | |

Acetic Anhydride

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | | X |
| ≥50 | | | |

Acetone

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | C | X | X |
| ≥50 | C | X | X |

Aluminum Chloride

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | |
| ≥50 | A | | |

Aluminum Sulphate

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | |
| ≥50 | A | | |

Alums (Aluminum potassium sulphate)

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | |
| ≥50 | A | | |

Ammonia – Aqueous

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | C | C | C |
| ≥50 | C | C | C |

Ammonium Acetate

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | C | C | C |
| ≥50 | C | C | C |

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Blank — No Information

Ammonium Bicarbonate

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | |
| ≥50 | A | | |

Ammonium Carbonate

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | |
| ≥50 | A | | |

Ammonium Chloride

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | |
| ≥50 | A | | |

Ammonium hydroxide

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | |
| ≥50 | A | | |

Ammonium Nitrate

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | |
| ≥50 | A | | |

Ammonium Persulphate

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25-75 | >75 |
| <50 | A | | |
| ≥50 | A | | |

Ammonium Sulphate

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | |
| ≥50 | A | | |

Amyl Acetate

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | | X |
| ≥50 | | | |

Amyl Alcohol

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | | A |
| ≥50 | | | |

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C — Conditional (consult supplier)
Blank — No Information

Amyl chloride

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | | X |
| ≥50 | | | |

Aniline

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | | X |
| ≥50 | | | |

Aniline Sulphate

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | X |
| ≥50 | A | | |

Animal Fats

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | X | | |
| ≥50 | X | | |

Aqua Regia
nitric acid: hydrochloric acid (3:1)

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | X | | |
| ≥50 | X | | |

Aviation Fuel

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | X | | |
| ≥50 | X | | |

Aviation Turbine Fuel

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | X | | |
| ≥50 | X | | |

Barium Carbonate

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | | A |
| ≥50 | | | A |

Barium Chloride

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | |
| ≥50 | A | | |

A — Good Chemical Resistance
X — Do Not Use (not recommended)

C — Conditional (consult supplier)
Blank — No Information

Barium hydroxide

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | |

Beer

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | | A |
| ≥50 | | | A |

Benzaldehyde

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | | X |
| ≥50 | | | X |

Benzene

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | | X |
| ≥50 | X | X | X |

Benzene Sulphonic Acid

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | X | X | X |
| ≥50 | X | X | X |

Benzoic Acid

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | |

Benzyl Alcohol

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | C | C | C |
| ≥50 | C | C | C |

Bleach Liquors

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | | X |
| ≥50 | C | | |

Borax

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | C | | |
| ≥50 | C | | |

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Blank — No Information

Boric Acid

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | C | | |
| ≥50 | C | | |

Brine

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | |
| ≥50 | A | | |

Bromine (dry)

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | | X |
| ≥50 | | | |

Bromine (wet)

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | | X |
| ≥50 | | | |

Butyl Acetate

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | | X |
| ≥50 | | | |

Butyric Acid

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | C | X |
| ≥50 | C | | |

Butane (liquid)

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | C | | |
| ≥50 | C | | |

Butyl Alcohol

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | C | | |
| ≥50 | C | | |

Calcium Chlorate

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | |

A — Good Chemical Resistance
X — Do Not Use (not recommended)

C — Conditional (consult supplier)
Blank — No Information

Calcium Chloride

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | A |

Calcium Hydroxide

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | |

Calcium Hypochlorite bleach

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | C | | |
| ≥50 | C | | |

Calcium Sulphate

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | | A |
| ≥50 | | | A |

Camphor

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | | X |
| ≥50 | | | |

Carbon Dioxide (dry ice)

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | | A |
| ≥50 | | | A |

Carbon Disulphide

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | X | | X |
| ≥50 | X | | |

Carbon Monoxide

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | | A |
| ≥50 | | | A |

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C — Conditional (consult supplier)
Blank — No Information

Carbon Tetrachloride

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | X | | X |
| ≥50 | X | | |

Carbolic Acid (Phenol)

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | C | X | |
| ≥50 | X | | |

Castor Oil

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | C | |
| ≥50 | X | | |

Chloracetic Acid

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | C | | X |
| ≥50 | X | | |

Chlorine Dioxide Bleach

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | X | | |
| ≥50 | X | | |

Chlorine Gas

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | | X |
| ≥50 | | X | |

Chlorine Water

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | C | | |
| ≥50 | | | |

Chlorobenzene

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | | X |
| ≥50 | C | | |

Chlorofoam

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | C | | X |
| ≥50 | C | | |

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C — Conditional (consult supplier)
Blank — No Information

Chlorosulfonic Acid

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | | X |
| ≥50 | | | |

Chromic/sulfuric Acid

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | C | | |
| ≥50 | C | | |

Chromic Acid

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | C | X | |
| ≥50 | X | | |

Citric Acid

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | |

Copper Chloride

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | |
| ≥50 | A | | |

Copper Cyanide

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | |
| ≥50 | A | | |

Copper Sulphate

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | |
| ≥50 | A | | |

Cresylic Acid

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | | X |
| ≥50 | | | |

Cylcohexanol

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | C | | |
| ≥50 | C | | |

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X — Do Not Use (not recommended)
C — Conditional (consult supplier)
Blank — No Information

Cyclohexanone

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | C | | |
| ≥50 | C | | |

Decalin

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | X | | |
| ≥50 | X | | |

Dibutyl Phthalate

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | C | | |
| ≥50 | C | | |

Dichloroethylene

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | X | | |
| ≥50 | X | | |

Diesel Oil

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | X | | |
| ≥50 | X | | |

Ethyl Ether

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | | X |
| ≥50 | | | |

Ethyl Acetate

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | | X |
| ≥50 | | | |

Ethyl Alcohol

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | |
| ≥50 | A | | |

Ethyl Chloride

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | | X |
| ≥50 | | | |

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C — Conditional (consult supplier)
Blank — No Information

Ethylene Chlorohydrin

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | | X |
| ≥50 | | | |

Ethylene Dichloride

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | | X |
| ≥50 | | | |

Ethylene Glycol

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | | A |
| ≥50 | | | A |

Fatty Acids

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | | X |
| ≥50 | | | |

Ferric Chloride

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | A |

Ferric Nitrate

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | A |

Ferric Sulphate

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | A |

Ferrous Chloride

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | A |

Ferrous Sulphate

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | A |

A — Good Chemical Resistance
X — Do Not Use (not recommended)

C — Conditional (consult supplier)
Blank — No Information

Fluorine

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | | X |
| ≥50 | | | |

Formaldehyde

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | |
| ≥50 | A | | |

Formic Acid

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | A | X |
| ≥50 | C | | |

Fuel Oil

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | X | | |
| ≥50 | X | | |

Furfural

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | | X |
| ≥50 | | | |

Gasoline

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | X | | X |
| ≥50 | | | |

Glycerin

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | | A |
| ≥50 | | | A |

Heptane

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | X | | |
| ≥50 | X | | |

Haxane

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | X | | |
| ≥50 | X | | |

A — Good Chemical Resistance
X — Do Not Use (not recommended)

C — Conditional (consult supplier)
Blank — No Information

Hydrobromic Acid

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | C | X | |
| ≥50 | X | | |

Hydrochloric Acid

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | A | |
| ≥50 | C | C | |

Hydrocyanic Acid

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | |
| ≥50 | A | | |

Hydrofluoric Acid

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | X | | |
| ≥50 | | | |

Hydrogen

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | | A |
| ≥50 | | | A |

Hydrogen Chloride Anhydrous

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | X | | |
| ≥50 | | | |

Hydrogen Fluoride Anhydrous

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | X | | |
| ≥50 | | | |

Hydrogen Peroxide

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | C | | |
| ≥50 | X | | |

Hydrogen Sulphide

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | A |

A — Good Chemical Resistance
X — Do Not Use (not recommended)
C — Conditional (consult supplier)
Blank — No Information

Hypchlorous Acid

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | |
| ≥50 | C | | |

Iodine

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | | X |
| ≥50 | | | |

Ketones

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | C | | |
| ≥50 | X | | |

Lactic Acid

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | |
| ≥50 | | | |

Lead Acetate

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | |

Linseed Oil

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | C | | |
| ≥50 | X | | |

Lubricating Oil

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | X | | |
| ≥50 | X | | |

Magnesium Carbonate

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | | A |
| ≥50 | | | |

Magnesium Chloride

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | A |

A — Good Chemical Resistance
X — Do Not Use (not recommended)

C — Conditional (consult supplier)
Blank — No Information

Magnesium Chloride

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | A |

Magnesium Sulphate

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | A |

Maleic Acid

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | X | | X |
| ≥50 | | | |

Mercury

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | | A |
| ≥50 | | | A |

Mercuric Chloride

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | A |

Mercurous Chloride

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | A |

Methyl Ethyl Ketone

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | C | | X |
| ≥50 | | | |

Methyl Alcohol

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | | A |
| ≥50 | | | A |

Methylene Chloride

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | C | | |
| ≥50 | X | | |

A — Good Chemical Resistance
X — Do Not Use (not recommended)

C — Conditional (consult supplier)
Blank — No Information

Milk (and byproducts)

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | | |
| ≥50 | | | |

Mineral Oil

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | X | | |
| ≥50 | X | | |

Naphthal

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | | X |
| ≥50 | | | |

Napththalene

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | | X |
| ≥50 | | | |

Nickel Chloride

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | A |

Nickel Nitrate

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | A |

Nickel Sulphate

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | A |

Nitric Acid

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | C | | |
| ≥50 | X | | |

Nitrobenzene

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | X | | |
| ≥50 | | | |

A — Good Chemical Resistance
X — Do Not Use (not recommended)

C — Conditional (consult supplier)
Blank — No Information

Nitrous Acid

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | |
| ≥50 | A | | |

Oleic Acid

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | | X |
| ≥50 | | | |

Olive Oil

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | C | | |
| ≥50 | X | | |

Oxalic Acid

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | |

Oxidizing Gases

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | | X |
| ≥50 | | | |

Ozone

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | C | | |
| ≥50 | X | | |

Paraffin

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | X | | |
| ≥50 | X | | |

Paraffin Wax

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | C | |
| ≥50 | | X | |

Perchloric Acid

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | X | | |
| ≥50 | | | |

A — Good Chemical Resistance
X — Do Not Use (not recommended)

C — Conditional (consult supplier)
Blank — No Information

Phenol

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | C | X | |
| ≥50 | | | |

Phosphoric Acid

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | A |

Phthalic Anhydride

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | | A |
| ≥50 | | | C |

Potassium Bicarbonate

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | A |

Potassium Carbonate

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | A |

Potassium Chloride

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | A |

Potassium Dichromate

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | |
| ≥50 | A | | |

Potassium Ferrocyanide

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | |
| ≥50 | A | | |

Potassium Hydroxide

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | |
| ≥50 | A | | |

A — Good Chemical Resistance
X — Do Not Use (not recommended)
C — Conditional (consult supplier)
Blank — No Information

Potassium Nitrate

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | |

Potassium Permanganate

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | X | | |
| ≥50 | | | |

Potassium Persulphate

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | |
| ≥50 | A | | |

Postassium Sulphate

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | A |

Propylene Dichloride

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | X | | |
| ≥50 | | | |

Pyridine

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | X | | |
| ≥50 | | | |

Silicone Oil

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | C | |
| ≥50 | | C | |

Silver Nitrate

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | A |

Sodium Acetate

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | A |

A — Good Chemical Resistance
X — Do Not Use (not recommended)
C — Conditional (consult supplier)
Blank — No Information

Sodium Bicarbonate

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | A |

Sodium Bisulphate

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | A |

Sodium Bisulphite

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | A |

Sodium Bromide

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | |

Sodium Carbonate

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | A |

Sodium Chloride

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | A |

Sodium Cyanide

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | |

Sodium Hydroxide (caustic soda)

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | C |

Sodium Hypochlorite

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | C | | |
| ≥50 | | | |

A — Good Chemical Resistance
X — Do Not Use (not recommended)

C — Conditional (consult supplier)
Blank — No Information

Sodium Nitrate

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | A |

Sodium Nitrite

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | A |

Sodium Sulphate

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | A |

Sodium Sulphate

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | A |

Sodium Sulphide

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | |
| ≥50 | A | | |

Sodium Sulphite

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | |
| ≥50 | A | | |

Stannic Chloride

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | | X |
| ≥50 | | | |

Stannous Chloride

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | |
| ≥50 | | | |

Sulphated Detergents

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | A | A |
| ≥50 | A | A | |

A — Good Chemical Resistance
X — Do Not Use (not recommended)

C — Conditional (consult supplier)
Blank — No Information

Sulphur

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | C | |
| ≥50 | C | | |

Sulphur Dioxide

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | | | A |
| ≥50 | | | A |

Sulphur Trioxide

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | X | | |
| ≥50 | | | |

Sulphuric Acid

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | C | |
| ≥50 | C | X | |

Tallow

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | C | | |
| ≥50 | C | | |

Tannic Acid

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | |

Tartaric Acid

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | |

Toluene

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | X | | |
| ≥50 | X | | |

Trisodium Phosphate

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | A |

A — Good Chemical Resistance
X — Do Not Use (not recommended)
C — Conditional (consult supplier)
Blank — No Information

Tuprentine

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | X | | |
| ≥50 | X | | |

Vegetable Oil

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | X | | |
| ≥50 | X | | |

Xylene

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | X | | |
| ≥50 | X | | |

Zinc Chloride

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | A |

Zinc Sulphate

| | Concentration (%) | | |
|---|---|---|---|
| Temp (ºC) | <25 | 25 — 75 | >75 |
| <50 | A | | A |
| ≥50 | A | | A |