
BELZONA® PRODUCT DATA Q502

CHEMICAL RESISTANCE OF BELZONA® 4311

(Magma CR1)

INORGANIC ACIDS

Carbonic acid
Chromic acid 10%
Chromic acid 40%
Fluosilicic acid 10%
Hydrobromic acid 10%
Hydrobromic acid 40%
Hydrochloric acid 10%
Hydrochloric acid 36%
Hydrofluoric acid 52%
Hydrofluorosilicic acid 30%
Nitric acid 10%
Nitric acid 30%
Nitric acid 65%

RATING

Ex
Ex
F
Ex
Ex
Ex
Ex
Ex
Ex
Ex
Ex
F
P

Nitrous acid 20%
Oleum 20-65% SO₃
Perchloric acid 60%
Phosphoric acid 10%
Phosphoric acid 30%
Phosphoric acid 85%
Sulfuric acid 10%
Sulfuric acid 20%
Sulfuric acid 50%
Sulfuric acid 98%
Sulfuric acid 100%
Sulfurous acid 6%

RATING

Ex
P
Ex
Ex
Ex
G*
Ex
Ex
Ex*
Ex
P
Ex

ORGANIC ACIDS

Acetic acid 0-10%
Acetic acid 10-20%
Acetic acid 20-50%
Acrylic acid
Chlorosulphonic acid
Citric acid
Cresylic acid
Folic acid
Formic acid 20%

RATING

Ex
F
P
F
G
Ex
G
Ex
Ex

Lactic acid 0-10%
Lactic acid 10-85%
Maleic acid
Phenol 80%
Salicilic acid
Stearic acid (solid)
Tannic acid
Tartaric acid

RATING

Ex
G*
Ex
F*
Ex
Ex
Ex
Ex

ALCOHOLS

Butanol
Cellosolve
Ethanol
Ethylene glycol
Glycerol
Hexanol

RATING

Ex
Ex
Ex
Ex
Ex
Ex

Isobutanol
Methanol
2-Methoxy ethanol
Methyl "cellosolve"
Propylene glycol

RATING

Ex
G
Ex
Ex
Ex

* Post curing essential

Q502 - 1 (Issue 7)

All descriptions are based on the results of long term tests carried out in our laboratories and are believed to be true and accurate. No condition or warranty is given covering the results from the use of our products in any particular case, whether the purpose is disclosed or not and we cannot accept liability if the desired results are not obtained.

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ALKALIS

Ammonia solution 0-10%
 Ammonia solution 10-30%
 Calcium hydroxide
 Lime

RATING

Ex
 Ex
 Ex
 Ex

Potassium hydroxide 10%
 Potassium hydroxide 20%
 Sodium hydroxide 10%
 Sodium hydroxide 40%

RATING

Ex
 Ex
 Ex
 Ex

AMINES & AMIDES

Aniline
 Dibutylamine
 Diethanolamine
 Dimethylamine
 Diethylenetriamine
 Dimethylformamide

RATING

Ex
 G
 Ex
 F
 F
 P

Hydrazine
 Methylamine 40% aqueous
 Methylamine gas
 Pyridine
 Triethanolamine
 Triethylenetetramine

RATING

Ex*
 Ex*
 Ex
 F*
 Ex*
 G*

BEVERAGES & FOODSTUFFS

Apple juice
 Beer
 Beet sugar
 Butter
 Buttermilk
 Cider
 Citric juice
 Fermentation liquor
 Glucose
 Ketchup
 Margarine

RATING

Ex
 Ex
 Ex
 Ex
 Ex
 Ex
 Ex
 Ex
 Ex
 Ex

Mayonnaise
 Milk
 Molasses
 Mustard
 Salad oil
 Sugar liquids
 Tomato juice
 Vinegar
 Whiskey and wine
 Yeast

RATING

Ex
 Ex
 Ex
 Ex
 Ex
 Ex
 Ex
 Ex
 Ex
 Ex

ESTERS & ETHERS

Amyl acetate
 Butyl acetate
 Butyl ether
 Dibutyl phthalate
 Dibutyl sebacate
 Diethylether
 Dioctyl adipate

RATING

Ex
 Ex
 Ex
 Ex
 Ex
 Ex
 Ex

Dioctyl phthalate
 Dioctyl sebacate
 Ethyl acetate
 Methyl acetate
 Propylene glycol monomethyl
 Ether acetate
 Tributyl phosphate

RATING

Ex
 Ex
 Ex
 Ex
 Ex
 ?
 Ex

GASES

Butane
 Carbon dioxide
 Carbon monoxide
 Chlorine gas
 Hydrogen gas
 Hydrogen sulfide

RATING

Ex
 Ex
 Ex
 G
 Ex
 Ex

Methane
 Natural gas
 Nitrous oxide
 Ozone (aqueous solution)
 Sulfur dioxide
 Sulphur trioxide

RATING

Ex
 Ex
 Ex
 UT
 Ex
 Ex

* Post curing essential

HALOCARBONS

Carbon tetrachloride
Chlorobenzene
Chloroform
Ethylene dichloride
Methylene chloride

RATING

Ex
Ex
F*
Ex*
F*

Perchloroethylene
1, 1, 1, - Trichloroethane
Trichlorotrifluoroethane

RATING

Ex
Ex
Ex

HYDROCARBONS

Benzene
Cyclohexane
Ethane
Gasoline
Heptane
Hexane
Iso-octane
Kerosene
Mineral spirits

RATING

Ex
Ex
Ex
Ex
Ex
Ex
Ex
Ex
Ex

Naphtha
Paraffin
Petroleum naphtha
Stoddard solvent
Styrene
Toluene
Turpentine
White spirit
Xylene

RATING

Ex
Ex
Ex
Ex
Ex
Ex
Ex
Ex
Ex

KETONES

Acetone
Formaldehyde 37%

RATING

F
Ex

Methyl amyl ketone
Methyl ethyl ketone

RATING

Ex
F

MISCELLANEOUS

Bleach
Brake Fluid
Bromine water (saturated)
Carbon disulfide
Chlorine water (saturated)
Dimethylsulfoxide
Emulsion paint
Ethylethoxypropionate
Fertilizer solutions
Grease
Hydrogen peroxide 35%
Ink (water based)
Isothiazolinone
Mesitylene
N-Methyl pyrrolidone

RATING

G
Ex
Ex
G
Ex
NT
Ex
Ex
Ex
Ex
Ex
Ex
Ex
Ex
Ex
F

Napthalene
Pyrrole
Resins & rosins (natural)
Roof pitch
Rubber latex emulsions
Sewage
Skydrol
Starch
Tar
Tetraethyllead
Tetrahydrofuran
Urea
Water, fresh
Water, sea
Water, distilled

RATING

Ex
F
Ex
Ex
Ex
Ex
Ex
Ex
Ex
Ex
G*
Ex
Ex
Ex
Ex
Ex

OILS - MINERAL

Castor oil
Coconut oil
Cod liver oil
Corn oil
Diesel oil
Hydraulic oil
Lubricating oil

RATING

Ex
Ex
Ex
Ex
Ex
Ex
Ex

Oil, petroleum
Oil/water mixtures
Silicone oil
Soybean oil
Transfer oil
Tung oil

RATING

Ex
Ex
Ex
Ex
Ex
Ex

*** Post curing essential**

<u>SALTS</u>	<u>RATING</u>		<u>RATING</u>
Alum	Ex	Potassium chloride	Ex
Aluminium chloride	Ex	Potassium cyanide	Ex
Aluminium sulphate	Ex	Potassium dichromate	Ex
Ammonium bicarbonate	Ex	Potassium diphosphate	Ex
Ammonium fluosilicate	Ex	Potassium ferricyanide	Ex
Ammonium nitrate	Ex	Potassium ferrocyanide	Ex
Ammonium phosphate	Ex	Potassium iodide	Ex
Ammonium sulfate	Ex	Potassium nitrate	Ex
Barium carbonate	Ex	Potassium permanganate	Ex
Barium chloride	Ex	Potassium sulfate	Ex
Barium sulphate	Ex	Potassium sulfide	Ex
Barium sulfide	Ex	Potassium sulfite	Ex
Brines	Ex	Quaternary ammonium salts	F
Bromine chloride	Ex	Silver nitrate	Ex
Calcium cabonate	Ex	Sodium acetate	Ex
Calcium chloride	Ex	Sodium aluminate	Ex
Calcium fluoride	Ex	Sodium bicarbonate	Ex
Calcium hypochlorite	Ex	Sodium bisulfate	Ex
Calcium sulfate	Ex	Sodium bisulfite	Ex
Chromium potassium sulfate	Ex	Sodium borate	Ex
Copper acetate	Ex	Sodium bromide	Ex
Copper chloride	Ex	Sodium carbonate	Ex
Copper nitrate	Ex	Sodium chlorate	Ex
Copper sulfate	Ex	Sodium chloride	Ex
Epsom salts	Ex	Sodium chromate	Ex
Ferric chloride	Ex	Sodium cyanide	Ex
Ferrice nitrate	Ex	Sodium fluoride	Ex
Ferric sulfate	Ex	Sodium fluorosilicate	Ex
Ferrous chloride	Ex	Sodium hypochlorite 15%	G
Ferrous sulfate	Ex	Sodium metaphosphate	Ex
Magnesium bisulfate	Ex	Sodium metasilicate	Ex
Magnesium carbonate	Ex	Sodium nitrate	Ex
Magnesium chloride	Ex	Sodium phosphate (dibasic)	Ex
Magnesium sulfate	Ex	Sodium phosphate (tribasic)	Ex
Mercuric chloride	Ex	Sodium silicate	Ex
Mercuric cyanide	Ex	Sodium sulfate	Ex
Nickel ammonium sulfate	Ex	Sodium sulfide	Ex
Nickel chloride	Ex	Stannic chloride	Ex
Nickel nitrate	Ex	Stannous chloride	Ex
Nickel sulfate	Ex	Zinc chloride	Ex
Potassium bisulfite	Ex	Zinc hydrosulfite	Ex
Potassium bromide	Ex	Zinc sulfate	Ex
Potassium carbonate	Ex		
Potassium chlorate	Ex		

These tables are based upon immersion tests carried out under static conditions at 68°F (20°C).

They should only be considered as a guide to the performance which might be expected under practical conditions.

In these tables, the following nomenclature has been used:-

- (Ex) Excellent - Suitable for all reasonable applications including immersion
- (G) Good - Suitable for applications involving immersion for short periods, splashing and contact with fumes.
- (F) Fair - Suitable for use in environments contaminated by the chemical or in situations where accidental splashing can be removed either by cleaning or, in the case of volatile solvents, by evaporation.
- (P) Poor - Not suitable for any applications involving contact with the chemical itself or fumes evolved from it.

Post Curing** - ***Allow Belzona® 4311 to solidify for 12 hours at 68°F (20°C) then force cure at 180°F (80°C) for 4 hours.

BELZONA® PRODUCT DATA Q502

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