

# CHEMICAL RESISTANCE OF BELZONA® 1981, 1982 & 1983

FN10168, FN10169 & FN10170



	Chemical name	Chemical formula (CAS number)	Concentration	20 °C 68 °F			90°C 194°F
				Belzona 1981	Belzona 1982	Belzona 1983	Belzona 1983
Inorganic Acids	Hydrochloric acid	HCl (7647-01-0)	37%	Ex	G*	Ex*	M*
			20%	Ex	Ex	Ex*	M*
			10%	Ex	Ex	Ex*	G*
	Nitric acid	HNO <sub>3</sub> (7697-37-2)	50%	P	p*	M*	p*
			20%	M	G*	Ex*	p*
			10%	Ex	Ex	Ex*	p*
	Phosphoric acid (orthophosphoric acid)	H <sub>3</sub> PO <sub>4</sub> (7664-38-2)	30%	Ex	G*	Ex*	p*
			20%	Ex	Ex*	Ex*	p*
			10%	Ex	Ex*	M*	M*
			5%	Ex	Ex*	Ex*	M*
			2%	Ex	M	Ex*	M*
	Sulphuric acid	H <sub>2</sub> SO <sub>4</sub> (7664-93-9)	90%	G	G*	Ex*	p*
70%			Ex	Ex	Ex*	p*	
40%			Ex	Ex	Ex*	M*	
20%			Ex	Ex	Ex*	G*	
10%			Ex	Ex	Ex*	p*	
Organic Acids	Acetic acid (ethanoic acid)	CH <sub>3</sub> COOH (64-19-7)	50%	P	p*	M*	p*
			10%	P	M*	G*	p*
			5%	G	M	Ex*	M*
			2%	Ex	M	Ex*	G*
Alcohols, Aldehydes and ketones	Acetone (propanone)	(CH <sub>3</sub> ) <sub>2</sub> CO (67-64-1)	-	G	Ex	Ex*	-
	n-Butanol (butyl alcohol)	C <sub>4</sub> H <sub>9</sub> OH (71-36-3)	-	Ex	Ex	Ex*	Ex*
	Ethanol (ethyl alcohol)	CH <sub>3</sub> CH <sub>2</sub> OH (64-17-5)	-	Ex	Ex	Ex*	-
	Ethylene glycol (ethan-1,2-diol, monoethylene glycol, MEG)	(CH <sub>2</sub> OH) <sub>2</sub> (107-21-1)	-	Ex	Ex	Ex*	Ex*

Excellent	Ex	no significant deterioration / barrier properties retained for greater than 52 weeks <i>suitable for all applications including long term immersion</i>
Good	G	no significant deterioration / barrier properties retained for 12 - 52 weeks <i>suitable for short-term immersion and general chemical contact</i>
Moderate	M	no significant deterioration / barrier properties retained for 1 - 12 weeks <i>suitable for applications involving short term chemical contact e.g. spillage, splashing or secondary containment</i>
Poor	P	significant deterioration / loss of barrier properties after 1 week or less <i>not suitable for any application</i>
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Alcohols, Aldehydes and Ketones	Glycerol (glycerine, propane-1,2,3-triol)	HOCH <sub>2</sub> CH(OH)CH <sub>2</sub> OH (56-81-5)	-	Ex	Ex	Ex*	Ex*
	n-Hexanol (hexyl alcohol)	C <sub>6</sub> H <sub>13</sub> OH (111-27-3)	-	Ex	Ex	Ex*	Ex*
	Isopropyl alcohol (IPA) (isopropanol, propan-2-ol)	CH <sub>3</sub> CH(OH)CH <sub>3</sub> (67-63-0)	-	Ex	Ex	Ex*	-
	Isobutyl alcohol (IBA) (isobutanol, 2-methylpropan-1-ol)	(CH <sub>3</sub> ) <sub>2</sub> CHCH <sub>2</sub> OH (78-83-1)	-	Ex	Ex	Ex*	Ex*
	Methanol (methyl alcohol)	CH <sub>3</sub> OH (67-56-1)	-	G	G	Ex*	-
	Methanol solution (aqueous)	CH <sub>3</sub> OH <sub>(aq)</sub> (67-56-1)	55%	G	G	Ex*	Ex*
	Methyl ethyl ketone (MEK) (2-butanone, methyl acetone)	CH <sub>3</sub> C(O)CH <sub>2</sub> CH <sub>3</sub> (78-93-3)	-	Ex	Ex	Ex*	-
	Propan-1-ol (Propyl alcohol)	CH <sub>3</sub> CH <sub>2</sub> CH <sub>2</sub> OH (71-23-8)	-	Ex	Ex	Ex*	Ex*
	Propylene glycol (1,2-Propanediol)	CH <sub>3</sub> CH(OH)CH <sub>2</sub> OH (57-55-6)	-	Ex	Ex	Ex*	Ex*
	Triethylene glycol (triglycol)	HOCH <sub>2</sub> CH <sub>2</sub> OCH <sub>2</sub> CH <sub>2</sub> OCH <sub>2</sub> CH <sub>2</sub> OH (112-27-6)	-	Ex	Ex	Ex*	Ex*
	Tetraethylene glycol (tetraglycol)	HOCH <sub>2</sub> CH <sub>2</sub> OCH <sub>2</sub> CH <sub>2</sub> OCH <sub>2</sub> CH <sub>2</sub> OCH <sub>2</sub> CH <sub>2</sub> OH (112-60-7)	-	Ex	Ex	Ex*	Ex*
Alkalis / Bases	Barium hydroxide	Ba(OH) <sub>2</sub> (17194-00-2)	-	Ex	Ex	Ex*	Ex*
	Calcium hydroxide (lime water)	Ca(OH) <sub>2</sub> (1305-62-0)	-	Ex	Ex	Ex*	Ex*
	Magnesium hydroxide (milk of magnesia)	Mg(OH) <sub>2</sub> (1309-42-8)	-	Ex	Ex	Ex*	Ex*

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Ikalis / Bases	Potassium hydroxide (caustic potash)	KOH (1310-58-3)	40%	Ex	Ex	Ex*	Ex*
	Sodium hydroxide (caustic soda)	NaOH (1310-73-2)	50%	Ex	Ex	Ex*	Ex*
			40%	Ex	Ex	Ex*	Ex*
			20%	Ex	Ex	Ex*	Ex*
			10%	Ex	Ex	Ex*	Ex*
Amines & Amides	Diethanolamine (DEA) (2,2'-iminodiethanol)	HN(CH <sub>2</sub> CH <sub>2</sub> OH) <sub>2</sub> (111-42-2)	-	Ex	Ex	Ex*	Ex*
	Diethylamine (1-ethylaminoethane)	CH <sub>3</sub> CH <sub>2</sub> NHCH <sub>2</sub> CH <sub>3</sub> (109-89-7)		P	M*	M*	P*
	Diethylene glycolamine (DGA) (2-(2-aminoethoxy) ethanol)	H <sub>2</sub> NCH <sub>2</sub> CH <sub>2</sub> OCH <sub>2</sub> CH <sub>2</sub> O H (929-06-6)	-	Ex	Ex	Ex*	M*
	N-Methyl diethanolamine (MDEA)	CH <sub>3</sub> N(CH <sub>2</sub> CH <sub>2</sub> OH) <sub>2</sub> (105-59-9)	-	Ex	Ex	Ex*	Ex*
	N-Methylethanolamine (2-methylaminoethanol)	CH <sub>3</sub> NHCH <sub>2</sub> CH <sub>2</sub> OH (109-83-1)	-	Ex	Ex	Ex*	Ex*
	Monoethanolamine (MEA) (2-aminoethanol)	H <sub>2</sub> NCH <sub>2</sub> CH <sub>2</sub> OH (141-43-5)	-	Ex	Ex	Ex*	M*
	Sulfinol solution (50% diisopropanolamine, 25% tetramethylene sulphone, 25% water)	N/A	-	Ex	Ex	Ex*	Ex*
	Triethanolamine (TEA) (2,2',2''-nitrilotriethanol)	N(CH <sub>2</sub> CH <sub>2</sub> OH) <sub>3</sub> (102-71-6)	-	Ex	Ex	Ex*	Ex*
Esters and Ethers	Butyl acetate (butyl ethanoate)	CH <sub>3</sub> C(O)OCH <sub>2</sub> CH <sub>2</sub> CH <sub>2</sub> C H <sub>3</sub> (123-86-4)	-	Ex	Ex	Ex*	Ex*
	Diethyl ether (ether, ethoxyethane)	CH <sub>3</sub> CH <sub>2</sub> OCH <sub>2</sub> CH <sub>3</sub> (60-29-7)	-	Ex	Ex	Ex*	-
	Ethyl acetate (ethyl ethanoate, acetic ester)	CH <sub>3</sub> C(O)OCH <sub>2</sub> CH <sub>3</sub> (141-78-6)	-	Ex	Ex	Ex*	-

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Gases	Butane	CH <sub>3</sub> CH <sub>2</sub> CH <sub>2</sub> CH <sub>3</sub> (106-97-8)	-	Ex	Ex	Ex*	-
	Carbon dioxide	CO <sub>2</sub> (124-38-9)	-	Ex	Ex	Ex*	Ex*
	Ethane	C <sub>2</sub> H <sub>6</sub> (74-84-0)	-	Ex	Ex	Ex*	-
	Hydrogen sulphide	H <sub>2</sub> S (7783-06-4)	-	Ex	Ex	Ex*	Ex*
	Methane (natural gas)	CH <sub>4</sub> (74-82-8)	-	Ex	Ex	Ex*	-
	Nitrogen	N <sub>2</sub> (7727-37-9)	-	Ex	Ex	Ex*	Ex*
Halocarbons	Chlorobenzene (benzene chloride, phenyl chloride)	C <sub>6</sub> H <sub>5</sub> Cl (108-90-7)	-	Ex	Ex	Ex*	P*
	Dichloromethane (DCM) (methylene chloride)	CH <sub>2</sub> Cl <sub>2</sub> (75-09-2)	-	P	M*	P*	-
Hydrocarbons	Aviation fuel (AVCAT, AVGAS, AVTAG, AVTUR)	N/A	-	Ex	Ex	Ex*	Ex*
	Benzene (benzol)	C <sub>6</sub> H <sub>6</sub> (71-43-2)	-	Ex	Ex	Ex*	-
	Crude Oil	N/A	-	Ex	Ex	Ex*	Ex*
	Cyclohexane	C <sub>6</sub> H <sub>12</sub> (110-82-7)	-	Ex	Ex	Ex*	-
	Gasoline (without Ethanol) (petrol)	N/A (8032-32-4)	-	Ex	Ex	Ex*	Ex*
	Heptane	CH <sub>3</sub> CH <sub>2</sub> CH <sub>2</sub> CH <sub>2</sub> CH <sub>2</sub> CH <sub>2</sub> CH <sub>3</sub> (142-82-7)	-	Ex	Ex	Ex*	Ex*

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Hydrocarbons	Hexane	CH <sub>3</sub> CH <sub>2</sub> CH <sub>2</sub> CH <sub>2</sub> CH <sub>2</sub> CH <sub>3</sub> (110-54-3)	-	Ex	Ex	Ex*	-
	Iso-octane (2,2,4-trimethylpentane)	(CH <sub>3</sub> ) <sub>3</sub> CCH <sub>2</sub> CH(CH <sub>3</sub> ) <sub>2</sub> (540-84-1)	-	Ex	Ex	Ex*	Ex*
	Kerosene	N/A (8008-20-6)	-	Ex	Ex	Ex*	Ex*
	Mesitylene (1,3,5-Trimethylbenzene)	C <sub>6</sub> H <sub>3</sub> (CH <sub>3</sub> ) <sub>3</sub> (108-67-8)	-	Ex	Ex	Ex*	Ex*
	Mineral spirits / White spirits (Stoddard solvent)	N/A (8052-41-3)	-	Ex	Ex	Ex*	Ex*
	Naphtha	N/A (8030-30-6)	-	Ex	Ex	Ex*	Ex*
	Naphthalene (naphthalin, white tar)	C <sub>10</sub> H <sub>8</sub> (91-20-3)	-	Ex	Ex	Ex*	Ex*
	Paraffin	N/A (8002-74-2)	-	Ex	Ex	Ex*	Ex*
	Pentane	CH <sub>3</sub> CH <sub>2</sub> CH <sub>2</sub> CH <sub>2</sub> CH <sub>3</sub> (109-66-0)	-	Ex	Ex	Ex*	-
	Toluene (methylbenzene, phenylmethane, toluol)	C <sub>6</sub> H <sub>5</sub> CH <sub>3</sub> (108-88-3)	-	Ex	Ex	Ex*	Ex*
	Xylene (dimethyl benzene, xylol)	C <sub>6</sub> H <sub>4</sub> (CH <sub>3</sub> ) <sub>2</sub> (95-47-6/108-38-3/106-42-3/1330-20-7)	-	Ex	Ex	Ex*	Ex*

Note: Provisional data only - test work on-going. Results to be confirmed at completion of 12 months testing.

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The technical data contained herein is based on the results of long term tests carried out in our laboratories and to the best of our knowledge is true and accurate on the date of publication. It is however, subject to change without prior notice and the user should contact Belzona to verify the technical data is correct before specifying or ordering. No guarantee of accuracy is given or implied. We assume no responsibility for rates of coverage, performance or injury resulting from use. Liability, if any, is limited to the replacement of products. No other warranty or guarantee of any kind is made by Belzona, express or implied, whether statutory, by operation of law or otherwise, including merchantability or fitness for a particular purpose. Nothing in the foregoing statement shall exclude or limit any liability of Belzona to the extent such liability cannot by law be excluded or limited.