

# CHEMICAL RESISTANCE OF BELZONA® 2311

FN 10057



	Chemical name (Synonym)	Chemical formula (CAS number)	Concentration	20 °C 68 °F	Other
Inorganic Acids	Carbonic acid	H <sub>2</sub> CO <sub>3</sub> (463-79-6)	-	Ex	-
	Fluorosilicic acid	H <sub>2</sub> SiF <sub>6</sub> (16961-83-4)	-	P	-
	Hydrobromic acid	HBr (10035-10-6)	10%	G	-
	Hydrochloric acid	HCl (7647-01-0)	25% 15%	G Ex	- -
	Hydrofluoric acid	HF (7664-39-3)	10%	Ex	-
	Nitric acid	HNO <sub>3</sub> (7697-37-2)	25% 15%	P M	- -
	Oleum		-	M	-
	Sulfuric acid	H <sub>2</sub> SO <sub>4</sub> (7664-93-9)	30% 20%	G Ex	- -
Organic Acids	Acetic acid (ethanoic acid)	CH <sub>3</sub> COOH (64-19-7)	10%	G	-
	Chloroacetic acid	ClCH <sub>2</sub> COOH (79-11-8)	-	M	-
	Chlorosulfonic acid (sulfurochloridic acid)	HSO <sub>3</sub> Cl (7790-94-5)	-	P	-
	Creosote oil		-	G	-
	Cresylic acid (cresol)	C <sub>7</sub> H <sub>8</sub> O (1319-77-3)	-	P	-
	Phenol	C <sub>6</sub> H <sub>5</sub> OH (108-95-2)	100%	P	-
	Resorcinol	C <sub>6</sub> H <sub>4</sub> (OH) <sub>2</sub> (108-46-3)	-	P	-
	Stearic acid	CH <sub>3</sub> (CH <sub>2</sub> ) <sub>16</sub> CO <sub>2</sub> H (57-11-4)	-	Ex	-
	Tartaric acid	C <sub>4</sub> H <sub>6</sub> O <sub>6</sub> (526-83-0)	-	Ex	-
Alcohols, Aldehydes and Ketones	Acetone	(CH <sub>3</sub> ) <sub>2</sub> CO (67-64-1)	-	M	-
	Amyl alcohol (1-Pentanol)	C <sub>5</sub> H <sub>11</sub> OH (71-41-0)	-	M	-
	Benzaldehyde	C <sub>6</sub> H <sub>5</sub> CHO (100-52-7)	-	M	-
	n-Butanol (butyl alcohol)	C <sub>4</sub> H <sub>9</sub> OH (71-36-3)	-	M	-
	Ethanol (ethyl alcohol)	CH <sub>3</sub> CH <sub>2</sub> OH (64-17-5)	-	M	-
	Ethylene glycol (ethan-1,2-diol, monoethylene glycol, MEG)	(CH <sub>2</sub> OH) <sub>2</sub> (107-21-1)	-	M	-
	Glycerol (glycerine, propane-1,2,3-triol)	HOCH <sub>2</sub> CH(OH)CH <sub>2</sub> OH (56-81-5)	-	M	-
	Isopropyl alcohol	C <sub>3</sub> H <sub>7</sub> OH (67-63-0)	-	M	-

Excellent	Ex	Suitable for all reasonable applications including immersion.
Good	G	Suitable for applications involving immersion for short periods, splashing and contact with fumes.
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Alcohols, Aldehydes and Ketones continued	Methanol (methyl alcohol)	CH <sub>3</sub> OH (67-56-1)	-	M	-
	Methyl ethyl ketone (MEK, butanone)	CH <sub>3</sub> C(O)CH <sub>2</sub> CH <sub>3</sub> (78-93-3)	-	M	-
	2-Methoxyethanol	C <sub>3</sub> H <sub>8</sub> O <sub>2</sub> (109-86-4)	-	M	-
	Propan-1-ol (Propyl alcohol)	CH <sub>3</sub> CH <sub>2</sub> CH <sub>2</sub> OH (71-23-8)	-	M	-
	Propylene glycol (1,2-Propanediol)	CH <sub>3</sub> CH(OH)CH <sub>2</sub> OH (57-55-6)	-	M	-
Alkalis	Ammonia	NH <sub>3</sub> (7664-41-7)	25% 10%	G Ex	- -
	Barium hydroxide	Ba(OH) <sub>2</sub> (17194-00-2)	-	Ex	-
	Calcium hydroxide (lime water)	Ca(OH) <sub>2</sub> (1305-62-0)	-	Ex	-
	Magnesium hydroxide (milk of magnesia)	Mg(OH) <sub>2</sub> (1309-42-8)	-	Ex	-
	Potassium hydroxide (caustic potash)	KOH (1310-58-3)	50% 25%	G Ex	- -
	Sodium hydroxide (caustic soda)	NaOH (1310-73-2)	50% 25%	G Ex	- -
Esters & Ethers	Amyl acetate	CH <sub>3</sub> COO(CH <sub>2</sub> ) <sub>4</sub> CH <sub>3</sub> (628-63-7)	-	M	-
	Butyl acetate	C <sub>6</sub> H <sub>12</sub> O <sub>2</sub> (123-86-4)	-	M	-
	Diethyl ether	(C <sub>2</sub> H <sub>5</sub> ) <sub>2</sub> O (60-29-7)	-	M	-
	Ethyl acetate	CH <sub>3</sub> COOCH <sub>2</sub> CH <sub>3</sub> (141-78-6)	-	M	-
	Isopropyl ether	C <sub>6</sub> H <sub>14</sub> O (108-20-3)	-	M	-
	Methyl acetate	CH <sub>3</sub> COOCH <sub>3</sub> (79-20-9)	-	M	-
Gases	Carbon dioxide (dry)	CO <sub>2</sub> (124-38-9)	-	Ex	-
	Carbon monoxide	CO (630-08-0)	-	Ex	-
	Hydrogen	H <sub>2</sub> (1333-74-0)	-	Ex	-
	Nitrogen	N <sub>2</sub> (7727-37-9)	-	Ex	-
Halogenated Halocarbons	Carbon tetrachloride (dry)	CCl <sub>4</sub> (56-23-5)	-	M	-
	Chlorobenzene (dry)	C <sub>6</sub> H <sub>5</sub> Cl (108-90-7)	-	M	-
	Chloroethane (dry)	C <sub>2</sub> H <sub>5</sub> Cl (75-00-3)	-	M	-
	Chloroform (dry)	CHCl <sub>3</sub> (67-66-3)	-	M	-
	Chloromethane (dry)	CH <sub>3</sub> Cl (74-87-3)	-	M	-

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Halogenated Halocarbons continued	Dry cleaning fluids		-	M	-
	Methylene chloride (dry) (dichloromethane)	CH <sub>2</sub> Cl <sub>2</sub> (75-09-2)	-	M	-
	Perchloroethylene (dry) (tetrachloroethylene)	Cl <sub>2</sub> C=CCl <sub>2</sub> (127-18-4)	-	M	-
	Trichloroethylene	C <sub>2</sub> HCl <sub>3</sub> (79-01-6)	-	M	-
Hydrocarbons	Aviation fuel (AVCAT, AVGAS, AVTAG, AVTUR)	N/A	-	G	-
	Benzene (benzol)	C <sub>6</sub> H <sub>6</sub> (71-43-2)	-	G	-
	Gasoline – Ethanol free (Petrol)		-	G	-
	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> (142-82-5)	-	G	-
	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)	-	G	-
	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)	-	G	-
	Kerosene	N/A (8008-20-6)	-	G	-
	Paraffin	N/A (8002-74-2)	-	G	-
	Petrolatum (Petroleum jelly)	(8009-03-8)	-	G	-
	Styrene	C <sub>6</sub> H <sub>5</sub> CH=CH <sub>2</sub> (100-42-5)	-	G	-
	Toluene (methylbenzene, phenylmethane, toluol)	C <sub>6</sub> H <sub>5</sub> CH <sub>3</sub> (108-88-3)	-	G	-
	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)	-	G	-
Miscellaneous	Brake fluid		-	G	-
	Emulsion paint		-	Ex	-
	Fertilizer solutions		-	Ex	-
	Grease		-	Ex	-
	Ink (water based)		-	Ex	-
	Mercury	Hg	-	Ex	-
	Oil/water mixtures		-	Ex	-
	Rubber latex emulsions		-	Ex	-
	Silicone oil		-	Ex	-
	Starch		-	Ex	-
	Turpentine		-	G	-
	Water, distilled (aerated)		-	Ex	-
	Water, fresh		-	Ex	-
	Water, mineral		-	Ex	-
Water, sea		-	Ex	-	
Wax emulsions		-	Ex	-	

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Oils - Mineral	Bunker oils (fuel oils)		-	G	-
	Crude oil, sweet		-	G	-
	Crude oil, sour		-	G	-
	Diesel oil		-	G	-
	Fuel oil		-	G	-
	Hydraulic oil petroleum based		-	G	-
	Lube oil		-	G	-
	Oil, petroleum (refined)		-	G	-
	Oil, petroleum (sour)		-	G	-
	Transformer oil		-	G	-
Oils - Vegetable/Animal	Castor oil		-	G	-
	Coconut oil		-	G	-
	Cod liver oil		-	G	-
	Corn oil		-	G	-
	Cottonseed oil		-	G	-
	Lard oil		-	G	-
	Linseed oil		-	G	-
	Olive oil		-	G	-
	Palm oil		-	G	-
	Pine oil		-	G	-
	Soybean oil		-	G	-
	Tall oil		-	G	-
	Tung oil		-	G	-
Salts	Aluminium chloride (dry)	AlCl <sub>3</sub> (7446-70-0)	-	Ex	-
	Aluminium sulphate	Al <sub>2</sub> (SO <sub>4</sub> ) <sub>3</sub> (10043-01-3)	-	Ex	-
	Alums		-	Ex	-
	Ammonium bicarbonate	(NH <sub>4</sub> )HCO <sub>3</sub> (1066-33-7)	-	Ex	-
	Ammonium carbonate	(NH <sub>4</sub> ) <sub>2</sub> CO <sub>3</sub> (506-87-6)	-	Ex	-
	Ammonium chloride	NH <sub>4</sub> Cl (12125-02-9)	-	Ex	-
	Ammonium phosphate	(NH <sub>4</sub> ) <sub>3</sub> PO <sub>4</sub> (10361-65-6)	-	Ex	-
	Ammonium nitrate	NH <sub>4</sub> NO <sub>3</sub> (6484-52-2)	-	Ex	-
	Ammonium sulfate	(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub> (7783-20-2)	-	Ex	-
	Barium carbonate	BaCO <sub>3</sub> (513-77-9)	-	Ex	-
	Barium chloride	BaCl <sub>2</sub> (10361-37-2)	-	Ex	-
Barium sulfate	BaSO <sub>4</sub> (7727-43-7)	-	Ex	-	

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Salts continued	Calcium carbonate	CaCO <sub>3</sub> (471-34-1)	-	Ex	-
	Calcium chloride	CaCl <sub>2</sub> (10043-52-4)	-	Ex	-
	Calcium hypochlorite	Ca(ClO) <sub>2</sub> (7778-54-3)	-	G	-
	Calcium sulphate	CaSO <sub>4</sub> (7778-18-9)	-	Ex	-
	Copper acetate	Cu(CH <sub>3</sub> COO) <sub>2</sub> (142-71-2)	-	Ex	-
	Copper chloride	CuCl <sub>2</sub> (7447-39-4)	-	Ex	-
	Copper nitrate	Cu(NO <sub>3</sub> ) <sub>2</sub> (3251-23-8)	-	Ex	-
	Copper sulphate	CuSO <sub>4</sub> (7758-98-7)	-	Ex	-
	Ferric chloride	FeCl <sub>3</sub> (7705-08-0)	-	Ex	-
	Ferric nitrate	Fe(NO <sub>3</sub> ) <sub>3</sub> (10421-48-4)	-	Ex	-
	Ferric sulphate	Fe <sub>2</sub> (SO <sub>4</sub> ) <sub>3</sub> (10028-22-5)	-	Ex	-
	Ferrous sulfate	FeSO <sub>4</sub> (7720-78-7)	-	Ex	-
	Lead acetate	Pb(CH <sub>3</sub> COO) <sub>2</sub> (301-04-2)	-	Ex	-
	Magnesium chloride	MgCl <sub>2</sub> (7786-30-3)	-	Ex	-
	Magnesium sulphate (Epsom salt)	MgSO <sub>4</sub> (7487-88-9)	-	Ex	-
	Nickel chloride	NiCl <sub>2</sub> (7718-54-9)	-	Ex	-
	Potassium bromide	KBr (7758-02-3)	-	Ex	-
	Potassium chlorate	KClO <sub>3</sub> (3811-04-9)	-	Ex	-
	Potassium chloride	KCl (7447-40-7)	-	Ex	-
	Potassium cyanide	KCN (151-50-8)	-	Ex	-
	Potassium ferrocyanide	K <sub>4</sub> [Fe(CN) <sub>6</sub> ] (13943-58-3)	-	Ex	-
	Potassium iodide	KI (7681-11-0)	-	Ex	-
	Potassium nitrate	KNO <sub>3</sub> (7757-79-1)	-	Ex	-
Potassium permanganate	KMnO <sub>4</sub> (7722-64-7)	-	Ex	-	
Potassium sulfate	K <sub>2</sub> SO <sub>4</sub> (7778-80-5)	-	Ex	-	
Potassium sulphite	K <sub>2</sub> SO <sub>3</sub> (10117-38-1)	-	G	-	

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Salts continued	Silver nitrate	AgNO <sub>3</sub> (7761-88-8)	-	Ex	-
	Sodium acetate	CH <sub>3</sub> COONa (127-09-3)	-	Ex	-
	Sodium borate (borax)	Na <sub>2</sub> B <sub>4</sub> O <sub>7</sub> (1303-96-4)	-	Ex	-
	Sodium bromide	NaBr (7647-15-6)	-	Ex	-
	Sodium chlorate	NaClO <sub>3</sub> (7775-09-9)	-	Ex	-
	Sodium chloride	NaCl (7647-14-5)	-	Ex	-
	Sodium chromate	Na <sub>2</sub> CrO <sub>4</sub> (7775-11-3)	-	Ex	-
	Sodium cyanide	NaCN (143-33-9)	-	Ex	-
	Sodium fluoride	NaF (7681-49-4)	-	Ex	-
	Sodium hypochlorite (bleach)	NaClO (7681-52-9)	12%	G	-
	Sodium nitrate	NaNO <sub>3</sub> (7631-99-4)	-	Ex	-
	Sodium phosphate (dibasic)	Na <sub>2</sub> HPO <sub>4</sub> (7558-79-4)	-	Ex	-
	Sodium phosphate (tribasic)	Na <sub>3</sub> PO <sub>4</sub> (7601-54-9)	-	Ex	-
	Sodium silicate	Na <sub>2</sub> SiO <sub>3</sub> (6834-92-0)	-	Ex	-
	Sodium sulphate	Na <sub>2</sub> SO <sub>4</sub> (7757-82-6)	-	Ex	-
	Sodium sulphide	Na <sub>2</sub> S (1313-82-2)	-	Ex	-
Stannous chloride (tin chloride)	SnCl <sub>2</sub> (7772-99-8)	-	Ex	-	
Zinc chloride	ZnCl <sub>2</sub> (7646-85-7)	-	Ex	-	
Zinc sulfate	ZnSO <sub>4</sub> (7733-02-0)	-	Ex	-	

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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.