

# CHEMICAL RESISTIVITY TABLE

## LIQUID RUBBER ELASTOMER MODIFIED ASPHALT EMULSION MEMBRANE

Chemical name	Formula	Concentration	Acceptability	Chemical name	Formula	Concentration	Acceptability
Acetic acid	CH <sub>3</sub> COOH	10%	Limited	Sodium dichromate	Na <sub>2</sub> CrO <sub>7</sub>	Saturated	Suitable
Acetic acid	CH <sub>3</sub> COOH	50%	Unsuitable	Sodium cyanide	NaCN	All concentrations	Unsuitable
Aluminum chloride	NH <sub>4</sub> Cl	Saturated	Suitable	Sodium fluoride	NaF	Saturated	Suitable
Aluminum sulfate	NH <sub>4</sub> SO <sub>4</sub>	Saturate	Suitable	Sodium hydroxide	NaOH	50% w/w	Suitable
Ammonium chloride	NH <sub>4</sub> Cl	Saturated	Suitable	Sodium hypochlorite	NaOCl	1% av. Cl <sub>2</sub>	Limited
Ammonium nitrate	NH <sub>4</sub> NO <sub>3</sub>	All concentrations	Unsuitable	Sodium hypochlorite	NaOCl	10% av. Cl <sub>2</sub>	Unsuitable
Ammonium sulfate	(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>	Saturated	Suitable	Sodium metasilicate	Na <sub>2</sub> SiO <sub>3</sub>	Saturated	Suitable
Aqua regia	HCl-H NO <sub>3</sub>	All concentrations	Unsuitable	Sodium nitrate	NaNO <sub>3</sub>	Saturated	Suitable
				Sodium nitrite	NaNO <sub>2</sub>	Saturated	Suitable
Barium carbonate	BaCO <sub>3</sub>	Saturated	Suitable	Sodium orthophosphate	Na <sub>3</sub> PO <sub>4</sub>	Saturated	Suitable
Barium chloride	BaCl <sub>2</sub>	Saturated	Suitable	Sodium perborate	Na <sub>2</sub> B <sub>4</sub> O <sub>7</sub> ·H <sub>2</sub> O <sub>2</sub>	Saturated	Suitable
Barium hydroxide	Ba(OH) <sub>2</sub>	Saturated	Suitable Barium sulfate	Sodium perchlorate	NaClO <sub>4</sub>	All concentrations	Unsuitable
				Sodium permanganate	NaMnO <sub>4</sub>	All concentrations	Unsuitable
BaSO <sub>4</sub>		Saturated	Suitable	Sodium sulfate	Na <sub>2</sub> SO <sub>4</sub>	Saturated	Suitable
Borax (sodium tetraborate)	Na <sub>2</sub> B <sub>4</sub> O <sub>7</sub>	Saturated	Suitable				
Bromine (gas or liquid)	Br <sub>2</sub>	All concentrations	Unsuitable	Sucrose	C <sub>6</sub> O <sub>6</sub> H <sub>12</sub>	Saturated	Suitable
				Sulfuric acid	H <sub>2</sub> SO <sub>4</sub>	50% w/w	Suitable
Calcium carbonate	CaCO <sub>3</sub>	Saturated	Suitable	Sulfuric acid	H <sub>2</sub> SO <sub>4</sub>	93% w/w	Unsuitable
Calcium chloride	CaCl <sub>2</sub>	Saturated	Suitable				
Calcium cyanide	Ca(CN) <sub>2</sub>	All concentrations	Unsuitable	Tin (stannous) chloride	SnCl <sub>2</sub>	Saturated	Suitable
Calcium hydroxide (lime)	Ca(OH) <sub>2</sub>	Saturated	Suitable	Tin (stannous) sulfate	Sn SO <sub>4</sub>	Saturated	Limited
Calcium nitrate	Ca(NO <sub>3</sub> ) <sub>2</sub>	Saturated	Suitable Calcium sulfate				
				Urea	CO(NH <sub>2</sub> ) <sub>2</sub>	Saturated	Suitable
CaSO <sub>4</sub>		Saturated	Suitable				
Carbon dioxide (gas)	CO <sub>2</sub>	All concentrations	Suitable	Zinc oxide	ZnO	Saturated	Suitable
Chlorine	Cl <sub>2</sub> gas	All concentrations	Unsuitable	Zinc chloride	ZnCl <sub>2</sub>	Saturated	Suitable
Chromic acid	H <sub>2</sub> CrO <sub>7</sub>	All concentrations	Unsuitable	Zinc sulfate	ZnSO <sub>4</sub>	Saturated	Suitable
Copper carbonate	CuCO <sub>3</sub>	Saturated	Suitable				
Copper (cupric) chloride	CuCl <sub>2</sub>	Saturated	Suitable				
Copper (cupric) hydroxide	Cu(OH) <sub>2</sub>	Saturated	Suitable				
Copper (cupric) nitrate	Cu(NO <sub>3</sub> ) <sub>2</sub>	Saturated	Suitable				
Copper (cupric) sulfate	CuSO <sub>4</sub>	Saturated	Suitable				
Corn Syrup	C <sub>6</sub> O <sub>6</sub> H <sub>12</sub>	<50% w/w	Suitable				
Corn Syrup	C <sub>6</sub> O <sub>6</sub> H <sub>12</sub>	>50% w/w	Limited				
Ethyl alcohol	C <sub>2</sub> H <sub>5</sub> OH	<35% w/w	Limited				
Ethyl alcohol	C <sub>2</sub> H <sub>5</sub> OH	>35% w/w	Unsuitable				
Glycerol	C <sub>3</sub> O <sub>3</sub> H <sub>6</sub>	<35% w/w	Limited\				
Glycerol	C <sub>3</sub> O <sub>3</sub> H <sub>6</sub>	>35% w/w	Unsuitable				
Hydrochloric acid	HCl	35% w/w (conc.)	Unsuitable				
Hydrocyanic acid	HCN	All concentrations	Unsuitable				
Hydrogen (gas)	H <sub>2</sub>	All concentrations	Unsuitable				
Hydrogen peroxide	H <sub>2</sub> O <sub>2</sub>	5% w/w	Limited				
Hydrogen peroxide	H <sub>2</sub> O <sub>2</sub>	>20% w/w	Unsuitable				
Iron (ferrous) amm. sulfate	Fe(NH <sub>4</sub> )SO <sub>4</sub>	Saturated	Suitable				
Iron (ferrous) carbonate	FeCO <sub>3</sub>	Saturated	Suitable				
Iron (ferrous) chloride	FeCl <sub>2</sub>	Saturated	Suitable				
Iron (ferrous) hydroxide	Fe(OH) <sub>2</sub>	Saturated	Suitable				
Iron (ferrous) sulfate	FeSO <sub>4</sub>	Saturated	Suitable				
Iron (ferric) carbonate	Fe <sub>2</sub> (CO <sub>3</sub> ) <sub>3</sub>	Saturated	Suitable				
Iron (ferric) chloride	FeCl <sub>3</sub>	Saturated	Unsuitable				
Iron (ferric) hydroxide	Fe(OH) <sub>3</sub>	Saturated	Suitable				
Iron (ferric) nitrate	Fe(NO <sub>3</sub> ) <sub>3</sub>	Saturated	Unsuitable				
Iron (ferric) sulfate	Fe <sub>2</sub> (SO <sub>4</sub> ) <sub>3</sub>	Saturated	Limited				
Magnesium carbonate	MgCO <sub>3</sub>	Saturated	Suitable				
Magnesium chloride	MgCl <sub>2</sub>	Saturated	Suitable				
Magnesium hydroxide	Mg(OH) <sub>2</sub>	Saturated	Suitable				
Magnesium sulfate	MgSO <sub>4</sub>	Saturated	Suitable				
Methyl alcohol	CH <sub>3</sub> OH	<35%	Limited				
Methyl alcohol	CH <sub>3</sub> OH	>35%	Unsuitable				
Nickel carbonate	NiCO <sub>3</sub>	Saturated	Suitable				
Nickel chloride	NiCl <sub>2</sub>	Saturated	Suitable				
Nickel hydroxide	Ni(OH) <sub>2</sub>	Saturated	Suitable				
Nickel sulfate	NiSO <sub>4</sub>	Saturated	Suitable				
Nitric acid	HNO <sub>3</sub>	35% w/w	Limited				
Phosphoric acid (ortho)	H <sub>3</sub> PO <sub>4</sub>	75% w/w	Suitable				
Potassium carbonate	K <sub>2</sub> CO <sub>3</sub>	Saturated	Limited				
Potassium chlorate	KClO <sub>3</sub>	All concentrations	Unsuitable				
Potassium chloride	KCl	Saturated	Suitable				
Potassium citrate	K <sub>2</sub> C <sub>6</sub> O <sub>7</sub>	Saturated	Suitable				
Potassium cyanide	KCN	All concentrations	Unsuitable				
Potassium hydroxide	KOH	45% w/w	Suitable				
Potassium perchlorate	KClO <sub>4</sub>	All solutions	Unsuitable				
Potassium permanganate	KMnO <sub>4</sub>	All solutions	Unsuitable				
Potassium nitrate	KNO <sub>3</sub>	Saturated	Limited				
Potassium sulfate	K <sub>2</sub> SO <sub>4</sub>	Saturated	Suitable				
Sodium acid phosphate	NaH <sub>2</sub> PO <sub>4</sub>	Saturated	Limited				
Sodium bisulfite	NaHSO <sub>3</sub>	Saturated	Suitable				
Sodium bromide	NaBr	Saturated	Suitable				
Sodium carbonate	Na <sub>2</sub> CO <sub>3</sub>	Saturated	Suitable				
Sodium chlorate	NaClO <sub>3</sub>	All concentrations	Unsuitable				
Sodium chloride	NaCl	Saturated	Suitable				

### Disclaimer

The information provided here was determined in the Lafarge Asphalt Engineering Laboratories using Liquid Rubber sprayed and cured using the recommended procedures. Samples of Liquid Rubber were immersed in the solutions shown for 90 days at room temperature (20±2°C) before examination.

The information is provided in good faith and is accurate to the best of our knowledge. Results may vary if the Liquid Rubber is incorrectly applied or if unknown contaminants are present.

These data provide no guarantee of performance and Lafarge accepts no responsibility for any problems which might arise as a result of exposure of Liquid Rubber to any of the chemicals described.

### Additional notes:

- Performance was evaluated by determining the strength of samples before and after immersion in the chemical solutions shown for 180 days at room temperature (22±3°C) according to the method described in ASTM D-412.
- Most of the results were obtained using saturated solutions of the chemical in water. Although it may generally be assumed that a saturated solution represents the worst case, results may differ if more dilute solutions are employed.
- Most of the chemicals listed are solutions of inorganic compounds in water. With rare exceptions Liquid Rubber is not recommended for applications in which it is to be in contact with organic compounds such as oils or solvents.
- The list shown is not exhaustive. Please consult with your Liquid Rubber Technical Representative for any chemicals, or concentrations thereof which may be of interest but are not on the list.
- Liquid Rubber is not recommended for use with strong oxidizing agents.
- All testing was carried using pure chemicals. In some cases the presence of even small quantities of contaminants may dramatically affect the results.
- Please contact the Lafarge Asphalt Engineering Technical Department for information about chemicals not included on this list, or if more than one chemical is present in the system.
- "Limited" indicates that occasional contact with the chemical indicated may be tolerated but that continuous exposure is unacceptable. In cases where limited acceptability is indicated, please consult with the Lafarge Asphalt Engineering Technical Department.

Liquid Rubber