

MSDS MATERIAL SAFETY DATA SHEET BELOWGRADE

According to Regulation (EC) 1907/2006

SECTION I MATERIAL IDENTIFICATION

TRADE NAME: LIQUID RUBBER® BELOWGRADE - MATERIAL USE: Protective Coating - EMERGENCY TEL +31 (0)297 587866 - CHEMICAL FAMILY: Water suspension of petroleum derived hydrocarbons (polymer modified emulsified asphalt) and inert fillers. - T.D.G. CLASSIFICATION: NON REGULATED - WHIMIS CLASSIFICATION: NON REGULATED

SECTION II HAZARDS IDENTIFICATION

Hazards: n/a

SECTION III COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT	CAS#	% (BY MASS)	LC50 (ppm)	LD50 (mg/kg)
			(rat inhal)	(rat oral)
Complex mixture of bitumens	8052-42-4	40-70	>2000	>5000
Anionic surfactants	Proprietary	0.5-2.0	>2000	>5000
Water	7732-18-5	30-60	n/a	n/a
Polymer dispersion	n/a	5-25	n/a	n/a
Plasticiser	64742-65-0	5-10	n/a	n/a

SECTION IV EMERGENCY AND FIRST AID PROCEDURES

Inhalation: n/a - Skin: This is an alkaline product. If splashed on the skin immediately wash thoroughly with fresh water. If the product has dried on the skin massage the area with medical grade mineral oil, baby oil or edible oil, then wash with soap and water. If irritation persists seek medical attention. - Eyes: Flush thoroughly with fresh water for at least ten minutes. Seek medical attention. Ingestion: DO NOT INDUCE VOMITING. Seek medical attention.

SECTION V FIRE & EXPLOSION DATA

Means of extinction: n/a - Sensitivity to mechanical impact/static - discharge: n/a - Flash point (method): n/a (non-combustible)

Upper flammable limits % : n/a - Lower flammable limits % : n/a - Auto-ignition temperature: n/a - Special fire fighting instructions: n/a - Unusual fire and explosion hazards: Product will not burn but may splatter if temperature exceeds the boiling point of water.

SECTION VI SPILL PROCEDURES

In the event of a spill: Dike and contain, transfer to containers for recovery or disposal. Keep out of sewers. Waste disposal method: Follow federal, provincial and local regulations regarding disposal.

SECTION VII SPECIAL PRECAUTIONS

Storage and handling conditions: Keep containers tightly closed when not in use. KEEP FROM FREEZING. Special shipping information: Not regulated by the Transportation of Dangerous Goods Regulations.

SECTION VIII HEALTH INFORMATION

Exposure limit: n/a - Inhalation: n/a - Skin: Adhesion - Eyes: Adhesion, irritation - Ingestion: Blockage of digestive and/or respiratory tract. Chronic effects: n/a

SECTION IX PHYSICAL PROPERTIES

Odour and appearance: Brown liquid, slight resinous odour. - Odour threshold: n/a - Specific gravity: 1.00 (approx.)

Coefficient of water/oil distribution: n/a - Vapour pressure (mm Hg): 17 @20°C (water) - Boiling point: 100°C (water) - Freezing point: 0°C

pH: 7-13 - Vapour density (air = 1): >1 - Evaporation rate (nBuAcetate = 1): <1 - Volatiles %: 40-60 (water) - Solubility in water: partially soluble

SECTION X REACTIVITY DATA

Chemical stability: Stable - Incompatible materials: Will react with alkaline sensitive materials such as acids and certain metals. - Hazardous decomposition products: Avoid heating above 200°C. At elevated temperatures hazardous vapours can be released, including carbon monoxide, hydrogen chloride, organic acids and aldehydes. - Hazardous polymerization: Will not occur.

SECTION XI SPECIAL PROTECTION

Respiratory protection: n/a - Ventilation: n/a - Protective gloves: Recommended - Eye protection: safety glasses/splash goggles recommended - Other protective equipment: Long sleeves, loose clothing recommended.

SECTION XII ECOLOGICAL INFORMATION

Ecological information: Toxicity: n/a - Ecotoxicity effects: n/a

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SECTIE XIII DISPOSAL CONSIDERATIONS

Instructions for removal: Use soap and warm water to clean tools. Waste disposal method: Keep out of sewers. Dispose of in accordance with applicable legal provisions. Comply with federal, state or local regulations regarding disposal.

SECTIE XIV TRANSPORT INFORMATION

Transport information: No dangerous goods as defined by the transport regulations - ADR/RID, IMDG, ICAO/IATA-DGR. - VN-number: n.v.t. - Loadingname: n.v.t. - Transport hazard class(es): n.v.t. - Packing group: n.v.t. - Special precautions for users: n.v.t.

SECTIE XV REGULATORY INFORMATION

Regulatory information: n/a

SECTIE XVI PREPARED BY

LRE Coatings B.V. – Preparation date: 1-jan-2015

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BelowGrade

WATERPROOFING AND PROTECTION FOR CONCRETE SURFACES AND ICF'S

BelowGrade is a water based elastomeric bitumen membrane applied as a dual fluid system forming an 'instant-set' coating. When cured this coating functions as a high quality, protective membrane providing excellent protection for concrete surfaces from water penetration, salt or other chemical attack. When cured the membrane is highly elastic and will bridge small cracks that appear in the concrete on settling and is seamless and fully adhered to the surface so no water can get behind the coating. Liquid Rubber BelowGrade is cold applied using an airless dual pump applicator for safety and efficiency.

BelowGrade is a heavy-duty membrane used wherever concrete needs to be protected from the effects of water, salt or chemical damage both above and below grade. BelowGrade will not degrade in sunlight. Applications include poured concrete and block foundations, retaining walls, tunnel liners, parking deck structures, concrete water and wastewater containment tanks and ICF (insulated concrete forms).

BelowGrade is a water based, environmentally safe alternative to conventional hot applied bitumen or solvent based protective coatings and easier to use than pre-formed plastic sheeting. BelowGrade provides excellent waterproofing and chemical resistance through a highly flexible seamless membrane that resists cracking and aging. BelowGrade is unaffected by a wide range of mild acids, alkalis, salts and other inorganic chemicals. Unlike adhesive applied sheet membranes, BelowGrade prevents tracking of water underneath the membrane, providing superior protection.

- FREE OF FLAMMABLE SOLVENTS • NON-TOXIC • ODOURLESS AND WATER BASED

APPLICATION

BelowGrade is spray applied using equipment and training provided by Liquid Rubber. BelowGrade should be applied to a dry surface, free of dirt, debris, oil or grease and should not be applied when the ambient temperature is below 5°C, or rain is expected within 24 hrs of application. For best results apply in multiple thin coats. Prime coat of the Basic Primer may be applied to open or course concrete surfaces prior to the instant setting application. BelowGrade is applied between 0.4-0.7 m²/litre, depending on the required membrane thickness. Typically, the product is non-tacky in one minute and is largely cured within 48 hrs. BelowGrade does not require a protection board to be used and backfilling can begin immediately or as per regional regulations. A crew can apply 500-700m² of membrane per day.

LIMITATIONS

BelowGrade should not be applied when the ambient temperature is below 5°C. The uncured membrane may be damaged if frozen and should not be applied to wet or frozen surfaces or directly prior to rain. Some surface base coat materials such as coal tar are unsuitable for use with BelowGrade. Please consult technical service with any questions.

PHYSICAL PROPERTIES (Liquid)	
PROPERTY	TYPICAL RESULTS
Colour	Brown to black
Specific gravity (liquid) g/cm ³	Approx. 1.0
Odour	None
Volatile Organic Compound	Contains no solvents
% Solids (wt)	60 - 63
Viscosity, SSF @ 25°C, seconds	18 - 30
pH	10 - 12

PERFORMANCE DATA (Cured membrane)	
PROPERTY	TYPICAL RESULTS
Colour	Black
Specific gravity, g/cm ³	Approx. 1.1
Chemical resistance	Resists salt water and most inorganic solutions
Impact Resistance CGSB 37-GP 56@23C, J	19.5
Impact Resistance CGSB 37-GP-56@-10C, J	27.1)
Water tightness after impact	Passed (no leakage)
Accelerated Weathering (Xenon arc)	No deterioration of the film,
ASTM G 155, D 412, 250 hrs	>90% retention of original tensile strength
Tensile Strength ASTM D 412, Kpa(psi)	150 (22)
Elongation, %	>1300%
Recovery ASTM D 412, %	90%
Hardness, Durometer 00	76 - 78
Hardness, Shore A	15 - 17
Hardness, Shore D	3-4
Adhesion to concrete ASTM C 907, psi	111
Puncture resistance CGSB 37-GP-56	Passed (no punctures)
Sag flow CGSB 37.58-M86	None
Water absorption, CGSB 37-GP-56	1.83
Crack bridging ASTM C 1305(B), -20oC fo	No visible cracks
70 cycles(unaged), 30 cycles(aged)	No visible cracks
Low temperature flexibility	Pass (-20oC)
Abrasion resistance ASTM F 1677	Good - very good
Water vapor permeance ASTM E 96 ng/Pa.s.m ² (gr/h-ft ²)	6.57 (0.33)
Dielectric strength kV/mm (V/m)	14.2 (360)

COVERAGE			
Cured Membrane		Coverage	
Mils	mm	ft ² /l	m ² /l
40	1.00	7.93	0.74
80	2.00	3.96	0.37
120	3.00	2.64	0,24

CAUTION

For industrial use only. Keep out of reach of children. Avoid storage below 5°C. Please consult the Material Safety Data Sheet before using BelowGrade. BelowGrade is mildly alkaline. When applying this product observe normal safety precautions, wear gloves, eye protection and other suitable protective equipment. For further information please consult the product MSDS.

TECHNICAL SERVICE

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