

KELMAR® Merdek Membrane Resin - Part A

SECTION 1. IDENTIFICATION

Product Identifier	KELMAR® Merdek Membrane Resin - Part A
Other Means of Identification	N/A
Product Family	Epoxy Resins
Recommended Use	A water-proofing membrane used as part of an epoxy coating system.
Restrictions on Use	This product is designed as part of a system in 2 parts and must be mixed, according to manufacturer's instructions, with the appropriate partner product before use.
Manufacturer	R&D Technical Solutions Ltd., 7000 Davand Drive, Mississauga, ON, L5T 1J5, 905-795-9900, www.rdsolutions.ca
Emergency Phone No.	CANUTEC, 1-613-996-6666, 24 HR

SECTION 2. HAZARD IDENTIFICATION

Classification

Skin irritation - Category 2; Serious eye damage - Category 2; Skin sensitization - Category 1; Reproductive toxicity - Category 2; Aquatic hazard (Chronic) - Category 2

Label Elements



Signal Word:

Warning

Hazard Statement(s):

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H361	Suspected of damaging fertility.
H411	Toxic to aquatic life with long lasting effects.

Precautionary Statement(s):

P202	Do not handle until all safety precautions have been read and understood.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264	Wash hands and skin thoroughly after handling.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313	If eye irritation persists: Get medical advice/attention.
P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P314	Get medical advice or attention if you feel unwell.

P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 P308 + P311 If exposed or concerned: Call a POISON CENTRE or doctor.
 Storage:
 P403 + P235 Store in a well-ventilated place. Keep cool.
 P410 Protect from sunlight.
 Disposal:
 P501 Dispose of contents and container in accordance with local, regional, national and international regulations.
Other Hazards
 None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture:

Chemical Name	CAS No.	%	Other Identifiers
Diglycidyl ether of bisphenol A-based epoxy resins, low molecular weight solids	25068-38-6	35-40	
Alkyl Glycidly Ether	68609-97-2	15-20	
4-Nonylphenol, branched (mixed isomers)	84852-15-3	< 2.5	

Notes

Any concentration shown as a range is to protect confidentiality or due to batch variations. This product contains a blocked polyisocyanate which is considered essentially unreactive at room temperature even though it may contain a small amount of excess blocking agent. Generation of free diisocyanate and blocking agent vapours are expected in the oven during curing or during any accidental heating of this product above the unblocking temperature.

SECTION 4. FIRST-AID MEASURES

First-aid Measures

Inhalation

Take precautions to ensure your own safety before attempting rescue (e.g. wear appropriate protective equipment). Remove source of exposure or move to fresh air. Keep at rest in a position comfortable for breathing. Asthmatic type symptoms may occur immediately or be delayed for several hours. Treatment is symptomatic. If breathing is difficult, trained personnel should administer emergency oxygen if advised to do so by Poison Centre or doctor. Extreme asthmatic reactions that may occur in sensitized persons can be life threatening. Get medical attention immediately. Administer oxygen or artificial respiration as needed.

Skin Contact

Avoid direct contact. Wear chemical protective clothing if necessary. Take off immediately contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Quickly and gently blot or brush away excess chemical. If readily available, apply a polyglycol-based cleanser (e.g. Colorimetric Laboratories Inc. (CLI) D-TAM™ Skin Cleanser) or corn oil. Wash with soap and warm water and pat dry. IF polyglycol-based cleanser is not available, wash with soap and warm water for 15 minutes. If skin irritation or a rash occurs, get medical advice or attention. Thoroughly clean clothing, shoes and leather goods before reuse or dispose of safely.

Eye Contact

Immediately rinse the contaminated eye(s) with lukewarm, gently flowing water for 15-20 minutes, while holding the eyelid(s) open. Remove contact lenses, if present and easy to do. Continue eye irrigation for not less than 15 minutes. If eye irritation persists, get medical advice or attention.

Ingestion

Rinse mouth with water. Do not induce vomiting. Immediately call a Poison Centre or doctor.

First-aid Comments

Some of the first-aid procedures recommended here require advanced first-aid training. This compound contains a skin sensitizer. An individual having a dermal or pulmonary sensitization reaction to this material should be removed from further exposure to any diisocyanate.

Most Important Symptoms and Effects, Acute and Delayed

This product contains a blocked polyisocyanate which is considered essentially unreactive at room temperature even though it may contain a small amount of excess blocking agent. Generation of free diisocyanate and blocking agent vapours are expected in the oven during curing or during any accidental heating of this product above the unblocking temperature. In sensitized people, exposure to a very small amount of product can cause symptoms including wheezing, difficult breathing, sneezing and runny or blocked nose. Can cause death. Symptoms can develop immediately following exposure or hours later. Repeated exposure will make the reaction worse. Skin sensitizer. May cause an allergic skin reaction in some people. In sensitized people, contact with a very small amount of product can cause an allergic reaction. Symptoms include redness, rash, itching and swelling. This reaction can spread from the hands or arms to the face and body. Repeated exposure will make the reaction worse.

Immediate Medical Attention and Special Treatment

Target Organs

This product is unlikely to target specific organs. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

Special Instructions

Not applicable.

Medical Conditions Aggravated by Exposure

Asthma, skin allergies.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Carbon dioxide, dry chemical powder or appropriate foam. Water may not be effective to extinguish fire. Water may cause frothing, which may be violent and could endanger personnel close to the fire. However, a water spray or fog that is carefully applied to the surface of the liquid, preferably with a fine spray or fog nozzle, will cause frothing that will blanket and extinguish the fire.

Unsuitable Extinguishing Media

Do not direct a solid stream of water or foam into hot, burning pools; this may cause frothing and increase fire intensity.

Specific Hazards Arising from the Product

Contain fire water runoff if possible - may cause environmental damage. During a fire, smoke may contain the original material in addition to combustion products which may be toxic and/or irritating. Heat is generated when product mixes with water. Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. In a fire, the following hazardous materials may be generated: very toxic carbon monoxide, carbon dioxide; corrosive, oxidizing nitrogen oxides; extremely hazardous hydrogen cyanide. Isocyanate or Isocyanic Acid.

Special Protective Equipment and Precautions for Fire-fighters

Fight fire from a safe distance or a protected location. Do NOT apply water directly to spill. Dike and recover contaminated water for appropriate disposal.

Fire-fighters may enter the area if positive pressure SCBA and full Bunker Gear is worn.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures

Use the personal protective equipment recommended in Section 8 of this safety data sheet. Increase ventilation to area or move leaking container to a well-ventilated and secure area.

Environmental Precautions

Do not allow into any sewer, on the ground or into any waterway. If the spill is inside a building, prevent product from entering drains, ventilation systems and confined areas.

Methods and Materials for Containment and Cleaning Up

Review Section 7 (Handling) of this safety data sheet before proceeding with clean-up. Stop or reduce leak if safe to do

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so. Do not direct water at spill or source. Contain and soak up spill with absorbent that does not react with spilled product. Suitable absorbents are: clay, dirt, sand, Milsorb® place used absorbent into suitable, covered, labelled containers for disposal. Contaminated absorbent poses the same hazard as the spilled product.

Other Information

Report spills to local health, safety and environmental authorities, as required.

SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling

Obtain special instructions before use. Avoid breathing in this product. Avoid generating vapours or mists. Prevent all skin contact. Wear personal protective equipment to avoid direct contact with this chemical. Avoid ALL unprotected contact with this product or with contaminated equipment/surfaces. General hygiene considerations: do NOT eat, drink or store food in work areas. Wash hands thoroughly after handling this material. Immediately remove contaminated clothing using the method that minimizes exposure. Thoroughly clean clothing, shoes and leather goods before reuse or dispose of safely.

Conditions for Safe Storage

Protect from conditions listed in Conditions to Avoid in Section 10 (Stability and Reactivity). Store in an area that is: well-ventilated. Minimum storage temperature: 0°C (32°F)

Maximum storage temperature: 50°C (122°F)

Empty containers may contain hazardous residue. Store separately. Keep closed. Follow all precautions given on this safety data sheet. Comply with all applicable health and safety regulations, fire and building codes.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Not available.

Consult local authorities for provincial or state exposure limits. When the product is heated (i.e. during processing or thermal decomposition conditions), there is a potential for the release of isocyanate vapours. The sum of 2,4 and 2,6 isomer concentration should not exceed the guideline limits.

Toluene Diisocyanate Mixed Isomers (26471-62-5)

US ACGIH Threshold Limit Values:

Time weighted average 0.001ppm

Short term exposure limit 0.005 ppm

Skin Dermal - absorption possible

A history of eczema or respiratory allergies such as hay fever, are possible reasons for medical exclusion from isocyanate areas. Applicants who have a history of adult asthma should be restricted from work with isocyanates; applicants with a history or prior isocyanate sensitization should be excluded from further work with isocyanates. Once a worker has been diagnosed as sensitized to any isocyanate, no further exposure can be permitted.

Appropriate Engineering Controls

During the unblocking process for this product, isocyanate and blocking agent exposure levels should be monitored. Use local exhaust ventilation, if general ventilation is not adequate to control amount in the air. Do not allow product to accumulate in the air in work or storage areas, or in confined spaces. Provide eyewash and safety shower if contact or splash hazard exists.

Individual Protection Measures

Eye/Face Protection

Wear chemical safety goggles. Wear chemical safety goggles and face shield when contact is possible.

Skin Protection

Chemical-resistant, impervious gloves which comply with an approved standard should be worn at all times when handling. Use personal protective equipment as required. Wear chemical protective clothing e.g. gloves, aprons, boots.

Butyl rubber, nitrile rubber, neoprene rubber.

Respiratory Protection

Not normally required if product is used as directed. In case of inadequate ventilation wear respiratory protection. During spraying, wear suitable respiratory equipment. For non-routine or emergency situations: wear a NIOSH approved air-purifying respirator with an appropriate cartridge.

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SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Basic Physical and Chemical Properties

Appearance	Yellowish viscous liquid. Particle Size: Not applicable
Odour	Phenolic (4-Nonylphenol, branched (mixed isomers))
Odour Threshold	Not available
pH	Not available
Melting Point/Freezing Point	Not available (melting); Not available (freezing)
Initial Boiling Point/Range	Not available
Flash Point	> 150 °C (302 °F) (Alkyl Glycidly Ether)
Evaporation Rate	Not available
Flammability (solid, gas)	Not available
Upper/Lower Flammability or Explosive Limit	Not available (upper); Not available (lower)
Vapour Pressure	Not available
Vapour Density (air = 1)	Not available
Relative Density (water = 1)	1.048
Solubility	Not available in water; Not available (in other liquids)
Partition Coefficient, n-Octanol/Water (Log Kow)	Not available
Auto-ignition Temperature	Not available
Decomposition Temperature	Not available
Viscosity	Not available (kinematic); Not available (dynamic)
Other Information	
Physical State	Liquid
Molecular Formula	Not applicable
Molecular Weight	Not applicable
Bulk Density	Not available
Surface Tension	Not available
Critical Temperature	Not available
Electrical Conductivity	Not available
Vapour Pressure at 50 deg C	Not available
Saturated Vapour Concentration	Not available
VOC	<5 g/l-water

SECTION 10. STABILITY AND REACTIVITY

Reactivity

Not reactive under normal conditions of use.

Chemical Stability

Normally stable.

Possibility of Hazardous Reactions

Polymerizes in the presence of aliphatic amines.

Conditions to Avoid

High temperatures. Open flames, sparks, static discharge, heat and other ignition sources. Temperatures above 120.0 °C (248.0 °F)

Incompatible Materials

Avoid unintended contact with amines.

Hazardous Decomposition Products

Can include, but not limited to: very toxic carbon monoxide, carbon dioxide; corrosive, oxidizing nitrogen oxides; extremely hazardous hydrogen cyanide, isocyanate, isocyanic acid.

SECTION 11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure

Skin contact; eye contact; ingestion; skin absorption.

Acute Toxicity

Chemical Name	LC50	LD50 (oral)	LD50 (dermal)
Diglycidyl ether of bisphenol A-based epoxy resins, low molecular weight solids	Not applicable	> 15,000 mg/kg (rat)	23,000 mg/kg (rabbit)
Alkyl Glycidly Ether	Not available	17100-1920 mg/kg (rat)	> 4500 mg/kg (rabbit)
4-Nonylphenol, branched (mixed isomers)		> 5000 mg/kg (rat)	> 5000 mg/kg

LC50: No information was located.

Oral ATEmix = 8645.94 mg/kg

Dermal ATEmix = 7138.17 mg/kg

Skin Corrosion/Irritation

There is limited evidence of moderate or severe irritation. Symptoms include slight redness and swelling.

Serious Eye Damage/Irritation

May cause mild irritation based on information for closely related chemicals. Symptoms include sore, red eyes, and tearing. The vapour also irritates the eyes.

STOT (Specific Target Organ Toxicity) - Single Exposure

Inhalation

May cause nose and throat irritation. Symptoms may include coughing, shortness of breath, difficult breathing and tightness in the chest.

Skin Absorption

No information was located.

Ingestion

No information was located.

Aspiration Hazard

No information was located. Not known to be an aspiration hazard.

STOT (Specific Target Organ Toxicity) - Repeated Exposure

No information was located.

Respiratory and/or Skin Sensitization

No information was located for respiratory sensitization. Can cause an allergic reaction (skin sensitization) based on animal tests. Human experience shows an allergic skin reaction (skin sensitization) in rare cases following exposure at work. In sensitized people, contact with a very small amount of product can cause an allergic reaction. Symptoms include redness, rash, itching and swelling. This reaction can spread from the hands or arms to the face and body. Repeated exposure will make the reaction worse.

This product contains a blocked polyisocyanate which is considered essentially unreactive at room temperature even though it may contain a small amount of excess blocking agent. Generation of free diisocyanate and blocking agent vapours are expected in the oven during curing or during any accidental heating of this product above its unblocking temperature. As a result of previous repeated overexposures or a single large dose, certain individuals may develop sensitization to isocyanates (asthma or asthma-like symptoms) that may cause them to react to a later exposure of isocyanates at levels well below the exposure limits or guidelines. These symptoms, which can include chest tightness, wheezing, cough, shortness of breath or asthmatic attack, could be immediate or delayed up to several hours after

exposure. Extreme asthmatic reactions can be life threatening. This increased lung sensitivity can persist for weeks and, in severe cases, for several years. Sensitization can be permanent.

Carcinogenicity

Chemical Name	IARC	ACGIH®	NTP	OSHA
Diglycidyl ether of bisphenol A-based epoxy resins, low molecular weight solids	Group 3	Not Listed	Not Listed	

Not known to cause cancer.

Reproductive Toxicity

Development of Offspring

May harm the unborn child.

Sexual Function and Fertility

May cause effects on sexual function and/or fertility. Animal studies show effects on sexual function and/or fertility. (4-Nonylphenol, branched (mixed isomers))

Effects on or via Lactation

No information was located.

Germ Cell Mutagenicity

Not known to be a mutagen.

Interactive Effects

No information was located.

SECTION 12. ECOLOGICAL INFORMATION

This product has not been tested. The toxicity value statements have been derived from the properties of individual components.

Ecotoxicity

May be harmful to aquatic life. Contains a substance which causes risk of hazardous effects to the environment.

Acute Aquatic Toxicity

Chemical Name	LC50 Fish	EC50 Crustacea	ErC50 Aquatic Plants	ErC50 Algae
Diglycidyl ether of bisphenol A-based epoxy resins, low molecular weight solids	2 mg/L (Oncorhynchus mykiss (rainbow trout); 96-hour; semi-static)	1.8 mg/L (Daphnia magna (water flea); 48-hour; static)	11 mg/L (Selenastrum capricornutum (algae); 72-hour; fresh water; static)	
Alkyl Glycidly Ether	> 1800 mg/L (96-hour)	6.07-7.2 mg/L		844 mg/L (72-hour)

Persistence and Degradability

Does not degrade rapidly based on quantitative tests. (Diglycidyl ether of bisphenol A-based epoxy resins, low molecular weight solids)

Bioaccumulative Potential

This product or its degradation products have the potential to bioaccumulate based on the fish bioconcentration factor (BCF). (Diglycidyl ether of bisphenol A-based epoxy resins, low molecular weight solids)

Mobility in Soil

Studies are not available.

Other Adverse Effects

There is no information available.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal Methods

Dispose of contents and container in accordance with local, regional, national and international regulations. Treat waste in an approved waste disposal facility. Empty containers retain product residue. Follow label warnings even if container appears to be empty. Dispose of or recycle empty containers through an approved waste management facility.

SECTION 14. TRANSPORT INFORMATION

Not regulated under Canadian TDG regulations. Not regulated under US DOT Regulations.

Special Precautions Not applicable

Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15. REGULATORY INFORMATION

Safety, Health and Environmental Regulations

Canada

Domestic Substances List (DSL) / Non-Domestic Substances List (NDSL)

All ingredients are listed on the DSL or are not required to be listed.

USA

Toxic Substances Control Act (TSCA) Section 8(b)

All ingredients are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.

SECTION 16. OTHER INFORMATION

SDS Prepared By	Compliance & Documentation Coordinator
Phone No.	905-795-9900
Date of Preparation	June 27, 2017
Date of Last Revision	June 27, 2017
Revision Indicators	Not applicable.
Key to Abbreviations	ACGIH® = American Conference of Governmental Industrial Hygienists NIOSH = National Institute for Occupational Safety and Health
References	CHEMINFO database. Canadian Centre for Occupational Health and Safety (CCOHS). Registry of Toxic Effects of Chemical Substances (RTECS®) database. Accelrys, Inc. Available from Canadian Centre for Occupational Health and Safety (CCOHS).
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