Kelmar® TE Resin (Part A)

SECTION 1. IDENTIFICATION

Product Identifier	Kelmar® TE Resin (Part A)
Other Means of Identification	N/A
Product Family	Epoxy Resins
Recommended Use	Kelmar® T.E. (Totally Engineered) is a multi-layered, protective coating system. The system consists of a prime coat, waterproof membrane and an abrasion-resistant, Coal Tar Epoxy traffic-bearing wear course(s) which is seeded with aggregate for skid resistance.
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/Supplier Identifier	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

Flammable liquid - Category 4; Skin irritation - Category 2; Serious eye damage - Category 1; Skin sensitization - Category 1B; Germ cell mutagenicity - Category 2; Specific target organ toxicity (repeated exposure) - Category 2; Aquatic hazard (Chronic) - Category 2

Label Elements

Signal Word:
Danger
Hazard Statement(s):
H227 Combustible liquid.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H341 Suspected of causing genetic defects.
H373 May cause damage to organs through prolonged or repeated exposure.
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.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P264 Wash hands and skin thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P273 Avoid release to the environment.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or

shower.
P332 + P313 If skin irritation 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.
P315 Get immediate medical advice or attention.
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P310 Immediately call a POISON CENTRE or doctor.
Storage:
P403 + P235 Store in a well-ventilated place. Keep cool.
Disposal:
P501 Dispose of contents and container in accordance with local, regional, national and international regulations.

Other Hazards

Hazardous to the environment. Marine pollutant.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	%	Other Identifiers	Other Names
Propane, 2,2-bis[p-(2, 3-epoxypropoxy)phenyl]-, polymers	25085-99-8	85-90	Diglycidyl ether of bisphenol A-based epoxy resins, low molecular weight liquids	
Phenol	108-95-2	3-5		
Benzyl alcohol	100-51-6	5-8		

SECTION 4. FIRST-AID MEASURES

First-aid Measures

Inhalation

Remove source of exposure or move to fresh air. If experiencing respiratory symptoms (e.g. coughing, shortness of breath, wheezing), call a Poison Centre or doctor. If breathing is difficult, trained personnel should administer emergency oxygen if advised to do so by Poison Centre or doctor. Get medical advice or attention if you feel unwell or are concerned.

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. Immediately rinse skin with lukewarm, gently flowing water for at least 30 minutes. Get medical advice or attention if you feel unwell or are concerned. If skin irritation occurs, get medical advice or attention. Thoroughly clean clothing, shoes and leather goods before reuse or dispose of safely.

Eye Contact

Avoid direct contact. Wear chemical protective gloves if necessary. 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, after the initial 1-2 minutes and continue flushing for several additional minutes.

Ingestion

Rinse mouth with water. Never give anything by mouth if person is rapidly losing consciousness, or is unconscious or convulsing. Do not induce vomiting. If vomiting occurs naturally, lie on your side in the recovery position. Rinse mouth with water again. Immediately call a Poison Centre or doctor.

First-aid Comments

Get medical advice or attention if you feel unwell or are concerned.

Most Important Symptoms and Effects, Acute and Delayed

If on skin: 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. If swallowed: can burn the lips, tongue, throat and stomach. Permanent damage can result. Symptoms may include nausea, vomiting, stomach cramps and diarrhea. If in eyes: may cause moderate to severe irritation.

Immediate Medical Attention and Special Treatment

Special Instructions

Not applicable.

Medical Conditions Aggravated by Exposure

Skin allergies, skin conditions.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Carbon dioxide, dry chemical powder or appropriate foam. Special "alcohol resistant fire-fighting foams". Use water to keep non-leaking, fire-exposed containers cool.

Unsuitable Extinguishing Media

Do not use direct water stream - may cause fire to spread.

Specific Hazards Arising from the Product

Closed containers may rupture violently when heated releasing contents.
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 phenols.

Special Protective Equipment and Precautions for Fire-fighters

Evacuate area. Fight fire from a safe distance or a protected location. Dike and recover contaminated water for appropriate disposal. Review Section 6 (Accidental Release Measures) for important information on responding to leaks/spills.
Fire-fighters may enter the area if positive pressure SCBA and full Bunker Gear is worn. See Skin Protection in Section 8 (Exposure Controls/Personal Protection) for advice on suitable chemical protective materials.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures

Do not touch damaged containers or spilled product unless wearing appropriate protective equipment. Use the personal protective equipment recommended in Section 8 of this safety data sheet. Remove or isolate incompatible materials as well as other hazardous materials.

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. Minimize the use of water to prevent environmental contamination.

Methods and Materials for Containment and Cleaning Up

Review Section 7 (Handling) of this safety data sheet before proceeding with clean-up. Contain and soak up spill with absorbent that does not react with spilled product. Place used absorbent into suitable, covered, labelled containers for disposal. Contaminated absorbent poses the same hazard as the spilled product. Large spills or leaks: dike spilled product to prevent runoff.

Other Information

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

SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling

Avoid repeated or prolonged skin contact. Do not get in eyes, on skin or on clothing. Only use where there is adequate ventilation. Prevent uncontrolled release of product. Avoid release to the environment. Immediately report leaks, spills

or failures of the safety equipment (e.g. ventilation system).

Conditions for Safe Storage

Store in an area that is: well-ventilated, separate from incompatible materials (see Section 10: Stability and Reactivity). Comply with all applicable health and safety regulations, fire and building codes.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

	ACGIH TLV®		OSHA PEL		AIHA WEEL	
Chemical Name	**TWA**	**STEL**	**TWA**	**Ceiling**	**8-hr TWA**	**TWA**
Phenol	5 ppm		19 mg/m3			

Consult local authorities for provincial or state exposure limits. This product has not been tested.

Appropriate Engineering Controls

General ventilation is usually adequate. Use local exhaust ventilation, if general ventilation is not adequate to control amount in the air. 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

Wear chemical protective clothing e.g. gloves, aprons, boots. Chemical-resistant, impervious gloves which comply with an approved standard should be worn at all times when handling. Chemical resistant goggles must be worn. Butyl rubber, Silver Shield®, nitrile rubber, neoprene rubber, polyvinyl chloride.

Respiratory Protection

Not normally required if product is used as directed. For non-routine or emergency situations: wear a NIOSH approved air-purifying respirator with an organic vapour cartridge.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Basic Physical and Chemical Properties

Appearance	Clear liquid. Particle Size: Not available
Odour	Phenolic
Odour Threshold	Not available
pH	Not available
Melting Point/Freezing Point	Not available (melting); Not available (freezing)
Initial Boiling Point/Range	> 182 ºC (360 ºF) (Phenol)
Flash Point	> 75 ºC (167 ºF)
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)	~ 1.14
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 available
Molecular Weight	Not available
Bulk Density	Not available
Surface Tension	Not available
Vapour Pressure at 50 deg C	Not available
Saturated Vapour Concentration	Not available
VOC	~80 g/l - water

SECTION 10. STABILITY AND REACTIVITY

Reactivity

Not reactive under normal conditions of use. Heating may cause an explosion.

Chemical Stability

Normally stable.

Possibility of Hazardous Reactions

None expected under normal conditions of storage and use.

Conditions to Avoid

Open flames, sparks, static discharge, heat and other ignition sources. Sunlight.

Incompatible Materials

Avoid unintended contact with amines. Avoid contact with: oxidizing agents (e.g. peroxides). Acids bases.

Hazardous Decomposition Products

Can include, but not limited to: very toxic carbon monoxide, carbon dioxide; corrosive phenols.

SECTION 11. TOXICOLOGICAL INFORMATION

Information presented below is for the entire product, unless otherwise specified.

Likely Routes of Exposure

Skin contact; eye contact; inhalation; ingestion.

Acute Toxicity

Chemical Name	LC50	LD50 (oral)	LD50 (dermal)
Propane, 2,2-bis[p-(2, 3-epoxypropoxy)phenyl]-, polymers	Not applicable	> 15,000 mg/kg (rat)	23,000 mg/kg (rabbit)
Phenol	316 mg/m3 (rat) (4-hour exposure)	317 mg/kg (rat)	630 mg/kg (rabbit)
Benzyl alcohol	> 4.168 mg/L (rat) (4-hour exposure) (vapour)	1230 mg/kg (rat)	2000 mg/kg (rabbit)

Inhalation ATEmix >/= 6.48 mg/L (4-hour exposure) (dust/mist)

Oral ATEmix = 4022.45 mg/kg

Dermal ATEmix = 7165.11 mg/kg

Skin Corrosion/Irritation

There is limited evidence of mild irritation.
May cause moderate or severe irritation based on information for closely related materials. Repeated or prolonged exposure can irritate or burn the skin. This product contains >1% phenol. Phenol burns may be severe, but painless due to damage to nerve endings; gangrene may occur at site of contact; phenol is readily absorbed through the skin.

Serious Eye Damage/Irritation

May irritate or burn the eyes. Permanent damage including blindness may result.
Product contains >1% Phenol: contact causes severe burns with redness, swelling, pain and blurred vision. Permanent damage including blindness can result.

STOT (Specific Target Organ Toxicity) - Single Exposure

Inhalation

May cause nose and throat irritation.
(Phenol) causes depression of the central nervous system.

Skin Absorption

May cause skin to darken, skin to lose colour or turn white, thermal burns.

Ingestion

This product contains >1% phenol. Phenol may cause severe irritation or burns to the mouth, throat and stomach. Phenol is toxic; in severe cases, symptoms may include paleness, abdominal pain, weakness, fever, shortness of breath, rapid heart rate, dark urine, and yellowish eyes and skin. Phenol ingestion can cause death.

Aspiration Hazard

No information was located.

STOT (Specific Target Organ Toxicity) - Repeated Exposure

Harmful based on information for closely related chemicals. (Phenol) if inhaled, following skin contact and/or if swallowed: in severe cases, symptoms may include paleness, abdominal pain, weakness, fever, shortness of breath, rapid heart rate, dark urine and yellowish eyes and skin. In severe cases death can result.

Respiratory and/or Skin Sensitization

May cause an allergic reaction (skin sensitization) based on limited evidence. In sensitized people, exposure to even small amounts may cause symptoms to be aggravated, becoming more severe. 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.

Carcinogenicity

Chemical Name	IARC	ACGIH®	NTP	OSHA
Propane, 2,2-bis[p-(2, 3-epoxypropoxy)phenyl]-, polymers	Group 3	Not Listed	Not Listed	
Phenol	Group 3	A4		
Benzyl alcohol	Not evaluated	Not Listed	Not Listed	

Not known to cause cancer.

Reproductive Toxicity

Development of Offspring

Conclusions cannot be drawn from the limited studies available.

Sexual Function and Fertility

Not known to cause effects on sexual function or fertility.

Effects on or via Lactation

Not known to cause effects on or via lactation.

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

Toxic, with long lasting effects to aquatic life, based on acute toxicity tests. (Propane, 2,2-bis[p-(2, 3-epoxypropoxy)phenyl]-, polymers)

Acute Aquatic Toxicity

Chemical Name	LC50 Fish	EC50 Crustacea	ErC50 Aquatic Plants	ErC50 Algae
Propane, 2,2-bis[p-(2, 3-epoxypropoxy)phenyl]-, polymers	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)	
Phenol	32 mg/L (Pimephales promelas (fathead minnow); 96-hour)			187-279 mg/L (Desmodesmus subspicatus (algae); 72-hour; static)
Benzyl alcohol	460 mg/L (Pimephales promelas (fathead minnow); 96-hour)	230 mg/L (Daphnia magna (water flea); 48-hour)		700 mg/L (Pseudokirchneriella subcapitata (algae); 72-hour; static)

Chronic Aquatic Toxicity

Chemical Name	NOEC Fish	EC50 Fish	NOEC Crustacea	EC50 Crustacea
Benzyl alcohol	51 mg/L (Daphnia magna (water flea); 21-day)			

Persistence and Degradability

(Propane, 2,2-bis[p-(2,3-epoxypropoxy)phenyl]-, polymers) Not expected to be removed rapidly from aquatic environments by evaporation. Predicted not to degrade rapidly based on quantitative structure-activity relationships.

Bioaccumulative Potential

This product or its degradation products have the potential to bioaccumulate based on quantitative structure-activity relationships. (Propane, 2,2-bis[p-(2,3-epoxypropoxy)phenyl]-, polymers) this product or its degradation products have the potential to bioaccumulate based on the fish bioconcentration factor (BCF).

Mobility in Soil

If released into the environment, this product is not expected to move through the soil, based on physical and chemical properties.

Other Adverse Effects

There is no information available.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal Methods

The required hazard evaluation of the waste and compliance with the applicable hazardous waste laws are the responsibility of the user. Contact local environmental authorities for approved disposal or recycling methods in your jurisdiction. This product and its container must be disposed of as hazardous waste. Do NOT dump into any sewers, on the ground or into any body of water.

SECTION 14. TRANSPORT INFORMATION

Regulation	UN No.	Proper Shipping Name	Transport Hazard Class(es)	Packing Group
IMO (Marine)	UN3082	Environmentally Hazardous Substance, Liquid N.O.S. (Resin Solution)	9	III

Environmental Hazards	Marine Pollutant
Special Precautions	Please note: ROAD/RAIL: Not regulated in packages 450 litres or less.

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 07, 2017
Date of Last Revision	June 07, 2017
Revision Indicators	The following SDS content was changed on June 07, 2017: Section 11 - Toxicological Information; LC50/LD50 values; Germ Cell Mutagenicity. SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS; Ingredient Information. SECTION 2. HAZARD IDENTIFICATION; Classification; Label Elements.
Key to Abbreviations	ACGIH® = American Conference of Governmental Industrial Hygienists NIOSH = National Institute for Occupational Safety and Health NTP = National Toxicology Program OSHA = US Occupational Safety and Health Administration RTECS® = Registry of Toxic Effects of Chemical Substances
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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