1. Product and Company Identification

1.1. Product identifier

Trade name : DEGAROUTE® 467

Solution of an acrylic polymer in methacrylic acid esters / acrylic acid esters

1.2. Recommended use of the chemical and restrictions on use

Recommended use(s): binder for road marking

Non-recommended use(s): Applications where liquid monomer is intended to come into contact with skin or nails.

1.3. Details of the supplier of the safety data sheet

Evonik Corporation USA
299 Jefferson Road
Parsippany, NJ 07054-0677
USA

973-929-8000
973-929-8040 (fax)

product-regulatory-services@evonik.com

973-929-8060 (Product Information Number)
1-800-424-9300 (24 Hour Emergency Number, CHEMTREC)

2. Hazards identification

2.1. Classification of the substance or mixture

This mixture is classified as hazardous according to GHS

Classification according to Regulation 29CFR 1910.1200

Flammable liquids	Hazard category 2	H225
Caustic burning / irritation of skin	Hazard category 2	H315
Skin Sensitisation	Hazard category 1 B	H317
Specific Target Organ Toxicity - Single exposure	Hazard category 3	H335
Carcinogenicity	Hazard category 1 B	H350
Hazardous to the aquatic environment - AcuteHazard	Hazard category 3	H402
Hazardous to the aquatic environment - Chronic Hazard	Hazard category 3	H412

2.2. Label elements

GHS pictogram	
Signal word	**Danger**
Hazard statement	Highly flammable liquid and vapour. (H225) Causes skin irritation. (H315) May cause an allergic skin reaction. (H317) May cause respiratory irritation. (H335) May cause cancer. (H350) Harmful to aquatic life. (H402) Harmful to aquatic life with long lasting effects. (H412)
Safety notice (general)	Wear protective gloves/protective clothing/eye protection. (P280)
Precautionary Statement (Prevention)	Obtain special instructions before use. (P201) Do not handle until all safety precautions have been read and understood. (P202) Keep away from heat/sparks/open flames/hot surfaces. - No smoking. (P210) Keep container tightly closed. (P233) Ground/bond container and receiving equipment. (P240) Use explosion-proof electrical/ ventilating/ lighting/ equipment. (P241) Use only non-sparking tools. (P242) Take precautionary measures against static discharge. (P243) Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. (P261) Wash hands thoroughly after handling. (P264) Use only outdoors or in a well-ventilated area. (P271) Contaminated work clothing should not be allowed out of the workplace. (P272) Avoid release to the environment. (P273)
Precautionary Statement (Response)	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. (P303 + P361 + P353) IF INHALED: Remove person to fresh air and keep comfortable for breathing. (P304 + P340) IF exposed or concerned: Get medical advice/ attention. (P308 + P313) Call a POISON CENTER or doctor/ physician if you feel unwell. (P312) Specific treatment (see supplemental first aid instructions on this label). (P321) If skin irritation or rash occurs: Get medical advice/ attention. (P333 + P313) Take off contaminated clothing and wash before reuse. (P362) In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction. (P370 + P378)
Precautionary Statement (Storage)	Store in a well-ventilated place. Keep container tightly closed. (P403 + P233) Keep cool. (P235) Store locked up. (P405)

Precautionary Statement (Disposal)	Dispose of contents/container according to the local / regional/national/international waste disposal regulations. (P501)	
Hazardous component(s) for labelling	contains	methyl methacrylate 2-ethylhexyl acrylate triethyleneglycol dimethacrylate N,N-dimethyl-p-toluidine

2.3. Other hazards

electrostatic charge
Polymerization with heat evolution may occur in the presence of radical forming substances (e.g. peroxides), reducing substances, and/or heavy metal ions.

3. Composition/information on ingredients

3.1. Substances

3.2. Mixtures

Hazardous Ingredients

Component	CAS-No.	Content	Hazard class / Hazard category / Hazard statement
methyl methacrylate	80-62-6	30.0 - 60.0 %	Flam. Liq. 2 ; H225 Skin Irrit. 2 ; H315 Skin Sens. 1B ; H317 STOT SE 3 (inhalation); H335 Aquatic Acute 3 ; H402
2-ethylhexyl acrylate	103-11-7	15.0 - 40.0 %	Flam. Liq. 4 ; H227 Skin Irrit. 2 ; H315 Skin Sens. 1B ; H317 STOT SE 3 (inhalation); H335 Aquatic Chronic 3 ; H412
triethyleneglycol dimethacrylate	109-16-0	1.0 - 5.0 %	Skin Sens. 1B ; H317 Aquatic Acute 3 ; H402
N,N-dimethyl-p-toluidine	99-97-8	0.1 - < 1.0 %	Flam. Liq. 4 ; H227 Acute Tox. 3 (oral); H301 Acute Tox. 3 (dermal); H311 Acute Tox. 3 (inhalation); H331 Carc. 1B ; H350 STOT RE 2 ; H373 Aquatic Chronic 3 ; H412
N,N-bis-(2-hydroxypropyl)-p-toluidine	38668-48-3	0.1 - < 1.0 %	Acute Tox. 2 (oral); H300 Eye Irrit. 2A ; H319 Aquatic Chronic 3 ; H412

4. First-aid measures

4.1. Description of first aid measures

General advice	Take off all contaminated clothing immediately. Medical treatment is necessary if symptoms occur which are obviously caused by skin or eye contact with the product or by inhalation of its vapours.
Inhalation	Move subject to fresh air and keep him calm. Seek medical advice immediately.
Skin contact	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before re-use. Contact a doctor immediately.
Eye contact	Rinse thoroughly with plenty of water, also under the eyelids. Seek medical advice immediately.
Ingestion	Do not induce vomiting. Call a physician immediately. Never give anything by mouth to an unconscious person.

4.2. Most important symptoms and effects, both acute and delayed

sensitising effects, Excessive or prolonged exposure can cause the following:, headache, Numbness

4.3. Indication of any immediate medical attention and special treatment needed

Symptomatic treatment.

5. Fire-fighting measures

5.1. Extinguishing media

Suitable extinguishing media	foam, dry chemical, carbon dioxide
Unsuitable extinguishing media	High volume water jet

5.2. Specific hazards arising from the chemical

May be released in case of fire: carbon monoxide, carbon dioxide, organic products of decomposition. Closed container may rupture if strongly heated. Vapours may form explosive mixtures with air. Combustible air-vapour mixtures are heavier than the air and spread along the floor. Ignition from a considerable distance is possible.

5.3. Special protective equipment and precautions for fire-fighters

Evacuate enclosed and surrounding areas. As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Keep spills away from sources of ignition.

Vapours are heavier than air and can form an explosive mixture with air. Flammable liquid. Vapors can travel to a source of ignition and flash back. Explosive mixtures may occur at temperatures at or above the flashpoint.
Remove all sources of ignition. Also keep emptied containers away from sources of heat and ignition. Keep out unprotected persons. In case of fire, remove the endangered barrels and bring to a safe place, if this can be done safely. Containers exposed to heat (fire) may build up pressure. Cool by splashing with water. Prevent fire extinguishing water from contaminating surface water or the ground water system. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Assure sufficient ventilation. Use personal protective clothing. Use breathing apparatus if exposed to vapours/dust/mist/aerosol. Keep away from open flames, hot surfaces and sources of ignition. Vapours can form explosive mixtures with air. Keep out unprotected persons. Avoid spark generation.

6.2. Environmental precautions

Prevent product from getting into drains/surface water/groundwater.

6.3. Methods and materials for containment and cleaning up

Remove sources of ignition and ventilate area. All equipment used when handling the product must be grounded. Absorb spill with inert material and place in a chemical waste container. Obey relevant local, state, provincial and federal laws and regulations. Larger quantities: Remove mechanically (by pumping). Use explosion-proof equipment!

6.4. Reference to other sections

For personal protection see section 8.

7. Handling and storage

7.1. Precautions for safe handling

Safe handling advice	Use only trained personnel. Remove contaminated clothing and wash it before reuse. Product is supplied in a stabilized form. Keep locked up. Keep away from heat. Keep away from sparks, flames and other sources of ignition. Use explosion proof equipment. Take precautionary measures against static discharges. Open container carefully as it may be pressurized. Use portable ventilation if necessary at job site. Ground and bond containers when transferring material. The need for grounding and bonding of containers in accordance with OSHA 29 CFR 1910.106 and NFPA 77 should be assessed for all product transfers. Keep container tightly closed. Do not eat, drink, smoke or chew tobacco around material. Use only with adequate ventilation. Avoid breathing vapor or mist. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Container hazardous when empty. Emptied container retains vapor and product residue. Follow all MSDS/label precautions even after the container is emptied. Residual vapors might explode on ignition; do not apply heat, cut, drill, grind or weld on or near this container.
Advice on protection against fire and explosion	Keep away from sources of ignition --- No smoking. Vapors are heavier than air. Flammable liquid. Vapors can travel to a source of ignition and flash back. Explosive mixtures may occur at temperatures at or above the flashpoint. Take precautionary measures against static discharges. Use only explosion-proof equipment. In the event of fire, cool the endangered containers with water. Fire fighting must be carried out from a safe distance.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	Keep container closed when not in use. Ensure there is good room ventilation. Limit storage of flammable liquids to approved areas equipped with overhead sprinklers. Protect material from contamination (refer to Section 10 for incompatibilities). Residual vapors might explode on ignition; do not apply heat, cut, drill, grind or weld on or near this container. Do not heat or cut the empty container with electric or gas torch. Keep in the original container at a temperature not exceeding 30 °C (86 °F). Keep away from heat. Keep away from sparks, flames and other sources of ignition. Keep locked up. Fill the container by approximately 90 % only as oxygen (air) is required for stabilisation. With large storage containers make sure the oxygen (air) supply is sufficient to ensure stability.
Further information	Improper disposal or re-use of this container may be dangerous and illegal.

8. Exposure controls/personal protection

8.1. Control parameters

Exposure Limit Information

METHYL METHACRYLATE

(CAS Number 80-62-6)

Carcinogen designation(s) USA: EPA-NL; IARC-3; TLV-A4

Occupational Exposure Values			Remark(s):
ACGIH TLV-TWA	50 ppm	205 mg/m3	Sensitiser
ACGIH TLV-STEL	100 ppm	410 mg/m3	Sensitiser
OSHA PEL-TWA	100 ppm	410 mg/m3	
OSHA PEL-STEL			not established
OEL-TWA (Alberta)	50 ppm	205 mg/m3	
OEL-STEL (Alberta)	100 ppm	410 mg/m3	
OEL-TWA (British Columbia)	50 ppm		Capable of causing respiratory, dermal or conjunctival sensitization.
OEL-STEL (British Columbia)	100 ppm		Capable of causing respiratory, dermal or conjunctival sensitization.
OEL-TWA (Ontario)	50 ppm		
OEL-STEL (Ontario)	100 ppm		
OEL-TWA (Quebec)	50 ppm	205 mg/m3	Sensitiser
OEL-STEL (Quebec)			not established
OEL-TWA (Mexico)	100 ppm	410 mg/m3	Carcinogen Category 4 - not classifiable as a human carcinogen
OEL-STEL (Mexico)	125 ppm	510 mg/m3	Carcinogen Category 4 - not classifiable as a human carcinogen
OEL-STEL (Saskatchewan)	100 ppm		The product may cause sensitization.
OEL-TWA (Saskatchewan)	50 ppm		The product may cause sensitization.
OEL-STEL (Manitoba)	100 ppm		Sensitiser
OEL-TWA (Manitoba)	50 ppm		Sensitiser

2-ETHYLHEXYL ACRYLATE
(CAS Number 103-11-7)

Occupational Exposure Values			Remark(s):
ACGIH TLV-TWA			not established
ACGIH TLV-STEL			not established
OSHA PEL-TWA			not established
OSHA PEL-STEL			not established
NIOSH REL-TWA			not established
NIOSH REL-STEL			not established
OEL-TWA (North Carolina)			not established
OEL-STEL (North Carolina)			not established
OEL-TWA (Alberta)			not established
OEL-STEL (Alberta)			not established
OEL-TWA (British Columbia)			not established
OEL-STEL (British Columbia)			not established
OEL-TWA (Ontario)			not established
OEL-STEL (Ontario)			not established
OEL-TWA (Quebec)			not established
OEL-STEL (Quebec)			not established
Short-Term ESL:		0.35 mg/m3	
Annual ESL:		0.035 mg/m3	

TRIETHYLENE GLYCOL DIMETHACRYLATE
(CAS Number 109-16-0)

Occupational Exposure Values			Remark(s):
ACGIH TLV-TWA			not established
ACGIH TLV-STEL			not established
OSHA PEL-TWA			not established
OSHA PEL-STEL			not established
NIOSH REL-TWA			not established
NIOSH REL-STEL			not established
OEL-TWA (North Carolina)			not established
OEL-STEL (North Carolina)			not established
OEL-TWA (Alberta)			not established
OEL-STEL (Alberta)			not established
OEL-TWA (British Columbia)			not established
OEL-STEL (British Columbia)			not established
OEL-TWA (Ontario)			not established
OEL-STEL (Ontario)			not established
OEL-TWA (Quebec)			not established
OEL-STEL (Quebec)			not established
OEL-TWA (Mexico)			not established
OEL-STEL (Mexico)			not established

PARAFFIN FUME)

Occupational Exposure Values			Remark(s):
OEL-TWA (Ontario)		2 mg/m3	
OEL-STEL (Ontario)			not established
OEL-TWA (Quebec)		2 mg/m3	
OEL-STEL (Quebec)			not established
OEL-TWA (Mexico)		2 mg/m3	
OEL-STEL (Mexico)		6 mg/m3	
ACGIH TLV-TWA		2 mg/m3	
ACGIH TLV-STEL			not established
OSHA PEL-TWA			not established
OSHA PEL-STEL			not established
OEL-TWA (Alberta)		2 mg/m3	
OEL-STEL (Alberta)			not established
OEL-TWA (British Columbia)		2 mg/m3	
OEL-STEL (British Columbia)			not established
OEL-TWA (Tennessee)		2 mg/m3	
OEL-TWA (Oregon)		1 mg/m3	

N,N-BIS-(2-HYDROXYPROPYL)-P-TOLUIDINE
(CAS Number 38668-48-3)

Occupational Exposure Values			Remark(s):
ACGIH TLV-TWA			not established
ACGIH TLV-STEL			not established
OSHA PEL-TWA			not established
OSHA PEL-STEL			not established
NIOSH REL-TWA			not established
NIOSH REL-STEL			not established
OEL-TWA (North Carolina)			not established
OEL-STEL (North Carolina)			not established
OEL-TWA (Alberta)			not established
OEL-STEL (Alberta)			not established
OEL-TWA (British Columbia)			not established
OEL-STEL (British Columbia)			not established
OEL-TWA (Ontario)			not established
OEL-STEL (Ontario)			not established
OEL-TWA (Quebec)			not established
OEL-STEL (Quebec)			not established
OEL-TWA (Mexico)			not established
OEL-STEL (Mexico)			not established

N,N-DIMETHYL-P-TOLUIDINE
(CAS Number 99-97-8)

Occupational Exposure Values			Remark(s):
ACGIH TLV-TWA			not established
ACGIH TLV-STEL			not established
OSHA PEL-TWA			not established
OSHA PEL-STEL			not established
NIOSH REL-TWA			not established
NIOSH REL-STEL			not established
OEL-TWA (North Carolina)			not established
OEL-STEL (North Carolina)			not established
OEL-TWA (Alberta)			not established
OEL-STEL (Alberta)			not established
OEL-TWA (British Columbia)			not established
OEL-STEL (British Columbia)			not established
OEL-TWA (Ontario)			not established
OEL-STEL (Ontario)			not established
OEL-TWA (Quebec)			not established
OEL-STEL (Quebec)			not established
OEL-TWA (Mexico)			not established
OEL-STEL (Mexico)			not established

8.2. Exposure controls

Engineering controls

Provide general and/or local exhaust ventilation to maintain airborne levels below the exposure limits in Section 8. Refer to the current edition of 'Industrial Ventilation: A Manual of Recommended Practice' published by the American Conference of Government Industrial Hygienists for information on the design, installation, use, and maintenance of exhaust systems.

8.3. Personal protective equipment

Protective measures	Avoid breathing vapor or mist. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. A safety shower and eye wash fountain should be readily available. To identify additional Personal Protective Equipment (PPE) requirements, it is recommended that a hazard assessment in accordance with the OSHA PPE Standard (29CFR1910.132) be conducted before using this product.
Hygiene measures	Take off all contaminated clothing immediately. Store work clothing separately. Follow the usual good standards of occupational hygiene. Clean skin thoroughly after work; apply skin cream.
Respiratory protection	Breathing apparatus in case of high concentrations, A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 or applicable federal/provincial requirements must be followed whenever workplace conditions warrant respirator use. NIOSH's "Respirator Decision Logic" may be useful in determining the suitability of various types of respirators.

Hand protection	butyl rubber gloves (0.33 mm), Break through time ca. 66 min (EN 374) In practice, due to variable exposure conditions, this information can only be an aid to orientation for the selection of a suitable chemical protection glove. In particular, this information does not substitute suitability tests by the end user.
Splash protection	nitrile rubber gloves (minimal thickness 0.11 mm)
General information	Gloves should be replaced regularly, especially after extended contact with the product. For each work-place a suitable glove type has to be selected.
Eye protection	Use safety glasses (ANSI Z87.1 or approved equivalent).
Skin and body protection	Use chemically resistant apron or other impervious clothing to avoid prolonged or repeated skin contact.

9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Colour	colourless
Form	liquid
Odor	ester-like
Odour Threshold	<1 ppm
physical state	liquid
Melting point/freezing point	no data available
Boiling point/range	ca. 100 °C (1,013 hPa) ca. 212 °F
Flash point	10 °C (DIN 51755) (methyl methacrylate) 50 °F (DIN 51755) (methyl methacrylate)
Evaporation rate	> 1 (butyl acetate = 1)
Ignition temperature	430 °C (DIN 51794) (methyl methacrylate) 806 °F (DIN 51794) (methyl methacrylate)
Autoignition temperature	no data available
Decomposition temperature	No decomposition if used as directed. The substance is stable under the specified conditions.
Impact sensitivity	Not impact sensitive.

Lower explosion limit	2.1 %(V) at 10,5°C / 33,8°F(methyl methacrylate)
Upper explosion limit	12.5 %(V) (methyl methacrylate)
Flammability (solid, gas)	no data available
Vapour pressure	ca. 40 hPa (= mbar) at 20 °C / 68 °F
Density	ca. 1.00 g/cm3 at 20 °C / 68 °F
Relative density	no data available
Relative vapour density (related to air)	> 1 (20 °C) (68 °F)
Solubility in water	ca. 20 g/l at 20 °C / 68 °F
Fat solubility	no data available
Solubility (quantitative)	miscible with: solvent
Solubility (qualitative)	miscible
pH	no data available
n-Octanol/water partition coefficient	no data available
Viscosity (dynamic)	ca. 355 mPa·s at 23 °C / 73.4 °F
Viscosity (kinematic)	ca. 335 mm2/s (23 °C) (73.4 °F)

9.2. Other information

none

10. Stability and reactivity

10.1. Reactivity

see section 10.2.

10.2. Chemical stability

No decomposition if used as directed. The substance is stable under the specified conditions.

10.3. Possibility of hazardous reactions

Polymerization with heat evolution may occur in the presence of radical forming substances (e.g. peroxides), reducing substances, and/or heavy metal ions.
Vigorous polymerization is possible when heated /exposed to heat.

10.4. Conditions to avoid

Avoid high temperatures and sources of ignition. Ultraviolet light.
The product is normally supplied in a stabilized form. If the permissible storage period and/or storage temperature is exceeded, the product may polymerize with heat evolution.

10.5. Incompatible materials

Peroxides, amines, sulfur compounds, heavy metal ions, alkalis, reducing agents and oxidizing agents.

10.6. Hazardous decomposition products

None when used as directed.

11. Toxicological information

11.1. Information on toxicological effects

toxicokinetics, metabolism and distribution	no specific test data available	
Acute Oral Toxicity	LD50 rat, OECD 401	> 5,000 mg/kg
	Related to substance: methyl methacrylate	
	LD50 rat	> 2,000 mg/kg
	Related to substance: 2-ethylhexyl acrylate	
	LD50 rat	25 - 200 mg/kg
	Related to substance: N,N-bis-(2-hydroxypropyl)-p-toluidine	
	LD50 rat, FDA-Guideline (own study)	996 mg/kg
	Related to substance: N,N-dimethyl-p-toluidine	
Acute Inhalational Toxicity	LC50 rat, 4 h	29.8 mg/l
	Related to substance: methyl methacrylate	
	LCLo Mouse	0.6 mg/l
	Related to substance: 2-ethylhexyl acrylate	

Acute Dermal Toxicity	LD50 rabbit	> 5,000 mg/kg
	Related to substance: methyl methacrylate	
	LD50 rabbit	> 5,000 mg/kg
	Related to substance: 2-ethylhexyl acrylate	
Caustic burning / irritation of skin		irritating
	Properties of components in summary. Related to substance: product	
Serious eye damage/eye irritation		
	Contact with the eyes may cause irritation. Related to substance: product	
Respiratory/skin sensitization		
	In sensitization tests on guinea pigs with and without adjuvant, both positive and negative results were found. In humans various types of allergic reactions have been observed (symptoms: headache, eye irritations, skin affections). Related to substance: methyl methacrylate	
	May cause sensitisation by skin contact. Related to substance: 2-ethylhexyl acrylate	
Aspiration hazard	not applicable	
Mutagenicity assessment	Positive as well as negative results in *in vitro* mutagenicity/ genotoxicity tests. No experimental indication of genotoxicity *in vivo* available. In summary not mutagenic according to internationally accepted criteria. Related to substance: methyl methacrylate	
Carcinogenicity	There is evidence of carcinogenic effects. Carcinogen Category 1B (UN-GHS) Related to substance: N,N-dimethyl-p-toluidine Several long-term skin painting studies for carcinogenicity in mice were conducted and gave contradictory results. On the basis of all existing information no definite conclusion on a cancerogenic activity can be drawn. Related to substance: 2-ethylhexyl acrylate	
Reprotoxicity / teratogenicity	No indications of toxic effects were observed in reproduction studies in animals. Related to substance: methyl methacrylate	
CMR assessment	CMR: no	
Toxicity on Repeated Administration	rat, inhalation, 2 Years Findings: Damage to mucous membranes in the nose at 400 ppm Related to substance: methyl methacrylate	**NOAEL** 25 ppm
	rat, in drinking water, 2 Years Findings: no toxic effects Related to substance: methyl methacrylate	**NOAEL** 2000 ppm

General information	There are no toxicological data available for the product as such. Avoid contact with the skin and eyes and inhalation of the product vapours.

12. Ecological information

12.1. Toxicity

Aquatoxicity, fish	LC50 Oncorhynchus mykiss, rainbow trout, OECD 203, flow through, GLP, 96 h Related to substance: methyl methacrylate	> 79 mg/l
	LC50 Leuciscus idus melanotus, fish test according to Mann, DEV L15, 48 h Related to substance: 2-ethylhexyl acrylate	23 mg/l
Aquatoxicity, invertebrates	EC50 Daphnia magna, OECD 202, flow through, 48 h Related to substance: methyl methacrylate	69 mg/l
	NOEC Daphnia magna, OECD 202 part 2, flow through, 21 d Related to substance: methyl methacrylate	37 mg/l
	EC50 Daphnia magna, OECD 202 / ISO 6341 / 84/449/EEC V, C2, 48 h Related to substance: 2-ethylhexyl acrylate	17.45 mg/l
Aquatoxicity, algae / aquatic plants	EC3 Scenedesmus quadricauda, cell proliferation inhibition test, 8 d Related to substance: methyl methacrylate	37 mg/l
Toxicity in microorganisms	EC0 Pseudomonas putida Related to substance: methyl methacrylate	100 mg/l

12.2. Persistence and degradability

Persistence and degradability	no evidence for hazardous properties
Biodegradability	biodegradable (monomer constituent)

12.3. Bioaccumulative potential

Bioaccumulation	no evidence for hazardous properties

12.4. Mobility in soil

Mobility	no evidence for hazardous properties

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment	PBT: no vPvB: no

12.6. Other adverse effects

General Information	Prevent substance from entering soil, natural bodies of water and sewer systems.Harmful to aquatic life with long lasting effects.

13. Disposal considerations

13.1. Waste treatment methods

Product	Waste must be disposed of in accordance with federal, state and local regulations. Incineration is the preferred method. Empty containers must be handled with care due to product residue. DO NOT HEAT OR CUT THE EMPTY CONTAINER WITH ELECTRIC OR GAS TORCH.
Uncleaned packaging	Contaminated packaging should ideally be emptied; it can then be recycled after having been decontaminated. Packaging that cannot be cleaned should be disposed of professionally. Uncontaminated packaging may be taken for recycling.

14. Transport information

US DOT Hazard Classification

ID/UN Number	1866
Proper Shipping Name	RESIN SOLUTION
Hazard Class	3
Packing Group	II
ERG:	127

Canadian TDG Classification

Refer to the classification US DOT

Shipment by sea IMDG/GGVSee

UN number	1866
Proper Shipping Name	RESIN SOLUTION
Class	3
Packaging group	II
EmS	F-E, S-E
Marine pollutant	No

Air transport ICAO/IATA

UN number	1866
Proper Shipping Name	RESIN SOLUTION
Class	3
Packing Group	II

15. Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

INVENTORY INFORMATION

REACH (EU)	preregistered, registered or exempted
TSCA (USA)	listed or exempted
DSL (CDN)	listed or exempted
AICS (AUS)	listed or exempted
METI (J)	listed or exempted
ECL (KOR)	listed or exempted
PICCS (RP)	listed or exempted
IECSC (CN)	listed or exempted
ECS (Taiwan)	listed or exempted

US FEDERAL REGULATORY INFORMATION

Component / CASRN	TPQ [lbs]	CERCLA RQ [lbs] (40CFR302.4)	SARA 302 List of EHS	SARA 313 (40CFR372)	TSCA 12b
methyl methacrylate / 80-62-6	NONE	1000	NO	YES	NO

COMPONENT CLASSIFICATION UNDER CLEAN AIR ACT SECTION 112

Component / CASRN	Weight %	HAP	EHAP
methyl methacrylate / 80-62-6	30 - 60	YES	NO

PRODUCT CLASSIFICATION UNDER SECTION 311/312 OF SARA (40CFR370)

ACUTE, CHRONIC, FIRE,

US STATE REGULATORY INFORMATION

Component / CASRN	New Jersey RTK	Pennsylvania RTK	Massachusetts RTK	California Proposition 65 Cancer	California Proposition 65 Reproductive
methyl methacrylate / 80-62-6	YES	YES	YES	NO	NO
2-ethylhexyl acrylate / 103-11-7	YES	YES	YES	NO	NO
acrylic polymer	NO	NO	NO	NO	NO
paraffin / trade secret	YES	YES	YES	NO	NO
N,N-dimethyl-p-toluidine / 99-97-8	NO	NO	NO	NO	NO
triethyleneglycol dimethacrylate / 109-16-0	NO	NO	NO	NO	NO

This product contains (a) chemical(s) known to the State of California to cause cancer.

CANADIAN REGULATION

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulation and the MSDS contains all information required by the Controlled Products Regulations.

This is a controlled product.
WHMIS:B2, D2A, D2B

Component / CASRN	NPRI
methyl methacrylate /	YES

80-62-6 triethyleneglycol dimethacrylate / 109-16-0	NO

16. Other information

	Health	Flammability	Physical Hazard
HMIS-Ratings	2*	3	2
NFPA-Ratings	2	3	2

HMIS Hazard Ratings	NFPA Hazard Ratings
4 = severe	4 = extreme
3 = serious	3 = high
2 = moderate	2 = moderate
1 = slight	1 = slight
0 = minimal	0 = insignificant
N = no rating for powders	N = no rating for powders
* = chronic health hazard	

Other information

The product is normally supplied in a stabilized form. If the permissible storage period and/or storage temperature is exceeded, the product may polymerize with heat evolution.

Relevant H phrases from chapter 3

methyl methacrylate
H225 Highly flammable liquid and vapour.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H335 May cause respiratory irritation.
H402 Harmful to aquatic life.

2-ethylhexyl acrylate
H227 Combustible liquid.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H335 May cause respiratory irritation.
H412 Harmful to aquatic life with long lasting effects.

triethyleneglycol dimethacrylate
H317 May cause an allergic skin reaction.

triethyleneglycol dimethacrylate
H402 Harmful to aquatic life.

N,N-dimethyl-p-toluidine
H301 Toxic if swallowed.
H311 Toxic in contact with skin.
H331 Toxic if inhaled.
H350 May cause cancer.
H373 May cause damage to organs through prolonged or repeated exposure.
H412 Harmful to aquatic life with long lasting effects.

N,N-bis-(2-hydroxypropyl)-p-toluidine
H300 Fatal if swallowed.
H319 Causes serious eye irritation.
H412 Harmful to aquatic life with long lasting effects.

References	relevant manuals and publications own examinations own toxicological and ecotoxicological studies toxicological and ecotoxicological studies of other manufacturers SIAR OECD-SIDS RTK public files
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Places marked by || have been amended from the last version.

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Legend

ACC	American Chemistry Council
ACGIH	American Conference of Governmental Industrial Hygenists
ACS	Advisory Committee on Sustainability
ADI	Acceptable Daily Intake
ASTM	American Society for Testing and Materials
ATP	Adaptation to Technical Progress
BCF	Bioconcentration factor
BOD	Biochemical oxygen demand
c.c.	closed cup
CAO	Cargo Aircraft Only
Carc	Carcinogen
CAS	Chemical Abstract Services
CDN	Canada
CEPA	Canadian Environmental Protection Act
CERCLA	Comprehensive Environmental Response – Compensation and Liability Act
CFR	Code of Federal Regulations
CMR	carcinogenic-mutagenic-toxic for reproduction
COD	Chemical oxygen demand
DIN	German Institute for Standardization
DMEL	Derived minimum effect level
DNEL	Derived no effect level
DOT	Department of Transportation
EC50	half maximal effective concentration
EPA	Environmental Protection Agency
ErC50	Reduction of Growth Rate
ERG	Emergency Response Guide Book
FDA	Food and Drug Administration
GHS	Globally Harmonized System of Classification and Labelling of Chemicals (GHS)
GLP	Good Laboratory Practice
GMO	Genetic Modified Organism
HCS	Hazard Communication Standard
HMIS	Hazardous Materials Identification System
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IBC	Intermediate Bulk Container
ICAO-TI	International Civil Aviation Organization- Technical Instructions
ICCA	International Council of Chemical Association
ID	Identification number
IMDG	International Maritime Dangerous Goods
IUPAC	International Union of Pure and Applied Chemistry
ISO	International Organization For Standardization

LC50	50 % Lethal Concentration
LD50	50 % Lethal Dose
L(E)C50	LC50 or EC50
LOAEL	Lowest observed adverse effect level
LOEL	Lowest observed effect level
MARPOL	International Convention for the Prevention of Pollution from Ships
NFPA	National Fire Protection Association
NOAEL	No observed adverse effect level
NOEC	no observed effect concentration
NOEL	no observed effect level
o. c.	open cup
OECD	Organisation for Economic Cooperation and Development
OEL	Occupational Exposure Limit
OSHA	Occupational Safety and Health Administration
PBT	Persistent, bioaccumulative, toxic
PEC	Predicted effect concentration
PNEC	Predicted no effect concentration
RQ	Reportable Quantity
SDS	Safety Data Sheet
STOT	Specific Target Organ Toxicity
UN	United Nations
vPvB	very persistent, very bioaccumulative
voc	volatile organic compounds
WHMIS	Workplace Hazardous Materials Information System
WHO	World Health Organization