

# Safety Data Sheet

OSHA 1910.1200  
Revision Date: 05/22/2017  
Print Date: 08/29/2017  
Version: 6.0



DEGAROUTE® 485 Binder Resin

Page 1 of 20

## 1. Product and Company Identification

### 1.1. Product identifier

Trade name : **DEGAROUTE® 485 Binder Resin**

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

#### Classification according to Regulation 29CFR 1910.1200

Flammable liquids	Hazard category Category 2	H225
Skin irritation	Hazard category Category 2	H315
Eye irritation	Hazard category Category 2A	H319
Skin Sensitisation	Hazard category Category 1	H317
Specific target organ toxicity - single exposure	Hazard category Category 3	H335
Acute aquatic toxicity	Hazard category Category 2	H401
Chronic aquatic toxicity	Hazard category Category 3	H412

### 2.2. Label elements

GHS pictogram



# Safety Data Sheet

OSHA 1910.1200

Revision Date: 05/22/2017

Print Date: 08/29/2017

Version: 6.0



DEGAROUTE® 485 Binder Resin

Page 2 of 20

Signal word	<b>Danger</b>
Hazard statement	Highly flammable liquid and vapour. (H225) Causes skin irritation. (H315) May cause an allergic skin reaction. (H317) Causes serious eye irritation. (H319) May cause respiratory irritation. (H335) Toxic to aquatic life. (H401) Harmful to aquatic life with long lasting effects. (H412)
Precautionary Statement (Prevention)	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 skin 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) Wear protective gloves/ eye protection/ face protection. (P280)
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 IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. (P305 + P351 + P338) Call a POISON CENTER/doctor if you feel unwell. (P312) If skin irritation or rash occurs: Get medical advice/ attention. (P333 + P313) If eye irritation persists: Get medical advice/ attention. (P337 + P313) Take off contaminated clothing and wash it before reuse. (P362 + P364) In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide to extinguish. (P370 + P378)
Precautionary Statement (Storage)	Store in a well-ventilated place. Keep container tightly closed. (P403 + P233) Store locked up. (P405)
Precautionary Statement (Disposal)	Dispose of contents/ container to an approved waste disposal plant. (P501)
Hazardous component(s) for labelling	contains methyl methacrylate n-butyl acrylate 2-ethylhexyl acrylate

## 2.3. Other hazards

# Safety Data Sheet

OSHA 1910.1200

Revision Date: 05/22/2017

Print Date: 08/29/2017

Version: 6.0



DEGAROUTE® 485 Binder Resin

Page 3 of 20

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.  
Take precautionary measures against static discharges.

## 3. Composition/information on ingredients

### 3.1. Substances

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### 3.2. Mixtures

#### Hazardous Ingredients

Component	CAS-No.	Content	Hazard class / Hazard category / Hazard statement
methyl methacrylate	80-62-6	$\geq 20.0$ - $< 30.0$ %	Flammable liquids / Category 2; H225 Skin irritation / Category 2; H315 Skin Sensitisation / Sub-category 1B; H317 Specific target organ toxicity - single exposure / Category 3; H335 Acute aquatic toxicity / Category 3; H402
n-butyl acrylate	141-32-2	$\geq 20.0$ - $< 30.0$ %	Flammable liquids / Category 3; H226 Acute toxicity / Category 4 (Inhalation); H332 Skin irritation / Category 2; H315 Eye irritation / Category 2A; H319 Skin Sensitisation / Sub-category 1B; H317 Specific target organ toxicity - single exposure / Category 3; H335 Acute aquatic toxicity / Category 2; H401 Chronic aquatic toxicity / Category 3; H412
2-ethylhexyl acrylate	103-11-7	$\geq 5.0$ - $< 10.0$ %	Flammable liquids / Category 4; H227 Skin irritation / Category 2; H315 Skin Sensitisation / Sub-category 1B; H317 Specific target organ toxicity - single exposure / Category 3; H335 Acute aquatic toxicity / Category 2; H401 Chronic aquatic toxicity / Category 3; H412
Tributyl-O-acetyl citrate	77-90-7 trade secret	$\geq 5.0$ - $< 10.0$ %	Acute aquatic toxicity / Category 3; H402
N,N-bis-(2-hydroxypropyl)-p-toluidine	38668-48-3	$\geq 0.1$ - $< 1.0$ %	Acute toxicity / Category 2 (Oral); H300 Eye irritation / Category 2A; H319 Acute aquatic toxicity / Category 3; H402 Chronic aquatic toxicity / Category 3; H412

# Safety Data Sheet

OSHA 1910.1200  
Revision Date: 05/22/2017  
Print Date: 08/29/2017  
Version: 6.0



DEGAROUTE® 485 Binder Resin

Page 4 of 20

## 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. If feeling unwell seek medical advice.
Skin contact	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before re-use. Consult a doctor in the event of permanent skin irritation.
Eye contact	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Consult a physician.
Ingestion	Do not induce vomiting. Never give anything by mouth to an unconscious person. Seek medical advice.

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

Excessive or prolonged exposure can cause the following: , Headache, confusion, irritation, Product has dermal defatting effect

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

No specific antidote known. 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.

# Safety Data Sheet

OSHA 1910.1200  
Revision Date: 05/22/2017  
Print Date: 08/29/2017  
Version: 6.0



**DEGAROUTE® 485 Binder Resin**

Page 5 of 20

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.

# Safety Data Sheet

OSHA 1910.1200  
Revision Date: 05/22/2017  
Print Date: 08/29/2017  
Version: 6.0



DEGAROUTE® 485 Binder Resin

Page 6 of 20

## 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. Protect from the action of light. Protect from direct sunlight. 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

# Safety Data Sheet

OSHA 1910.1200  
Revision Date: 05/22/2017  
Print Date: 08/29/2017  
Version: 6.0



DEGAROUTE® 485 Binder Resin

Page 7 of 20

## Exposure Limit Information 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/m <sup>3</sup>	Sensitiser
ACGIH TLV-STEL	100 ppm	410 mg/m <sup>3</sup>	Sensitiser
OSHA PEL-TWA	100 ppm	410 mg/m <sup>3</sup>	
OSHA PEL-STEL			not established
OEL-TWA (Alberta)	50 ppm	205 mg/m <sup>3</sup>	
OEL-STEL (Alberta)	100 ppm	410 mg/m <sup>3</sup>	
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/m <sup>3</sup>	Sensitiser
OEL-STEL (Quebec)			not established
OEL-TWA (Mexico)	100 ppm	410 mg/m <sup>3</sup>	Carcinogen Category 4 - not classifiable as a human carcinogen
OEL-STEL (Mexico)	125 ppm	510 mg/m <sup>3</sup>	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
OEL-STEL (California)	100 ppm	410 mg/m <sup>3</sup>	
OEL-TWA (California)	50 ppm	205 mg/m <sup>3</sup>	
OEL-TWA (Oregon)	100 ppm	410 mg/m <sup>3</sup>	
OEL-TWA (Tennessee)	100 ppm	410 mg/m <sup>3</sup>	

# Safety Data Sheet

OSHA 1910.1200

Revision Date: 05/22/2017

Print Date: 08/29/2017

Version: 6.0



DEGAROUTE® 485 Binder Resin

Page 8 of 20

## N-BUTYL ACRYLATE

(CAS Number 141-32-2)

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

Occupational Exposure Values

			Remark(s):
ACGIH TLV-TWA	2 ppm	11 mg/m3	Sensitiser A4 (Not Classifiable as a Human Carcinogen)
ACGIH TLV-STEL			not established
OSHA PEL-TWA	10 ppm	55 mg/m3	
OSHA PEL-STEL			not established
OEL-TWA (Alberta)	2 ppm	10 mg/m3	
OEL-STEL (Alberta)			not established
OEL-TWA (British Columbia)	2 ppm		Capable of causing respiratory, dermal or conjunctival sensitization.
OEL-STEL (British Columbia)			not established
OEL-TWA (Ontario)	2 ppm		
OEL-STEL (Ontario)			not established
OEL-TWA (Quebec)	2 ppm	10 mg/m3	
OEL-STEL (Quebec)			not established
OEL-TWA (Mexico)	10 ppm	55 mg/m3	Carcinogen Category 4 - not classifiable as a human carcinogen
OEL-TWA (Mexico)			not established
OEL-TWA (California)	2 ppm	11 mg/m3	
OEL-TWA (Tennessee)	10 ppm	55 mg/m3	
OEL-TWA (Ontario)	2 ppm		
OEL-TWA (Saskatchewan)	2 ppm		
OEL-STEL (Saskatchewan)	4 ppm		
OEL-TWA (Manitoba)	2 ppm		Sensitiser



# Safety Data Sheet

OSHA 1910.1200

Revision Date: 05/22/2017

Print Date: 08/29/2017

Version: 6.0



DEGAROUTE® 485 Binder Resin

Page 9 of 20

## 2-ETHYLHEXYL ACRYLATE

(CAS Number 103-11-7)

### Occupational Exposure Values

ACGIH TLV-TWA

ACGIH TLV-STEL

OSHA PEL-TWA

OSHA PEL-STEL

NIOSH REL-TWA

NIOSH REL-STEL

OEL-TWA (North Carolina)

OEL-STEL (North Carolina)

OEL-TWA (Alberta)

OEL-STEL (Alberta)

OEL-TWA (British Columbia)

OEL-STEL (British Columbia)

OEL-TWA (Ontario)

OEL-STEL (Ontario)

OEL-TWA (Quebec)

OEL-STEL (Quebec)

Short-Term ESL:

Annual ESL:

0.35 mg/m3

0.035

mg/m3

### Remark(s):

not established

not established

not established

not established

not established

not established

not established

not established

not established

not established

not established

not established

not established

not established

not established

not established

## PLASTICIZER

(CAS Number trade secret)

### Occupational Exposure Values

ACGIH TLV-TWA

ACGIH TLV-STEL

OSHA PEL-TWA

OSHA PEL-STEL

OEL-TWA (Alberta)

OEL-STEL (Alberta)

OEL-TWA (British Columbia)

OEL-STEL (British Columbia)

OEL-TWA (Ontario)

OEL-STEL (Ontario)

OEL-TWA (Quebec)

OEL-STEL (Quebec)

OEL-TWA (Mexico)

OEL-STEL (Mexico)

### Remark(s):

not established

not established

not established

not established

not established

not established

not established

not established

not established

not established

not established

not established

not established

not established

# Safety Data Sheet

OSHA 1910.1200  
Revision Date: 05/22/2017  
Print Date: 08/29/2017  
Version: 6.0



DEGAROUTE® 485 Binder Resin

Page 10 of 20

## N,N-BIS-(2-HYDROXYPROPYL)-P-TOLUIDINE

(CAS Number 38668-48-3)

### Occupational Exposure Values

ACGIH TLV-TWA

ACGIH TLV-STEL

OSHA PEL-TWA

OSHA PEL-STEL

NIOSH REL-TWA

NIOSH REL-STEL

OEL-TWA (North Carolina)

OEL-STEL (North Carolina)

OEL-TWA (Alberta)

OEL-STEL (Alberta)

OEL-TWA (British Columbia)

OEL-STEL (British Columbia)

OEL-TWA (Ontario)

OEL-STEL (Ontario)

OEL-TWA (Quebec)

OEL-STEL (Quebec)

OEL-TWA (Mexico)

OEL-STEL (Mexico)

### Remark(s):

not established

not established

not established

not established

not established

not established

not established

not established

not established

not established

not established

not established

not established

not established

not established

not established

not established

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

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.

# Safety Data Sheet

OSHA 1910.1200  
Revision Date: 05/22/2017  
Print Date: 08/29/2017  
Version: 6.0



DEGAROUTE® 485 Binder Resin

Page 11 of 20

Hand protection	butyl rubber gloves (0.3 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	neoprene gloves
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	On handling of larger quantities: face mask, chemical-resistant boots and apron

## 9. Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Colour	colourless, turbid
Form	liquid
Odor	ester-like
Odour Threshold	<1 ppm
physical state	liquid
Melting point/freezing point	No data available
Boiling point/range	Boiling point/range ca. 100 °C (1,013 hPa)
Flash point	10 °C (DIN 51 755) (methyl methacrylate) 50 °F (DIN 51 755) (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. Stable under normal conditions.
Impact Sensitivity	Not impact sensitive.

# Safety Data Sheet

OSHA 1910.1200  
Revision Date: 05/22/2017  
Print Date: 08/29/2017  
Version: 6.0



**DEGAROUTE® 485 Binder Resin**

Page 12 of 20

Lower explosion limit	2.1 %(V) (methyl methacrylate) 1.3 %(V) (n-butyl acrylate)
Upper explosion limit	12.5 %(V) (methyl methacrylate) 9.9 %(V) (n-butyl acrylate)
Flammability (solid, gas)	no data available
Vapour pressure	ca. 40 hPa (= mbar) at 20 °C / 68 °F
Density	0.98 g/cm <sup>3</sup> 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)	no data available
Solubility (qualitative)	soluble in ethyl acetate
pH	no data available
n-Octanol/water partition coefficient	no data available
Viscosity (dynamic)	ca. 470 mPa.s at 23 °C / 73 °F (Brookfield)
Viscosity (kinematic)	no data available

## 9.2. Other information

none

# Safety Data Sheet

OSHA 1910.1200  
Revision Date: 05/22/2017  
Print Date: 08/29/2017  
Version: 6.0



DEGAROUTE® 485 Binder Resin

Page 13 of 20

## 10. Stability and reactivity

### 10.1. Reactivity

see section 10.2.

### 10.2. Chemical stability

No decomposition if used as directed. Stable under normal 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

Heat and ignition sources, aging, contamination, oxygen free atmosphere. Ultraviolet light.

If the permissible storage period and/or storage temperature is exceeded, the product may polymerize with heat evolution.

### 10.5. Incompatible materials

Strong oxidizing agents

Reducing agents

Sulphur compounds

heavy metal ions

Tertiary amines

### 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

Acute toxicity estimate , Calculation method

2,187 mg/kg

Acute Inhalational Toxicity

Acute toxicity estimate , 4 h, Calculation method

43.66 mg/l

Acute Dermal Toxicity

Acute toxicity estimate , Calculation method

> 5,000 mg/kg

Caustic burning / irritation of skin

Properties of components in summary.  
Related to substance: product

irritating

Serious eye damage/eye irritation

Properties of components in summary.

irritating

# Safety Data Sheet

OSHA 1910.1200  
Revision Date: 05/22/2017  
Print Date: 08/29/2017  
Version: 6.0



DEGAROUTE® 485 Binder Resin

Page 14 of 20

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

Related to substance: n-butyl acrylate

Related to substance: n-butyl acrylate

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

Non-carcinogenic in inhalation and feeding studies carried out on rats, mice and dogs.

Related to substance: methyl methacrylate

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP, IARC, or OSHA.

## Reprotoxicity / teratogenicity

No indications of toxic effects were observed in reproduction studies in animals.

Related to substance: methyl methacrylate

## CMR assessment

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP, IARC, or OSHA.

## Toxicity on Repeated Administration

rat, inhalation, 2 Years

Findings: Damage to mucous membranes in the nose at 400 ppm

**NOAEL**  
25 ppm

Related to substance: methyl methacrylate

rat, in drinking water, 2 Years

Findings: no toxic effects

**NOAEL**  
2000 ppm

Related to substance: methyl methacrylate

## 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.

# Safety Data Sheet

OSHA 1910.1200  
Revision Date: 05/22/2017  
Print Date: 08/29/2017  
Version: 6.0



DEGAROUTE® 485 Binder Resin

Page 15 of 20

## 12. Ecological information

### 12.1. Toxicity

Aquaticity, fish	LC50 Oncorhynchus mykiss (rainbow trout), OECD 203, GLP, 96 h Related to substance: methyl methacrylate	> 79 mg/l
	LC50 Oncorhynchus mykiss (rainbow trout), ASTM/OECD 203, flow through, 96 h Related to substance: n-butyl acrylate	5.2 mg/l
Aquaticity, 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, ASTM/OECD 202, 48 h Related to substance: n-butyl acrylate	8.2 mg/l
Aquaticity, algae / aquatic plants	EC3 Scenedesmus quadricauda, DIN 38412, T.9, 8 d Related to substance: methyl methacrylate	37 mg/l
	EC50 selenastrum capricornutum, ASTM/OECD 203, 96 h Related to substance: n-butyl acrylate	5.5 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
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### 12.4. Mobility in soil

Mobility	no evidence for hazardous properties
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### 12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment	PBT: no vPvB: no
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### 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.
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# Safety Data Sheet

OSHA 1910.1200  
Revision Date: 05/22/2017  
Print Date: 08/29/2017  
Version: 6.0



DEGAROUTE® 485 Binder Resin

Page 16 of 20

## 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. <b>DO NOT HEAT OR CUT THE EMPTY CONTAINER WITH ELECTRIC OR GAS TORCH.</b>
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.  Do not reuse containers.

## 14. Transport information

### D.O.T. Road/Rail

14.1. UN number:	UN 1866
14.2. UN proper shipping name:	Resin solution
14.3. Transport hazard class(es):	3
14.4. Packing group:	II
14.5. Environmental hazards (Marine pollutant):	--
14.6. Special precautions for user:	No

### Air transport ICAO-TI/IATA-DGR

4.1. UN number:	UN 1866
4.2. UN proper shipping name:	Resin solution
4.3. Transport hazard class(es):	3
4.4. Packing group:	II
14.5. Environmental hazards:	--
14.6. Special precautions for user:	No

### Sea transport IMDG-Code/GGVSee (Germany)

4.1. UN number:	UN 1866
4.2. UN proper shipping name:	RESIN SOLUTION
4.3. Transport hazard class(es):	3
4.4. Packing group:	II
14.5. Environmental hazards (Marine pollutant):	--
14.6. Special precautions for user:	No
II EmS:	F-E,S-E

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code :  
for transport approval see regulatory information

## 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



# Safety Data Sheet

OSHA 1910.1200  
 Revision Date: 05/22/2017  
 Print Date: 08/29/2017  
 Version: 6.0



DEGAROUTE® 485 Binder Resin

Page 17 of 20

METI (J)	listed or exempted
ECL (KOR)	listed or exempted
PICCS (RP)	listed or exempted
IECSC (CN)	listed or exempted
HSNO (NZ)	listed or exempted

HSR002662, Surface Coatings  
 and Colorants (Flammable)  
 Group Standard 2006

## 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
n-butyl acrylate / 141-32-2	NONE	NONE	NO	YES	NO

## COMPONENT CLASSIFICATION UNDER CLEAN AIR ACT SECTION 112

Component / CASRN	Weight %	HAP	EHAP
methyl methacrylate / 80-62-6	15 - 40	YES	NO

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

ACUTE, CHRONIC, FIRE,

## US STATE REGULATORY INFORMATION

Component / CASRN	New Jersey RTK	Pennsylvan ia RTK	Massachus etts RTK	California Proposition 65 Cancer	California Proposition 65 Reproducti ve
methyl methacrylate / 80-62-6	YES	YES	YES	NO	NO
n-butyl acrylate / 141-32-2	YES	YES	YES	NO	NO
2-ethylhexyl acrylate / 103-11-7	YES	YES	YES	NO	NO
Tributyl-O-acetylacrylate / trade secret	NO	NO	NO	NO	NO
acrylic polymer	NO	NO	NO	NO	NO

## 16. Other information

Health

Flammability

Physical Hazard

# Safety Data Sheet

OSHA 1910.1200  
Revision Date: 05/22/2017  
Print Date: 08/29/2017  
Version: 6.0



DEGAROUTE® 485 Binder Resin

Page 18 of 20

HMIS-Ratings	2*	3	2
NFPA-Ratings	2	3	2

#### HMIS Hazard Ratings

4 = severe  
3 = serious  
2 = moderate  
1 = slight  
0 = minimal  
N = no rating for powders  
\* = chronic health hazard

#### NFPA Hazard Ratings

4 = extreme  
3 = high  
2 = moderate  
1 = slight  
0 = insignificant  
N = no rating for powders

#### 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.
	n-butyl acrylate
	H226 Flammable liquid and vapour.
	H315 Causes skin irritation.
	H317 May cause an allergic skin reaction.
	H319 Causes serious eye irritation.
	H332 Harmful if inhaled.
	H335 May cause respiratory irritation.
	H401 Toxic to aquatic life.
	H412 Harmful to aquatic life with long lasting effects.
	n-butyl acrylate
	H226 Flammable liquid and vapour.
	H315 Causes skin irritation.
	H317 May cause an allergic skin reaction.
	H319 Causes serious eye irritation.
	H332 Harmful if inhaled.
	H335 May cause respiratory irritation.
	H401 Toxic to aquatic life.
	H412 Harmful to aquatic life with long lasting effects.
	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.
	2-ethylhexyl acrylate
	H227 Combustible liquid.
	H315 Causes skin irritation.
	H317 May cause an allergic skin reaction.
	H335 May cause respiratory irritation.
	H401 Toxic to aquatic life.
	H412 Harmful to aquatic life with long lasting effects.
	Tributyl-O-acetylacrylate
	H402 Harmful to aquatic life.
	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.

# Safety Data Sheet

OSHA 1910.1200  
Revision Date: 05/22/2017  
Print Date: 08/29/2017  
Version: 6.0



DEGAROUTE® 485 Binder Resin

Page 19 of 20

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

Revision Date 05/22/2017

Places marked by || have been amended from the last version.

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## Legend

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

# Safety Data Sheet

OSHA 1910.1200  
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Print Date: 08/29/2017  
Version: 6.0



**DEGAROUTE® 485 Binder Resin**

Page 20 of 20

<b>ICAO-TI</b>	International Civil Aviation Organization- Technical Instructions
<b>ICCA</b>	International Council of Chemical Association
<b>ID</b>	Identification number
<b>IMDG</b>	International Maritime Dangerous Goods
<b>IUPAC</b>	International Union of Pure and Applied Chemistry
<b>ISO</b>	International Organization For Standardization
<b>LC50</b>	50 % Lethal Concentration
<b>LD50</b>	50 % Lethal Dose
<b>L(E)C50</b>	LC50 or EC50
<b>LOAEL</b>	Low est observed adverse effect level
<b>LOEL</b>	Low est observed effect level
<b>MARPOL</b>	International Convention for the Prevention of Pollution from Ships
<b>NFPA</b>	National Fire Protection Association
<b>NOAEL</b>	No observed adverse effect level
<b>NOEC</b>	no observed effect concentration
<b>NOEL</b>	no observed effect level
<b>o. c.</b>	open cup
<b>OECD</b>	Organisation for Economic Cooperation and Development
<b>OEL</b>	Occupational Exposure Limit
<b>OSHA</b>	Occupational Safety and Health Administration
<b>PBT</b>	Persistent, bioaccumulative, toxic
<b>PEC</b>	Predicted effect concentration
<b>PNEC</b>	Predicted no effect concentration
<b>RQ</b>	Reportable Quantity
<b>SDS</b>	Safety Data Sheet
<b>STOT</b>	Specific Target Organ Toxicity
<b>UN</b>	United Nations
<b>vPvB</b>	very persistent, very bioaccumulative
<b>voc</b>	volatile organic compounds
<b>WHMIS</b>	Workplace Hazardous Materials Information System
<b>WHO</b>	World Health Organization