1. Chemical Product and Company Identification

DEGADUR ® i-Component

Synonyms: Solution of an aromatic polyisocyanate in a solvent

Supplier:

DEGUSSA Corp./Röhm America LLC.
2 Turner Place, P.O. Box 365
Piscataway, NJ 08855

Non-Emergency Product Information: 800-477-4545/ 203-754-8373
Emergency Only CHEMTREC: 800-424-9300

Manufacturer:

Röhm GmbH & Co. KG
Kirschenallee
D-64293 Darmstadt
Germany

Product Use: additive for Solid Surface, auxiliary agent for floor coatings

2. Composition/Information on Ingredients

This material is classified as hazardous under OSHA regulations.

Ingredients	CAS Reg. No.	Weight %
methyl methacrylate	80-62-6	15 - 40
diphenylmethane-4,4'-diisocyanate	101-68-8	10 - 30
diphenylmethanediisocyanate	26447-40-5	0.1 - 1
polyisocyanate	proprietary	30 - 60

NJTSR # 80100103-5059P

See Section 8, Exposure Controls/Personal Protection

3. Hazards Identification

Emergency Overview

Color: brown
Appearance: liquid
Odor: sweet, ester-like

Flammable liquid and vapor.
Causes eye irritation.
Irritating to respiratory system and skin.
Sensitization by inhalation and skin contact.
May be ignited by heat, sparks or flame.
Vapors can travel to a source of ignition and flash back.
Danger of bursting of closed systems due to vigorous exothermic polymerization.
Avoid uncontrolled polymerization.
Container may explode when heated.

Primary Routes of Exposure
Inhalation
Skin contact

Potential Health Effects

Inhalation
Causes respiratory tract irritation.

Eye Contact
Severely irritating.

Skin Contact
Causes skin irritation.
Causes skin sensitization, an allergic reaction, which becomes evident on reexposure to this material.

Ingestion
Expected to be slightly toxic by ingestion.

Chronic Effects
No chronic (long-term) effects are known for humans.

Aggravated Medical Conditions
Conjunctivitis of the eye, dermatitis of the skin, asthma and respiratory diseases.

Potential Environmental Effects
See SECTION 12, Ecological Information

4. First Aid Measures

First Aid Procedures

Inhalation
Remove to fresh air. If breathing is difficult, give oxygen. If unconscious, evaluate the need for artificial respiration. Get immediate medical attention.

Eye Contact
In case of contact, immediately flush eyes with plenty of water for at least 15 minutes, or until all material has been removed. Obtain medical attention. DO NOT WEAR CONTACT LENSES WHEN USING THIS PRODUCT.

Skin Contact
Immediately wash skin with soap and plenty of water. Remove contaminated clothing. Obtain medical attention immediately if symptoms occur. Wash clothing before reuse.

Ingestion
Do NOT induce vomiting. Call a physician or poison control center immediately.

5. Fire-Fighting Measures

Flash point	9 °C (Setaflash Closed Cup) (methyl methacrylate) 48 °F (Setaflash Closed Cup) (methyl methacrylate)
Ignition temperature	430 °C (DIN 51794) (methyl methacrylate) 806 °F (DIN 51794) (methyl methacrylate)
Autoignition Temperature	not available
Lower explosion limit	2.1 %(V) (methyl methacrylate)

Upper explosion limit 12.5 %(V) (methyl methacrylate)

OSHA Flammability Classification Flammable liquid

Other Flammable Properties

Vapors are heavier than air and can form an explosive mixture with air. Never use welding or cutting torches on or near containers or drums (even when empty). Product residue or vapor in drums or container can ignite explosively. Cool warm or bulging containers to ambient temperature with water from a safe distance. Then wear eye and face protection and protective clothing while carefully opening bung to vent pressure.

Extinguishing Media

Use the following extinguishing media when fighting fires involving this material:
dry chemical - carbon dioxide - alcohol-resistant foam

Fire Fighting Procedures

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. Use water spray to cool containers exposed to fire and disperse vapors. Keep spills away from sources of ignition.

6. Accidental Release Measures

Procedures

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. Do not contaminate any lakes, streams, ponds, groundwater or soil. See section 8, Exposure Controls/Personal Protection.

7. Handling and Storage

Handling

Product is supplied in a stabilized form. Stir well before decanting from drum. Open container carefully as it may be pressurized. Use portable ventilation if necessary at job site. Ground and bond containers when transferring material. Keep container tightly closed. Use explosion-proof equipment. Do not eat, drink, smoke or chew tobacco around material.

Storage

Keep in the original container at a temperature not exceeding 35 °C (95 °F). Do not store in direct sunlight. Keep away from heat. Keep container closed when not in use. Ensure the area is well ventilated. Limit storage of flammable liquids to approved areas equipped with overhead sprinklers. Protect material from contamination (refer to Section 10 for incompatibilities). Fill the container by approximately 80 % only as oxygen (air) is required for stabilization. With large storage containers make sure the oxygen (air) supply is sufficient to ensure stability. Residual vapors might explode on ignition; do not apply heat, cut, drill, grind or weld on or near this container.

8. Exposure Controls/Personal Protection

Exposure Limit Information

METHYL METHACRYLATE

(CAS No. 80-62-6)

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

Occupational Exposure Values :			Remark(s):
ACGIH TLV-TWA	50 ppm	205 mg/m3	Sensitizer

OSHA PEL-TWA	100 ppm	410 mg/m3	
ACGIH TLV-STEL	100 ppm	410 mg/m3	Sensitizer
OSHA PEL-STEL			not established
OEL-TWA (Alberta)	100 ppm	410 mg/m3	
OEL-STEL (Alberta)	125 ppm	510 mg/m3	
OEL-TWA (British Columbia)	50 ppm		Skin designation (skin absorption can contribute to the overall exposure). Capable of causing respiratory or skin sensitization.Keep exposure as low as reasonably achievable.
OEL-STEL (British Columbia)	125 ppm		Skin designation (skin absorption can contribute to the overall exposure). Capable of causing respiratory or skin sensitization.Keep exposure as low as reasonably achievable.
OEL-TWA (Ontario)	100 ppm	410 mg/m3	
OEL-STEL (Ontario)			not established
OEL-TWA (Quebec)	100 ppm	410 mg/m3	
OEL-STEL (Quebec)			not established
OEL-TWA (Mexico)	100 ppm	410 mg/m3	
OEL-STEL (Mexico)	125 ppm	510 mg/m3	

DIPHENYLMETHANE-4,4'-DIISOCYANATE

(CAS No. 101-68-8)

Carcinogen designation(s) USA: EPA-D; EPA-CBD; IARC-3B

Occupational Exposure Values :			Remark(s):
ACGIH TLV-TWA	0.005 ppm	0.051 mg/m3	
ACGIH TLV-STEL			not established
OSHA PEL-TWA			not established
OSHA PEL-CEIL	0.02 ppm	0.2 mg/m3	
OEL-TWA (Alberta)	0.005 ppm	0.053 mg/m3	
OEL-CEIL (Alberta)	0.02 ppm	0.2 mg/m3	
OEL-TWA (British Columbia)	0.005 ppm		
OEL-CEIL (British Columbia)	0.01 ppm		
OEL-TWA (Ontario)			not established
OEL-STEL (Ontario)			not established
OEL-TWA (Quebec)	0.005 ppm	0.051 mg/m3	
OEL-STEL (Quebec)			not established
OEL-TWA (Mexico)	0.02 ppm	0.2 mg/m3	
OEL-STEL (Mexico)			not established

DIPHENYLMETHANEDIISOCYANATE
(CAS No. 26447-40-5)
No Occupational Exposure Values established (ACGIH, OSHA, Canada and Mexico).

Engineering Controls (Ventilation)
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.

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.

Eye Protection
Use chemical splash goggles and face shield (ANSI Z87.1) or approved equivalent.

Skin Protection
on handling of larger quantities: face mask, chemical-resistant boots and apron

Hand Protection
Chemical-resistant gloves should be worn whenever this material is handled.
Gloves should be replaced regularly, especially after extended contact with the product.
For each work-place a suitable glove type has to be selected.

Other Protective Equipment
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.

9. Physical and Chemical Properties

Appearance	brown
Physical state	liquid
Odor	sweet, ester-like
Flash point	9 °C (Setaflash Closed Cup) (methyl methacrylate) 48 °F (Setaflash Closed Cup) (methyl methacrylate)
pH-value	not applicable
Viscosity (outflow time)	35 - 45 s at 20 °C / 68 °F (ISO 2431, 6 mm cup)
Specific gravity (water = 1)	0.94 g/cm3 at 20 °C / 68 °F
Vapor density (air = 1)	> 1 at 20 °C / 68 °F
Vapor pressure	approx. 40 hPa (= mbar) at 20 °C / 68 °F
Melting temperature	-48 °C / -54 °F (methyl methacrylate)
Boiling Temperature	approx. 100 °C / 212 °F at 1,013 hPa (= mbar) (methyl methacrylate)
Solubility in water	approx. 20 g/l at 20 °C / 68 °F

Coefficient of Water/Oil Distribution	not available
Evaporation rate	> 1 (butyl acetate = 1)
Odor threshold	< 1 ppm
Further information	none

See Section 5, Fire Fighting Measures

10. Stability and Reactivity

Stability
This product is stable under normal storage conditions.

Conditions To Avoid
Heat and ignition sources, aging, contamination, oxygen free atmosphere.

Incompatibility With Other Materials
Peroxides, amines, sulfur compounds, heavy metal ions, alkalis, reducing agents and oxidizing agents.

Hazardous Decomposition Products
None when used as directed.

Hazardous Polymerization
The product is normally supplied in a stabilized form. If the permissible storage period and/or storage temperature is noticeably exceeded, the product may polymerize with heat evolution. May occur when exposed to excessive heating or contaminated with incompatible materials.

11. Toxicological Information

Acute Oral Toxicity

LD50 rat	> 5,000 mg/kg

The data mentioned above refer to the component diphenylmethane diisocyanate.

LD50 rat, OECD 401	> 5,000 mg/kg

The data mentioned above refer to the component methyl methacrylate.

Acute Inhalational Toxicity

LC50 rat, 4 h	0.172 - 0.187 mg/l

The data mentioned above refer to the component diphenylmethane diisocyanate.

LC50 rat, 4 h	29.8 mg/l

The data mentioned above refer to the component methyl methacrylate.

Acute Dermal Toxicity

LD50 rabbit	> 5,000 mg/kg

The data mentioned above refer to the component diphenylmethane diisocyanate.

LD50 rabbit	> 5,000 mg/kg

The data mentioned above refer to the component methyl methacrylate.

Irritant Effect on the Skin
Contact with skin may cause irritations.

Irritant Effect on the Eyes
Contact with the eyes may cause irritation.

Sensitization

sensitizing

May cause sensitization by inhalation. May cause sensitization by skin contact.
The data mentioned above refer to the component diphenylmethane diisocyanate.
guinea pig
In sensitization tests on guinea pigs with and without adjuvant, both positive and negative results were found.
The data mentioned above refer to the component methyl methacrylate.
man
In humans various types of allergic reactions have been observed (symptoms: headache, eye irritations, skin affections).
The data mentioned above refer to the component methyl methacrylate.

Carcinogenicity

Bioassay with indications to carcinogenic effects.
The data mentioned above refer to the component diphenylmethane diisocyanate.

Further Information on

Carefully avoid contact with skin and eyes as well as inhalation of product vapors.

12. Ecological Information

Information on Elimination (Persistence and Degradability)

Ecotoxicological Effect

Fish Toxicity

LC50 Brachydanio rerio, statis, 24 h	> 500 mg/l

The data mentioned above refer to the component diphenylmethane diisocyanate.

LC50 Oncorhynchus mykiss, rainbow trout, OECD 203, GLP, 96 h	> 79 mg/l

The data mentioned above refer to the component methyl methacrylate.

Daphnia Toxicity

LC50 Daphnia magna, statis	> 500 mg/l

The data mentioned above refer to the component diphenylmethane diisocyanate.

EC50 Daphnia magna, OECD 202, 48 h	69 mg/l

The data mentioned above refer to the component methyl methacrylate.

NOEC Daphnia magna, OECD 202 part 2, flow through, 21 d	37 mg/l

The data mentioned above refer to the component methyl methacrylate.

Algae Toxicity

EC3 Scenedesmus quadricauda, DIN 38412 section 9, 8 d source: literature	37 mg/l

The data mentioned above refer to the component methyl methacrylate.

Bacteria Toxicity

EC0 Pseudomonas putida	100 mg/l

The data mentioned above refer to the component methyl methacrylate.

Further Information on Ecology

Under formation of CO2 reaction products (polyureas) with water are formed, which are not biodegradable.
Do not allow to enter soil, waterways or waste water

13. Disposal Considerations

Procedures

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.
Do not reuse containers.

14. Transport Information

US DOT Hazard Classification

Proper Shipping Name:	Flammable liquid, n.o.s.
Technical Name:	(containing methyl methacrylate)
Hazard Class:	3
ID/UN Number:	UN 1993
Packing Group:	II
ERG:	128

Canadian TDG Classification

Refer to the classification US DOT

Shipment by sea IMDG/GGVSee

Class 3 EmS 3-07 UN number 1993
Marine pollutant Packed (+/0): 0
Packaging group II
Proper Shipping Name Flammable liquid, n.o.s. (containing methyl methacrylate)
Hazardous constituent: methyl methacrylate

Air transport ICAO/IATA

Class 3 UN number 1993
Packaging group II
Proper Shipping Name Flammable liquid, n.o.s. (containing methyl methacrylate)

15. Regulatory Information

INVENTORY INFORMATION

EC EINECS	listed
USA TSCA	listed
Canada DSL	listed

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
diphenylmethane-4,4'-diisocyanate / 101-68-8	NONE	5000	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
diphenylmethane-4,4'-diisocyanate / 101-68-8	10 - 30	YES	NO

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

ACUTE, CHRONIC, FIRE, REACTIVE,

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
diphenylmethane-4,4'-diisocyanate / 101-68-8	YES	YES	YES	NO	NO
diphenylmethanediisocyanate / 26447-40-5	YES	NO	NO	NO	NO

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: D2A, B2,D2B

Component / CASRN	NPRI
methyl methacrylate / 80-62-6	YES
diphenylmethane-4,4'-diisocyanate / 101-68-8	NO
diphenylmethanediisocyanate / 26447-40-5	NO

16. Other Information

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

This MSDS was prepared in accordance with ANSI Z400.1-1998.

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

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