

SAFETY DATA SHEET



Enriching lives through innovation

JEFFCAT® DMDEE (US)

Version	Revision Date:	SDS Number:	Date of last issue: 05/17/2017
2.0	05/20/2021	400001007372	Date of first issue: 12/17/2015

Print Date 02/15/2024

SECTION 1. IDENTIFICATION

Product name : JEFFCAT® DMDEE (US)

Manufacturer or supplier's details

Company name of supplier : Huntsman International LLC
Address : P.O. Box 4980
The Woodlands,
TX 77387
United States of America (USA)
Telephone : TechInfo: (281) 719-7780

E-mail address of person responsible for the SDS : Global_Product_EHS_HPP@huntsman.com

Emergency telephone number : Chemtrec: (800) 424-9300 or (703) 527-3887

Recommended use of the chemical and restrictions on use

Recommended use : Component of a Polyurethane System.

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Eye irritation : Category 2B

GHS label elements

Signal word : Warning

Hazard statements : H320 Causes eye irritation.

Precautionary statements : **Prevention:**
P264 Wash skin thoroughly after handling.
Response:
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 If eye irritation persists: Get medical advice/attention.
Storage:
Not available
Disposal:
Not available

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

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Substance / Mixture : Substance

Hazardous components

Chemical name	CAS-No.	Concentration (% w/w)
2,2'-dimorpholinyldiethyl ether	6425-39-4	90 - 100
4,4'-(ethane-1,2-diyl)bismorpholine	1723-94-0	5 - 10

The specific chemical identity and/or exact percentage (concentration) of composition may be withheld as a trade secret.

SECTION 4. FIRST AID MEASURES

- General advice : Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.
Treat symptomatically.
Get medical attention if symptoms occur.
- If inhaled : If inhaled, remove to fresh air.
Get medical attention if symptoms occur.
- In case of skin contact : If skin irritation persists, call a physician.
If on skin, rinse well with water.
If on clothes, remove clothes.
- In case of eye contact : Immediately flush eye(s) with plenty of water.
Remove contact lenses.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.
- If swallowed : Clean mouth with water and drink afterwards plenty of water.
Keep respiratory tract clear.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : None known.
- Protection of first-aiders : First Aid responders should pay attention to self-protection and use the recommended protective clothing
If potential for exposure exists refer to Section 8 for specific personal protective equipment.
Avoid inhalation, ingestion and contact with skin and eyes.
No action shall be taken involving any personal risk or without suitable training.
It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
- Notes to physician : Treat symptomatically.

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SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Water spray
Alcohol-resistant foam
Carbon dioxide (CO₂)
Dry chemical
- Unsuitable extinguishing media : Exercise caution when using a high volume water jet as it may scatter and spread fire
- Specific hazards during firefighting : No information available.
- Hazardous combustion products : No hazardous combustion products are known
- Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Further information : No action shall be taken involving any personal risk or without suitable training.
- Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Refer to protective measures listed in sections 7 and 8.
- Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Neutralise with acid.
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Repeated or prolonged skin contact may cause skin irritation and/or dermatitis and sensitisation of susceptible persons.
Persons suffering from asthma, eczema or skin problems should avoid contact, including dermal contact, with this product.

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Do not breathe vapours/dust.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Dispose of rinse water in accordance with local and national regulations.

Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.
Keep in properly labelled containers.

Materials to avoid : Do not store near acids.

Further information on storage stability : Stable under normal conditions.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection : General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

Hand protection

Remarks : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Eye wash bottle with pure water
Tightly fitting safety goggles
Wear face-shield and protective suit for abnormal processing problems.

Skin and body protection : Impervious clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

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Hygiene measures : When using do not eat or drink.
When using do not smoke.
Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: liquid
Colour	: colourless, light yellow
Odour	: amine-like
Odour Threshold	: No data is available on the product itself.
pH	: 10.3
Melting point/freezing point	: < -4 °F / < -20 °C Method: Melting / Freezing Temperature
Boiling point	: 588 °F / 309 °C
Flash point	: 329.9 °F / 165.5 °C Method: Seta closed cup, closed cup
Evaporation rate	: No data is available on the product itself.
Flammability (solid, gas)	: No data is available on the product itself.
Flammability (liquids)	: No data is available on the product itself.
Upper explosion limit / Upper flammability limit	: No data is available on the product itself.
Lower explosion limit / Lower flammability limit	: No data is available on the product itself.
Vapour pressure	: 0.66 hPa (68 °F / 20 °C) Method: Vapour Pressure
Relative vapour density	: 1
Relative density	: 1.06 (68 °F / 20 °C) Method: Relative Density
Density	: No data is available on the product itself.
Solubility(ies)	
Water solubility	: 100 g/l completely miscible (68 °F / 20 °C) Method: Water solubility
Solubility in other solvents	: No data is available on the product itself.
Partition coefficient: n-octanol/water	: log Pow: 0.5 (77 °F / 25 °C) Method: OECD Test Guideline 117

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GLP: no

Auto-ignition temperature : 408 °F / 209 °C
Method: Auto-Ignition Temperature (Liquids and Gases)

Decomposition temperature : > 392 °F / > 200 °C
Method: Boiling Temperature

Self-Accelerating decomposition temperature (SADT) : No data is available on the product itself.

Viscosity
Viscosity, kinematic : 216.6 mm²/s (68 °F / 20 °C)

Explosive properties : No data is available on the product itself.

Oxidizing properties : None.
Method: Directive 67/548/EEC, Annex V, A.21

Molecular weight : 244.37 g/mol

Metal corrosion rate : Not corrosive to metals

Particle size : No data is available on the product itself.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No dangerous reaction known under conditions of normal use.
No dangerous reaction known under conditions of normal use.

Chemical stability : Stable under normal conditions.
Stable under normal conditions.

Possibility of hazardous reactions : No hazards to be specially mentioned.

Conditions to avoid : None known.

Incompatible materials : None known.

Hazardous decomposition products : Carbon dioxide (CO₂)
Carbon monoxide
Nitrogen oxides (NO_x)

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : No data is available on the product itself.

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Acute toxicity

Acute oral toxicity - Product : LD50 (Rat, male and female): 2,025 mg/kg
Method: OECD Test Guideline 401

Acute inhalation toxicity : No data available

Acute dermal toxicity - Product : LD50 (Rabbit, male and female): 3,038 mg/kg
Method: OECD Test Guideline 402

Acute toxicity (other routes of administration) : No data available

Skin corrosion/irritation

Product:

Species: Rabbit
Assessment: Mild skin irritant
Method: OECD Test Guideline 404
Result: slight irritation

Serious eye damage/eye irritation

Components:

2,2'-dimorpholinyl-diethyl ether:
Species: Rabbit
Result: Mild eye irritation
Method: OECD Test Guideline 405

4,4'-(ethane-1,2-diyl)bismorpholine:
Result: Mild eye irritation

Respiratory or skin sensitisation

Components:

2,2'-dimorpholinyl-diethyl ether:
Test Type: Buehler Test
Exposure routes: Skin
Species: Guinea pig
Assessment: Did not cause sensitisation on laboratory animals.
Method: OECD Test Guideline 406
Result: Did not cause sensitisation on laboratory animals.

Assessment: No data available

Germ cell mutagenicity

Product:

Genotoxicity in vitro : Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative

Concentration: 0 - 5000 ug/plate
Metabolic activation: with and without metabolic activation

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Method: OECD Test Guideline 471
Result: negative

Product:

Genotoxicity in vivo : Application Route: Oral
Dose: 2000 mg/kg
Method: OECD Test Guideline 474
Result: negative

Germ cell mutagenicity-
Assessment : No data available

Carcinogenicity

No data available

Carcinogenicity -
Assessment : No data available

IARC

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

OSHA

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP

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.

Reproductive toxicity**Product:**

Effects on fertility : Species: Rat, male and female
Application Route: Oral
Method: OECD Test Guideline 422

Components:

2,2'-dimorpholinyl diethyl ether:
Effects on foetal development : Test Type: Pre-natal
Species: Rat, female
Application Route: Oral
Dose: 75, 250, 750 milligram per kilogram
Duration of Single Treatment: 14 d
General Toxicity Maternal: No observed adverse effect level: 75 mg/kg body weight
Developmental Toxicity: No observed adverse effect level: 750 mg/kg body weight
Method: OECD Test Guideline 414
Result: No effects on fertility and early embryonic development were detected.

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Remarks: Information given is based on data obtained from similar substances.

Reproductive toxicity - Assessment : No data available

STOT - single exposure

No data available

STOT - repeated exposure

No data available

Repeated dose toxicity

Product:

Species: Rat, male and female

NOEC: 300 mg/m³

Application Route: Ingestion

Test atmosphere: vapour

Exposure time: 17,472 h

Number of exposures: 6 h

Method: OECD Test Guideline 452

Repeated dose toxicity - Assessment : No data available

Aspiration toxicity

No data available

Experience with human exposure

General Information: No data available

Inhalation: No data available

Skin contact: No data available

Eye contact: No data available

Ingestion: No data available

Toxicology, Metabolism, Distribution

No data available

Neurological effects

No data available

Further information

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Ingestion: No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Toxicity to fish - Product	: LC50 (Brachydanio rerio (zebrafish)): 2,150 mg/l Exposure time: 96 h Test Type: static test Test substance: Fresh water Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates - Product	: EC50 (Daphnia magna (Water flea)): > 100 mg/l Exposure time: 48 h Test Type: static test Test substance: Fresh water Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants - Product	: ErC50 (Selenastrum capricornutum (green algae)): > 100 mg/l Exposure time: 72 h Test Type: static test Test substance: Fresh water Method: OECD Test Guideline 201
M-Factor (Acute aquatic toxicity)	: No data available
Toxicity to fish (Chronic toxicity)	: No data available
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: No data available
M-Factor (Chronic aquatic toxicity)	: No data available
Toxicity to microorganisms - Product	: EC50 (activated sludge): > 1,000 mg/l Exposure time: 3 h Test Type: static test Test substance: Fresh water Method: OECD Test Guideline 209 GLP: yes
Toxicity to soil dwelling organisms	: No data available
Plant toxicity	: No data available
Sediment toxicity	: No data available
Toxicity to terrestrial organisms	: No data available

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Ecotoxicology Assessment
Acute aquatic toxicity : No data available

Chronic aquatic toxicity : No data available

Toxicity Data on Soil : No data available

Other organisms relevant to
the environment : No data available

Persistence and degradability

Biodegradability - Product : Inoculum: Mixture
Result: Not readily biodegradable.
Biodegradation: 4 %
Exposure time: 28 d
Method: OECD Test Guideline 301C

Biochemical Oxygen
Demand (BOD) : No data available

Chemical Oxygen Demand
(COD) : No data available

BOD/COD : No data available

ThOD : No data available

BOD/ThOD : No data available

Dissolved organic carbon
(DOC) : No data available

Physico-chemical
removability : No data available

Stability in water - Product : Degradation half life(DT50): 1 yr (131 °F / 55 °C) pH: 7
Method: No information available.
GLP: No information available.
Remarks: Fresh water

Photodegradation : No data available

Impact on Sewage
Treatment : No data available

Bioaccumulative potential

Bioaccumulation - Product : Species: Cyprinus carpio (Carp)
Bioconcentration factor (BCF): 3
Exposure time: 56 d
Test substance: Fresh water
Method: flow-through test

Partition coefficient: n-
octanol/water - Product : log Pow: 0.5 (77 °F / 25 °C)
Method: OECD Test Guideline 117

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GLP: no

Mobility in soil

Mobility : No data available

Distribution among
environmental compartments : Koc: 784

- Product
Stability in soil : No data available

Other adverse effects

Environmental fate and
pathways : No data available

Results of PBT and vPvB
assessment : No data available

Endocrine disrupting
potential : No data available

Adsorbed organic bound
halogens (AOX) : No data available

Hazardous to the ozone layer

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82
Protection of Stratospheric Ozone - CAA Section 602 Class I
Substances
Remarks: This product neither contains, nor was
manufactured with a Class I or Class II ODS as defined by the
U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A +
B).

Additional ecological
information : No data available

Global warming potential
(GWP) : No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of contents and container in accordance with all local,
regional, national and international regulations.
Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with
chemical or used container.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.

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SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA

Not regulated as dangerous goods

IMDG

Not regulated as dangerous goods

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

DOT Classification

Not regulated as dangerous goods

SECTION 15. REGULATORY INFORMATION

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 311/312 Hazards : Serious eye damage or eye irritation

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

DSL : All components of this product are on the Canadian DSL

AIIC : On the inventory, or in compliance with the inventory

NZIoC : On the inventory, or in compliance with the inventory

ENCS : Not in compliance with the inventory

KECI : On the inventory, or in compliance with the inventory

PICCS : On the inventory, or in compliance with the inventory

IECSC : On the inventory, or in compliance with the inventory

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TCSI : On the inventory, or in compliance with the inventory

TSCA : All substances listed as active on the TSCA inventory

Inventories

AIIC (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

TSCA - 5(a) Significant New Use Rule List of Chemicals

No substances are subject to a Significant New Use Rule.

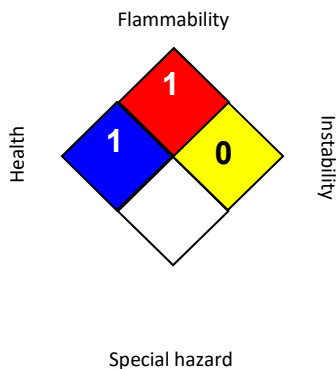
US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Further information

NFPA 704:



HMIS® IV:

HEALTH		1
FLAMMABILITY		1
PHYSICAL HAZARD		0

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "" represents a chronic hazard, while the "/" represents the absence of a chronic hazard

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The information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, NOTHING HEREIN IS TO BE CONSTRUED AS A WARRANTY, EXPRESS OR OTHERWISE.

IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE.

THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

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