

JEFFAMINE® D 230

Version	Revision Date:	SDS Number:	Date of last issue:
1.1	03/30/2016	400001000022	02/19/2016
			Date of first issue: 02/19/2016

SECTION 1. IDENTIFICATION

Product name : JEFFAMINE® D 230

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
Telephone : TechInfo: (281) 719-7780

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

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

Recommended use of the chemical and restrictions on use

Recommended use : Manufacture of plastics products
Hardener

SECTION 2. HAZARDS IDENTIFICATION**GHS Classification**

Skin corrosion : Category 1C
Serious eye damage : Category 1
Acute aquatic toxicity : Category 3
Chronic aquatic toxicity : Category 3

GHS Label element

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
H412 Harmful to aquatic life with long lasting effects.

Precautionary Statements : **Prevention:**
P264 Wash skin thoroughly after handling.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

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Response:

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.

P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.

P363 Wash contaminated clothing before reuse.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance

Hazardous ingredients

Chemical Name	CAS-No.	Concentration (%)
Polyoxypropylene diamine	9046-10-0	60 - 100

SECTION 4. FIRST AID MEASURES

- General advice : Move out of dangerous area.
Consult a physician.
Show this material safety data sheet to the doctor in attendance.
Do not leave the victim unattended.
- If inhaled : If unconscious place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- In case of skin contact : Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.
If on skin, rinse well with water.
If on clothes, remove clothes.
- In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.

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Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

If swallowed : Keep respiratory tract clear.
Do NOT induce vomiting.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
Take victim immediately to hospital.

Most important symptoms and effects, both acute and delayed : None known.

Notes to physician : No information available.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media : High volume water jet

Specific hazards during fire fighting : Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : No hazardous combustion products are known

Specific extinguishing methods : No data is available on the product itself.

Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Special protective equipment for fire-fighters : 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.

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.

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Methods and materials for containment and cleaning up : Neutralize 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 : Do not breathe vapors/dust.
Avoid contact with skin and eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
To avoid spills during handling keep bottle on a metal tray.
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.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Observe label precautions.
Electrical installations / working materials must comply with the technological safety standards.

Materials to avoid : Keep away from strong acids.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Ingredients with workplace control parameters**

Contains no substances with occupational exposure limit values.

Engineering measures : Maintain air concentrations below occupational exposure standards.

Personal protective equipment

Respiratory protection : No personal respiratory protective equipment normally required.

Hand protection

Material : butyl-rubber
Break through time : > 8 h

Solvent-resistant gloves (butyl-rubber)
Nitrile rubber
> 480 min

Glove thickness : 0.85 mm

PVC

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Remarks	: 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.
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
Color	: colorless
Odor	: ammoniacal
Odor Threshold	: No data available
pH	: 11.7, Concentration: 50 g/l
Melting point/freezing point	: No data available
Boiling point	: 232 °C (1,013.25 hPa)
Flash point	: 128 °C Method: ISO 2719, closed cup
Evaporation rate	: No data is available on the product itself.
Flammability (solid, gas)	: No data is available on the product itself.
Upper explosion limit	: No data available
Lower explosion limit	: No data available
Vapor pressure	: 0.9 hPa (20 °C)
	2.1 hPa (50 °C)
	1,013.25 hPa (232 °C)

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Relative vapor density	: 1
Relative density	: 0.9476 (20 °C)
Density	: No data available
Solubility(ies)	
Water solubility	: 100 g/l (20 °C)
Solubility in other solvents	: No data is available on the product itself.
Partition coefficient: n-octanol/water	: log Pow: 1.34 (25 °C)
Autoignition temperature	: 230 °C
Thermal decomposition	: No data is available on the product itself.
Viscosity	
Viscosity, dynamic	: 10.3 mPa.s (20 °C)
	5.08 mPa.s (40 °C)
Viscosity, kinematic	: 10.9 mm ² /s (20 °C)
	5.46 mm ² /s (40 °C)
Oxidizing properties	: None.
Self-Accelerating decomposition temperature (SADT)	: No data is available on the product itself.
Molecular weight	: No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: Not classified as a reactivity hazard.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: No decomposition if stored and applied as directed.
Conditions to avoid	: No data available
Incompatible materials	: No data available
Hazardous decomposition products	: Ammonia
	Carbon monoxide
	Carbon dioxide (CO ₂)
	Aldehydes
	Ketones
	Nitrogen oxides (NO _x)

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SECTION 11. TOXICOLOGICAL INFORMATION

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

Acute toxicity

Acute oral toxicity - Product : LD50 (Rat, male and female): 2,885.3 mg/kg
Method: OECD Test Guideline 401

Ingredients:

Polyoxypropylene diamine:

Acute inhalation toxicity : LC50 (Rat, male and female): > 0.74 mg/l
Exposure time: 8 h
Test atmosphere: vapor
Method: OECD Test Guideline 403

Acute dermal toxicity - Product : LD50 (Rabbit, male and female): 2,979.7 mg/kg
Method: OECD Test Guideline 402

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

Skin corrosion/irritation**Product:**

Result: Corrosive after 1 to 4 hours of exposure

Serious eye damage/eye irritation**Ingredients:**

Polyoxypropylene diamine:

Species: Rabbit

Result: Irreversible effects on the eye

Assessment: Corrosive

Method: OECD Test Guideline 405

Respiratory or skin sensitization**Product:**

Routes of exposure: Skin

Species: Guinea pig

Result: Does not cause skin sensitization.

Routes of exposure: Respiratory Tract

Species: Not Assigned

Result: No data available

Routes of exposure: Skin

Species: Not Assigned

Result: No data available

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Assessment: No data available

Germ cell mutagenicity**Product:**

Genotoxicity in vitro : Concentration: 0 - 10000 ug/plate
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative
GLP: no

Product:

Genotoxicity in vivo : Application Route: Oral
Dose: 500 mg/kg
Method: OECD Test Guideline 474
Result: negative

Carcinogenicity

No data available

Carcinogenicity - Assessment : No data available

IARC

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

OSHA

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

NTP

No ingredient 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: Dermal
Method: OECD Test Guideline 421
GLP: yes

Effects on fetal development : No data available

Reproductive toxicity - Assessment : No data available

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STOT-single exposure

No data available

STOT-repeated exposure

No data available

Repeated dose toxicity**Product:**

Species: Rat, male and female
NOAEL (No observed adverse effect level): > 250 mg/kg
Application Route: Dermal
Exposure time: 90 Days
Number of exposures: 5 d
Subsequent observation period: 28 days
Method: Subchronic toxicity

Species: Rat, male and female
NOAEL (No observed adverse effect level): > 239 mg/kg
Application Route: oral (feed)
Exposure time: 31 Days
Method: Subacute toxicity

Species: Rat, male and female
NOAEL (No observed adverse effect level): 100 mg/kg
Application Route: Dermal
Exposure time: 28 Days
Number of exposures: 5 d
Method: Subacute toxicity

Repeated dose toxicity - : No data available
Assessment

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

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Neurological effects

No data available

Further information**Product:**

Remarks: No data available

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity**

Toxicity to fish - Product : EC50 (Oncorhynchus mykiss (rainbow trout)): > 15 mg/l
Exposure time: 96 h
Test Type: semi-static test
Test substance: Fresh water
Method: OECD Test Guideline 203

LC50: 772.14 mg/l
Exposure time: 96 h
Test Type: static test
Test substance: Marine water
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates - Product : EC50 (Daphnia magna (Water flea)): 80 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 202

EC50 (Acartia tonsa): 418.34 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: Marine water

Toxicity to algae - Product : ErC50 (Selenastrum capricornutum (green algae)): 15 mg/l
Exposure time: 72 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 201

EbC50 (Skeletonema costatum): 141.72 mg/l
Exposure time: 72 h
Test Type: static test
Test substance: Marine water
Method: ISO 10253

M-Factor (Acute aquatic toxicity) : No data available

Toxicity to fish (Chronic toxicity) : No data available

Toxicity to daphnia and other : No data available

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aquatic invertebrates
(Chronic toxicity)

M-Factor (Chronic aquatic toxicity) : No data available

Toxicity to bacteria : No data available

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

Ecotoxicology Assessment
Acute aquatic toxicity : No data available

Ingredients:

Polyoxypropylene diamine:
Chronic aquatic toxicity : Harmful to aquatic life with long lasting effects.

Toxicity Data on Soil : No data available

Other organisms relevant to the environment : No data available

Further information:
No data available

Persistence and degradability**Ingredients:**

Polyoxypropylene diamine:
Biodegradability : Inoculum: Mixture
Result: Not biodegradable.
Biodegradation: 0 %
Exposure time: 28 d
Method: OECD Test Guideline 301B

Biochemical Oxygen Demand (BOD) : No data available

Chemical Oxygen Demand (COD) : No data available

BOD/COD : No data available

ThOD : No data available

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BOD/ThOD : No data available

Dissolved organic carbon (DOC) : No data available

Physico-chemical removability : No data available

Stability in water : No data available

Photodegradation - Product : Test Type: Air

Impact on Sewage Treatment : No data available

Bioaccumulative potential

Bioaccumulation : No data available

Partition coefficient: n-octanol/water - Product : log Pow: 1.34 (25 °C)

Mobility in soil

Mobility : No data available

Distribution among environmental compartments : No data available

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 : Not applicable

Additional ecological information - Product : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Toxic to aquatic life with long lasting effects.

Global warming potential (GWP) : No data available

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SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

Waste from residues	: The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.
Contaminated packaging	: Empty remaining contents. Dispose of as unused product. Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION**International Regulation****IATA**

UN/ID No.	: UN 2735
Proper shipping name	: Amines, liquid, corrosive, n.o.s. (POLYOXYPROPYLENEDIAMINE)
Class	: 8
Packing group	: III
Labels	: Corrosive
Packing instruction (cargo aircraft)	: 856
Packing instruction (passenger aircraft)	: 852

IMDG

UN number	: UN 2735
Proper shipping name	: AMINES, LIQUID, CORROSIVE, N.O.S. (POLYOXYPROPYLENEDIAMINE)
Class	: 8
Packing group	: III
Labels	: 8
EmS Code	: F-A, S-B
Marine pollutant	: no

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

Not applicable for product as supplied.

Domestic regulation**DOT Classification**

UN/ID/NA number	: UN 2735
Proper shipping name	: AMINES, LIQUID, CORROSIVE, N.O.S. (POLYOXYPROPYLENEDIAMINE)

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Class	: 8
Packing group	: III
Labels	: CORROSIVE
ERG Code	: 153
Marine pollutant	: no

SECTION 15. REGULATORY INFORMATION

TSCA - 5(a) Significant New Use Rule List of Chemicals : Not relevant

EPCRA - Emergency Planning and Community Right-to-Know**CERCLA Reportable Quantity**

Ingredients	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
PROPYLENE OXIDE (PO)	75-56-9	100	*

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 311/312 Hazards : Acute Health Hazard

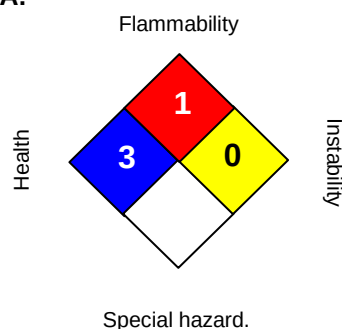
California Prop 65 WARNING! This product contains a chemical known in the State of California to cause cancer.
methyloxirane 75-56-9

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

CH INV	: The mixture contains substances listed on the Swiss Inventory
TSCA	: On TSCA Inventory
DSL	: All components of this product are on the Canadian DSL.
AICS	: On the inventory, or in compliance with the inventory
NZIoC	: On the inventory, or in compliance with the inventory
ENCS	: On the inventory, or in compliance with the inventory
ISHL	: On the inventory, or 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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SECTION 16. OTHER INFORMATION**Further information****NFPA:****HMIS III:**

HEALTH	3
FLAMMABILITY	1
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,

2 = Moderate, 3 = High

4 = Extreme, * = Chronic

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Sources of key data used to compile the Material Safety Data Sheet : Information taken from reference works and the literature.,
Information derived from practical experience.

Revision Date : 03/30/2016

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Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.

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