



# SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision Date 01/27/2015

Version 1.2

## SECTION 1. Identification

### Product identifier

Product number	842873
Product name	4,9-Dioxa-1,12-dodecanediamine for synthesis
CAS-No.	7300-34-7

### Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Chemical for synthesis
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### Details of the supplier of the safety data sheet

Company	EMD Millipore Corporation   290 Concord Road, Billerica, MA 01821, United States of America   General Inquiries: +1-978-715-4321   Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)
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Emergency telephone	800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week
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## SECTION 2. Hazards identification

### GHS Classification

Acute toxicity, Category 4, Inhalation, H332

Skin corrosion, Category 1B, H314

Serious eye damage, Category 1, H318

For the full text of the H-Statements mentioned in this Section, see Section 16.

### GHS-Labeling

#### Hazard pictograms



#### Signal Word

Danger

#### Hazard Statements

H314 Causes severe skin burns and eye damage.

H332 Harmful if inhaled.

#### Precautionary Statements

P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.

P264 Wash skin thoroughly after handling.

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P271 Use only outdoors or in a well-ventilated area.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.  
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P310 Immediately call a POISON CENTER or doctor/ physician.  
P321 Specific treatment (see supplemental first aid instructions on this label).  
P363 Wash contaminated clothing before reuse.  
P405 Store locked up.  
P501 Dispose of contents/ container to an approved waste disposal plant.

## Other hazards

None known.

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## SECTION 3. Composition/information on ingredients

Formula  $C_{10}H_{24}N_2O_2$  (Hill)  
Molar mass 204.31 g/mol

### Hazardous ingredients

*Chemical Name (Concentration)*

CAS-No.

1,4-bis(3-aminopropoxy)butane ( $\geq 90\%$  -  $\leq 100\%$ )  
7300-34-7

Exact percentages are being withheld as a trade secret.

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## SECTION 4. First aid measures

### Description of first-aid measures

#### *Inhalation*

After inhalation: fresh air. Call in physician.

#### *Skin contact*

After skin contact: wash off with plenty of water. Immediately remove contaminated clothing. If available swab with polyethylene glycol 400. Call a physician immediately.

#### *Eye contact*

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist.

#### *Ingestion*

After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation!). Call a physician immediately. Do not attempt to neutralize.

Never give anything by mouth to an unconscious person.

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

pain, Dizziness, Nausea, Vomiting

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

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No information available.

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### SECTION 5. Fire-fighting measures

#### Extinguishing media

##### *Suitable extinguishing media*

Carbon dioxide (CO<sub>2</sub>), Foam, Dry powder

##### *Unsuitable extinguishing media*

For this substance/mixture no limitations of extinguishing agents are given.

#### Special hazards arising from the substance or mixture

Combustible material, Vapors are heavier than air and may spread along floors.

Forms explosive mixtures with air on intense heating.

Development of hazardous combustion gases or vapors possible in the event of fire.

Fire may cause evolution of:

nitrogen oxides

#### Advice for firefighters

##### *Special protective equipment for fire-fighters*

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

##### *Further information*

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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### SECTION 6. Accidental release measures

#### Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid substance contact. Do not breathe vapors, aerosols. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

#### Environmental precautions

Do not empty into drains.

#### Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills.

Observe possible material restrictions (see sections 7 and 10).

Take up with liquid-absorbent and neutralizing material (e.g. Chemizorb® OH<sup>-</sup>, Art. No. 101596).

Dispose of properly. Clean up affected area.

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### SECTION 7. Handling and storage

#### Precautions for safe handling

Observe label precautions.

Work under hood. Do not inhale substance/mixture. Avoid generation of vapors/aerosols.

#### Conditions for safe storage, including any incompatibilities

Tightly closed.

Store at +15°C to +25°C (+59°F to +77°F).

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### SECTION 8. Exposure controls/personal protection

#### Exposure limit(s)

Contains no substances with occupational exposure limit values.

#### Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

#### Individual protection measures

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

#### *Hygiene measures*

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance.

#### *Eye/face protection*

Tightly fitting safety goggles

#### *Hand protection*

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.

#### *Other protective equipment:*

protective clothing

#### *Respiratory protection*

required when vapors/aerosols are generated.

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

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### SECTION 9. Physical and chemical properties

Physical state	liquid
Color	light yellow
Odor	amine-like
Odor Threshold	No information available.
pH	10 at 100 g/l 68 °F (20 °C)
Melting point	4.5 °C
Boiling point/boiling range	568 °F (298 °C) (decomposition)

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Flash point	318 °F (159 °C) Method: c.c. DIN 51758
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	1.3 %(V)
Upper explosion limit	4.9 %(V)
Vapor pressure	1 hPa at 122 °F (50 °C)
Relative vapor density	No information available.
Density	0.96 g/cm <sup>3</sup> at 68 °F (20 °C)
Relative density	No information available.
Water solubility	at 68 °F (20 °C) soluble
Partition coefficient: n-octanol/water	log Pow: <= -0.4 (25 °C) (experimental) Bioaccumulation is not expected. (External MSDS)
Autoignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	11.3 mPa.s at 68 °F (20 °C)
Explosive properties	No information available.
Oxidizing properties	No information available.
Ignition temperature	473 °F (245 °C) DIN 51794

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### SECTION 10. Stability and reactivity

#### Reactivity

Forms explosive mixtures with air on intense heating.

#### Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

#### Possibility of hazardous reactions

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Strong oxidizing agents, acids

### Conditions to avoid

Strong heating.

A range from approx. 15 Kelvin below the flash point is to be rated as critical.

### Incompatible materials

no information available

### Hazardous decomposition products

in the event of fire: See section 5.

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## SECTION 11. Toxicological information

### Information on toxicological effects

#### *Likely route of exposure*

Eye contact, Skin contact

#### *Acute oral toxicity*

LD50 Rat: 3,450 mg/kg (RTECS)

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach.

#### *Acute inhalation toxicity*

LC50 Rat: 1.5 mg/l; 4 h Aerosol (External MSDS)

Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of respiratory tract, Lung edema, The substance has delayed effects.

absorption

#### *Skin irritation*

Rabbit

Result: Causes burns.

(External MSDS)

Causes burns.

#### *Eye irritation*

Causes serious eye damage.

Risk of blindness!

#### *Genotoxicity in vitro*

Ames test

Result: negative

(External MSDS)

#### *Specific target organ systemic toxicity - single exposure*

The substance or mixture is not classified as specific target organ toxicant, single exposure.

#### *Specific target organ systemic toxicity - repeated exposure*

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

#### *Aspiration hazard*

Regarding the available data the classification criteria are not fulfilled.

### Carcinogenicity

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.

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

### Further information

Systemic effects:

Dizziness, Nausea, Vomiting, pain

Further data:

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

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## SECTION 12. Ecological information

### Ecotoxicity

*Toxicity to fish*

LC50 *Leuciscus idus* (Golden orfe): 220 - 320 mg/l; 96 h (External MSDS)

### Persistence and degradability

No information available.

### Bioaccumulative potential

*Partition coefficient: n-octanol/water*

log Pow:  $\leq -0.4$  (25 °C)

(experimental)

Bioaccumulation is not expected. (External MSDS)

### Mobility in soil

No information available.

*Additional ecological information*

Discharge into the environment must be avoided.

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## SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

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## SECTION 14. Transport information

### Land transport (DOT)

UN number UN 2735  
Proper shipping name AMINES, LIQUID, CORROSIVE, N.O.S. (4,9-DIOXA-1,12-DODECANEDIAMINE)  
Class 8  
Packing group II  
Environmentally hazardous --

### Air transport (IATA)

UN number UN 2735  
Proper shipping name AMINES, LIQUID, CORROSIVE, N.O.S. (4,9-DIOXA-1,12-DODECANEDIAMINE)  
Class 8  
Packing group II  
Environmentally hazardous --  
Special precautions for user no

### Sea transport (IMDG)

UN number UN 2735  
Proper shipping name AMINES, LIQUID, CORROSIVE, N.O.S. (4,9-DIOXA-1,12-DODECANEDIAMINE)  
Class 8  
Packing group II  
Environmentally hazardous --  
Special precautions for user yes  
EmS F-A S-B

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## SECTION 15. Regulatory information

### United States of America

#### 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.

#### SARA 302

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.



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## Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

## DEA List I

Not listed

## DEA List II

Not listed

## US State Regulations

### Massachusetts Right To Know

Remarks

No components are subject to the Massachusetts Right to Know Act.

### California Prop 65 Components

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

## Notification status

TSCA: All components of the product are listed in the TSCA-inventory.

DSL: This product contains one or several components listed in the Canadian NDSL.

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## SECTION 16. Other information

### Training advice

Provide adequate information, instruction and training for operators.

### Labeling

*Hazard pictograms*



*Signal Word*

Danger

*Hazard Statements*

H314 Causes severe skin burns and eye damage.

H332 Harmful if inhaled.

*Precautionary Statements*

Prevention

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response

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P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/ physician.

### Full text of H-Statements referred to under sections 2 and 3.

H314 Causes severe skin burns and eye damage.  
H318 Causes serious eye damage.  
H332 Harmful if inhaled.

### Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at [www.wikipedia.org](http://www.wikipedia.org).

Revision Date 01/27/2015

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The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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