



# MATERIAL SAFETY DATA SHEET

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

Date of issue: 02/04/2013

Version 1.0

## SECTION 1. Identification

### Product identifier

Product number	822133
Product name	Propionaldehyde for synthesis

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

Identified uses	Intermediate for use under strictly controlled conditions, 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   SDS Phone Support: +1-978-715-1335   General Inquiries: +1-978-715-4321   Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)  e-mail: mm_sds@merckgroup.com
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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

Flammable liquid, Category 2, H225  
Eye irritation, Category 2, H319  
Specific target organ systemic toxicity - single exposure, Category 3, H335  
Skin irritation, Category 2, H315  
For the full text of the H-Statements mentioned in this Section, see Section 16.

### GHS-Labeling

*Hazard pictograms*



*Signal Word*  
Danger

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## *Hazard Statements*

H225 Highly flammable liquid and vapor.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

## *Precautionary Statements*

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P233 Keep container tightly closed.

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

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.

## **OSHA Hazards**

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

## **Other hazards**

None known.

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## **SECTION 3. Composition/information on ingredients**

Formula	CH <sub>3</sub> CH <sub>2</sub> CHO	C <sub>3</sub> H <sub>6</sub> O (Hill)
CAS-No.	123-38-6	
Molar mass	58.08 g/mol	

## **Hazardous ingredients**

*Chemical Name ( Concentration)*

CAS-No.

*Propionaldehyde ( >= 90 % - <= 100 % )*  
123-38-6

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## **SECTION 4. First aid measures**

### **Description of first-aid measures**

#### *Inhalation*

After inhalation: fresh air.

#### *Skin contact*

After skin contact: wash off with plenty of water. Remove contaminated clothing.

#### *Eye contact*

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

#### *Ingestion*

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

Never give anything by mouth to an unconscious person.

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

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Irritation and corrosion, irritant effects, Cough, Shortness of breath, narcosis, Tiredness

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

No information available.

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## SECTION 5. Fire-fighting measures

### Extinguishing media

*Suitable extinguishing media*

Water, 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 at ambient temperatures.

Pay attention to flashback.

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

### 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*

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. Risk of explosion.

### 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 material (e.g. Chemisorb®). Dispose of properly. Clean up affected area.

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## SECTION 7. Handling and storage

### Precautions for safe handling

Observe label precautions.

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### *Advice on protection against fire and explosion*

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

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

Keep away from heat and sources of ignition. Keep container tightly closed in a dry and well-ventilated place.

Store below +15°C (+59°F).

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## **SECTION 8. Exposure controls/personal protection**

### **Exposure limit(s)**

#### *Ingredients*

Basis	Value	Threshold limits	Remarks
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#### *Propionaldehyde 123-38-6*

ACGIH	Time Weighted Average (TWA):	20 ppm	
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### **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*

Safety glasses

#### *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	colorless

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Odor	stinging
Odor Threshold	0.01 - 0.17 ppm
pH	No information available.
Melting point	-81 °C
Boiling point/boiling range	117 - 118 °F ( 47 - 48 °C) at 1,013 hPa
Flash point	-40 °F ( -40 °C) Method: DIN 51755 Part 1
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	2.3 %(V)
Upper explosion limit	21 %(V)
Vapor pressure	343 hPa at 68 °F ( 20 °C)
Relative vapor density	1.8
Relative density	0.81 g/cm <sup>3</sup> at 68 °F ( 20 °C)
Water solubility	200 g/l at 68 °F ( 20 °C)
Partition coefficient: n-octanol/water	log Pow: 0.59 (calculated) (IUCLID)  Bioaccumulation is not expected (log Pow <1).
Autoignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	0.375 mPa.s at 68 °F ( 20 °C)
Explosive properties	No information available.
Ignition temperature	347 °F ( 175 °C) Method: DIN 51794

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## SECTION 10. Stability and reactivity

### Reactivity

polymerizable  
Vapors may form explosive mixture with air.  
Formation of peroxides possible.

### Chemical stability

sensitive to moisture  
Sensitive to air.

### Possibility of hazardous reactions

Exothermic reaction with:  
alkali hydroxides, mineral acids, Oxidizing agents  
Risk of explosion with:

### Conditions to avoid

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

### Incompatible materials

no information available

### Hazardous decomposition products

no information available

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## SECTION 11. Toxicological information

### Information on toxicological effects

#### *Likely route of exposure*

Inhalation, Eye contact, Skin contact

#### *Acute oral toxicity*

LD50 rat: 1,410 mg/kg

Symptoms: Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

#### *Acute inhalation toxicity*

LC50 rat: 62.6 mg/l; 30 min

Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages: damage of respiratory tract

Irritating to respiratory system.

#### *Acute dermal toxicity*

LD50 rabbit: 2,460 mg/kg

#### *Skin irritation*

rabbit

Result: Irritations

Causes skin irritation.

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### *Eye irritation*

rabbit

Result: Severe irritations

Causes serious eye irritation.

### *Genotoxicity in vivo*

Mutagenicity (mammal cell test): micronucleus.

Result: negative

### *Genotoxicity in vitro*

Ames test

Result: negative

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

May cause respiratory irritation.

### *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.
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:

Tiredness, narcosis

Further data:

Handle in accordance with good industrial hygiene and safety practice.

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## **SECTION 12. Ecological information**

### **Ecotoxicity**

#### *Toxicity to fish*

LC50 Pimephales promelas (fathead minnow): 14 mg/l; 96 h

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### *Toxicity to daphnia and other aquatic invertebrates*

EC50 Daphnia: 88.7 mg/l; 48 h

### *Toxicity to algae*

IC50 Pseudokirchneriella subcapitata (green algae): 58 mg/l; 72 h

### *Toxicity to bacteria*

EC5 Pseudomonas putida: 124 mg/l; 14 h

## **Persistence and degradability**

### *Biodegradability*

91 - 97 %; 28 d

MITI test

Readily biodegradable.

### *Ratio BOD/ThBOD*

BOD5 38 %

### *Ratio COD/ThBOD*

97 %

## **Bioaccumulative potential**

### *Partition coefficient: n-octanol/water*

log Pow: 0.59

(calculated)

(IUCLID)

Bioaccumulation is not expected (log Pow <1).

## **Mobility in soil**

No information available.

## **Other adverse effects**

### *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 1275
Proper shipping name	PROPIONALDEHYDE
Class	3
Packing group	II
Environmentally hazardous	--

### **Air transport (IATA)**



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UN number UN 1275  
Proper shipping name PROPIONALDEHYDE  
Class 3  
Packing group II  
Environmentally hazardous --  
Special precautions for user no

## Sea transport (IMDG)

UN number UN 1275  
Proper shipping name PROPIONALDEHYDE  
Class 3  
Packing group II  
Environmentally hazardous --  
Special precautions for user yes  
EmS F-E S-D

## SECTION 15. Regulatory information

### United States of America

#### OSHA Hazards

Flammable Liquid  
Harmful if swallowed.  
Skin irritant  
Eye irritant  
Respiratory irritant

This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS, and may deviate from the GHS information on the label and in section 2.

#### SARA 311/312 Hazards

Fire Hazard  
Acute Health Hazard

#### SARA 313

The following components are subject to reporting levels established by SARA Title III, Section 313:

##### *Ingredients*

Propionaldehyde 123-38-6

#### SARA 302

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

#### 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.

#### Massachusetts Right To Know

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### *Ingredients*

Propionaldehyde

### **Pennsylvania Right To Know**

#### *Ingredients*

Propionaldehyde

### **New Jersey Right To Know**

#### *Ingredients*

Propionaldehyde

### **Notification status**

TSCA: On TSCA Inventory

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

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## **SECTION 16. Other information**

### **Training advice**

Provide adequate information, instruction and training for operators.

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

H225	Highly flammable liquid and vapor.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.

### **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).

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