



# MATERIAL SAFETY DATA SHEET

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

Date of issue: 03/11/2013

Version 1.0

## SECTION 1. Identification

### Product identifier

Product number	818715
Product name	Paraformaldehyde for synthesis

### 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   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

Acute toxicity, Category 4, Inhalation, H332  
Acute toxicity, Category 4, Oral, H302  
Carcinogenicity, Category 2, H351  
Skin irritation, Category 2, H315  
Eye irritation, Category 2, H319  
Skin sensitization, Category 1, H317  
Flammable solid, Category 2, H228  
Specific target organ systemic toxicity - single exposure, Category 3, Respiratory system, H335  
For the full text of the H-Statements mentioned in this Section, see Section 16.

### GHS-Labeling

#### Hazard pictograms



#### Signal Word

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## Warning

### *Hazard Statements*

H228 Flammable solid  
H302 + H332 Harmful if swallowed or if inhaled.  
H315 Causes skin irritation.  
H317 May cause an allergic skin reaction.  
H319 Causes serious eye irritation.  
H335 May cause respiratory irritation.  
H351 Suspected of causing cancer.

### *Precautionary Statements*

P280 Wear protective gloves.  
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.  
P308 + P313 IF exposed or concerned: Get medical advice/ attention.  
P370 + P378 In case of fire: Use sand for extinction.

## 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	$(\text{CH}_2\text{O})_n$	$(\text{CH}_2\text{O})_n$ (Hill)
CAS-No.	30525-89-4	

### Hazardous ingredients

*Chemical Name ( Concentration)*

CAS-No.

*paraformaldehyde (  $\geq 90\%$  -  $\leq 100\%$  )*  
30525-89-4

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## SECTION 4. First aid measures

### Description of first-aid measures

#### *Inhalation*

After inhalation: fresh air. Call in physician. If breathing stops: immediately apply artificial respiration, if necessary oxygen. Immediately call in physician.

#### *Skin contact*

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

#### *Eye contact*

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

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### *Ingestion*

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician. Subsequently administer: activated charcoal (20 - 40 g in 10% slurry).

Never give anything by mouth to an unconscious person.

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

Allergic reactions, irritant effects, Cough, Shortness of breath, Dermatitis, gastric pain, Nausea, Vomiting, collapse

### **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.

Risk of dust explosion.

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

Fire may cause evolution of:

formaldehyde vapors

### **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. Remove container from danger zone and cool with water.

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## **SECTION 6. Accidental release measures**

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

Advice for non-emergency personnel: Avoid substance contact. Avoid inhalation of dusts. Keep away from heat and sources of ignition. 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 dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

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## SECTION 7. Handling and storage

### Precautions for safe handling

Work under hood. Do not inhale substance/mixture.

Observe label precautions.

#### *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

#### *Requirements for storage areas and containers*

No metal containers.

Tightly closed. Keep away from heat and sources of ignition.

Store below +15°C (+59°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*

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 dusts 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

solid

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Color	white
Odor	characteristic odor
Odor Threshold	No information available.
pH	ca. 5.5 at 68 °F ( 20 °C) (saturated solution)
Melting point	100 - 130 °C
Boiling point	No information available.
Flash point	No information available.
Evaporation rate	No information available.
Flammability (solid, gas)	The substance or mixture is a flammable solid with the category 2.
Lower explosion limit	7 %(V)
Upper explosion limit	73 %(V)
Vapor pressure	1.93 hPa at 77 °F ( 25 °C)
Relative vapor density	No information available.
Relative density	1.4 g/cm <sup>3</sup> at 68 °F ( 20 °C)
Water solubility	at 68 °F ( 20 °C) slightly soluble
Partition coefficient: n-octanol/water	No information available.
Autoignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	No information available.
Explosive properties	Not classified as explosive.
Ignition temperature	572 °F ( 300 °C)

## SECTION 10. Stability and reactivity

### Reactivity

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Risk of dust explosion.

### Chemical stability

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

### Possibility of hazardous reactions

Risk of ignition or formation of inflammable gases or vapors with:

Generates dangerous gases or fumes in contact with:

bases, Amines, acids, Strong oxidizing agents

### Conditions to avoid

Heating (decomposition).

### Incompatible materials

Iron, Copper, Nickel, Zinc, various alloys

### 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, Ingestion

#### *Target Organs*

Eyes

Respiratory system

Lungs

Gastro-intestinal system

head

Respiratory organs

Skin

#### *Acute oral toxicity*

LD50 rat: 592 mg/kg (External MSDS)

absorption

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

#### *Acute inhalation toxicity*

LC50 rat: 1.07 mg/l; 4 h (External MSDS)

absorption

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

Irritating to respiratory system.

#### *Acute dermal toxicity*

LDLO rabbit: 10,000 mg/kg  
(RTECS)

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## *Skin irritation*

Dermatitis

Causes skin irritation.

## *Eye irritation*

rabbit

Result: Severe irritations

OECD Test Guideline 405

Causes serious eye irritation.

## *Sensitization*

Human experience

Result: positive

(External MSDS)

May cause an allergic skin reaction.

## *Genotoxicity in vitro*

Mutagenicity (mammal cell test):

Result: positive

(Lit.)

## *CMR effects*

Carcinogenicity:

Suspected of causing cancer.

## *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**

After absorption:

Systemic effects:

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collapse, drop in blood pressure

Further data:

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

## SECTION 12. Ecological information

### Ecotoxicity

*Toxicity to fish*

LC50 Oncorhynchus mykiss (rainbow trout): 46 - 78 mg/l; 96 h (ECOTOX Database)

*Toxicity to daphnia and other aquatic invertebrates*

EC50 Daphnia magna (Water flea): 42 mg/l; 24 h (External MSDS)

### Persistence and degradability

No information available.

### Bioaccumulative potential

No information available.

### Mobility in soil

No information available.

### Other adverse effects

*Additional ecological information*

Biological effects:

Reacts with water to form toxic decomposition products.

Further information on ecology

Discharge into the environment must be avoided.

## 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.

## SECTION 14. Transport information

### Land transport (DOT)

UN number	UN 2213
Proper shipping name	PARAFORMALDEHYDE
Class	4.1
Packing group	III
Environmentally hazardous	--

### Air transport (IATA)

UN number	UN 2213
Proper shipping name	PARAFORMALDEHYDE
Class	4.1
Packing group	III
Environmentally hazardous	--



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Special precautions for user	no
Sea transport (IMDG)	
UN number	UN 2213
Proper shipping name	PARAFORMALDEHYDE
Class	4.1
Packing group	III
Environmentally hazardous	--
Special precautions for user	yes
EmS	F-A S-G

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## SECTION 15. Regulatory information

### United States of America

#### OSHA Hazards

Flammable Solid  
Toxic by inhalation.  
Harmful if swallowed.  
Skin irritant  
Eye irritant  
Skin sensitizer  
Respiratory irritant  
Carcinogen  
Target organ effects

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  
Chronic Health Hazard

#### SARA 313

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.

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### **SARA 302**

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

### **Clean Water Act**

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

#### *Ingredients*

paraformaldehyde

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

#### *Ingredients*

paraformaldehyde

### **DEA List I**

Not listed

### **DEA List II**

Not listed

### **Massachusetts Right To Know**

#### *Ingredients*

paraformaldehyde

### **Pennsylvania Right To Know**

#### *Ingredients*

paraformaldehyde

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

#### *Ingredients*

paraformaldehyde

### **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.

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

H228	Flammable solid
H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H351	Suspected of causing cancer.

## 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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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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