



SIGMA-ALDRICH

Material Safety Data Sheet

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Version 1.60

Section 1 - Product and Company Information

Product Name	PARAFORMALDEHYDE		
Product Number	76240		
Brand	Fluka Chemical		
Company	Sigma-Aldrich		
Street Address	3050 Spruce Street		
City, State, Zip, Country	SAINT LOUIS, MO 63103 US		
Technical Phone:	314 771 5765		
Fax:	800 325 5052	Emergency Phone:	414 273 3850 Ext. 5996

Section 2 - Composition/Information on Ingredient

<u>Substance Name</u>	<u>CAS #</u>	<u>SARA 313</u>	<u>EC no</u>	<u>Annex I Index Number</u>
PARAFORMALDEHYDE	30525-89-4	Yes	200-001-8	

Formula (C1H2O)n
Synonyms Aldacide, Flo-Mor, Formagene, ParaformPolymerized formaldehyde

Section 3 - Hazards Identification

Emergency Overview
 Toxic (USA) Harmful (EU).
 Harmful by inhalation and if swallowed. Limited evidence of a carcinogenic effect. Risk of serious damage to eyes. May cause sensitization by skin contact.
 Contains formaldehyde. OSHA carcinogen. Flammable solid. Target organ(s): Eyes. Kidneys. Calif. Prop. 65 carcinogen.

HMIS Rating
 Health: 3* Flammability: 1 Reactivity: 0

NFPA Rating
 Health: 3 Flammability: 1 Reactivity: 0

*additional chronic hazards present.
 For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

Oral Exposure
 If swallowed, wash out mouth with water provided person is conscious. Call a physician immediately.

Inhalation Exposure
 If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

Dermal Exposure

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

Eye Exposure

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5 - Fire Fighting Measures

Flammable Hazards: Yes

Explosion Data Dust Potential

This material, like most materials in powder form, is capable of creating a dust explosion.

Flash Point: 158 °F 70 °C

Autoignition Temp: 370 °C **Flammability:** Yes

Extinguishing Media

Suitable
 Water spray, Carbon dioxide, dry chemical powder, or appropriate foam.

Firefighting

Protective Equipment
 Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Specific Hazard(s)
 Flammable solid. Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

Procedure to be Followed in Case of Leak or Spill
 Evacuate area. Shut off all sources of ignition. Use nonsparking tools.

Procedure(s) of Personal Precaution(s)
 Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

Methods for Cleaning Up
 Avoid raising dust. Sweep up, place in a bag and hold for waste disposal. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

Handling

User Exposure
 Avoid breathing dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

Storage
Suitable
Keep container closed. Keep away from heat, sparks, and open flame.

Special Requirements
Handle and store under inert gas. Moisture sensitive.

Section 8 - Exposure Controls / PPE

Engineering Controls
Safety shower and eye bath. Use nonsparking tools. Use only in a chemical fume hood.

Personal Protective Equipment
Respiratory
Government approved respirator.
Hand
Compatible chemical-resistant gloves.
Eye
Chemical safety goggles.

General Hygiene Measures
Wash thoroughly after handling.

Section 9 - Physical/Chemical Properties

Appearance	
Physical State	Solid
Odor	Pungent

Molecular Weight: N/A

pH	4 - 5.5
BP/BP Range	N/A
MP/MP Range	163 - 165 °C
Freezing Point	N/A
Vapor Pressure	N/A
Vapor Density	N/A
Saturated Vapor Conc.	N/A
SG/Density	0.88 g/cm ³
Bulk Density	500 - 800 kg/l
Odor Threshold	N/A
Volatile%	N/A
VOC Content	N/A
Water Content	N/A
Solvent Content	N/A
Evaporation Rate	N/A
Viscosity	N/A
Partition Coefficient	N/A
Decomposition Temp.	N/A
Flash Point °F	158 °F
Flash Point °C	70 °C
Explosion Limits	N/A

Flammability	N/A
Autoignition Temp	370 °C

Method: closed cup
Method: closed cup

Solubility
Solubility in Water: Insoluble.

N/A = not available

Section 10 - Stability and Reactivity

Stability
Stable
Unstable.
Conditions to Avoid
Moisture.
Materials to Avoid
Brass, Steel, Copper, Copper alloys, Acid anhydrides, Strong oxidizing agents, Strong reducing agents, Paraformaldehyde is incompatible with isocyanates, oxides, and bronze.

Hazardous Decomposition Products
Hazardous Decomposition Products
Carbon monoxide, Carbon dioxide, Formaldehyde.
Hazardous Decomposition Products Formed Upon Contact with Water
Decomposition by acids, alkalies, and hot water with liberation of formaldehyde.

Hazardous Polymerization
Hazardous Polymerization
Will not occur.

Section 11 - Toxicological Information

Route of Exposure
Skin Contact
Causes skin irritation.
Skin Absorption
May be harmful if absorbed through the skin.
Eye Contact
Causes severe eye irritation.
Inhalation
Harmful if inhaled. Material is irritating to mucous membranes and upper respiratory tract.
Ingestion
Harmful if swallowed. Ingestion can cause immediate burning pain in the mouth, throat, abdomen; severe swelling of the larynx and skeletal paralysis affecting the ability to breathe, circulatory shock and convulsions.

Sensitization
Skin
May cause allergic skin reaction.

Target Organ(s) or System(s)
Eyes. Kidneys. Liver. Heart.
Signs and Symptoms of Exposure
Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. Exposure can cause: Drying, cracking, or irritation of the skin. Pulmonary edema. Effects may be delayed. Pronounced irreversible ocular damage, eye burns.

RTECS Number: RV0540000

Toxicity Data
Oral - Rat: 592 mg/kg(LD50)
Oral - Rat: 800 mg/kg (LD50)
Inhalation - Rat: 1,070 mg/m³ (LC50)
Remarks: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Eye:Lacrimation.
Lungs, Thorax, or Respiration:Dyspnea.

Gastrointestinal: Changes in structure or function of salivary glands.

Skin - Rat: 10000 mg/kg (LDLO)

Irritation Data

Eyes - Rabbit:
Remarks: Severe irritation effect

Skin - Rabbit:
Remarks: No irritation effect

Skin - Rabbit: 500 mg 24H
Remarks: Severe irritation effect

Eyes - Rabbit: 100 mg
Remarks: Severe irritation effect

Chronic Exposure - Carcinogen

Result: This product is or contains a component that has been reported to be probably carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification. Formaldehyde, the decomposition product of paraformaldehyde, has been listed as a carcinogen by NTP and IARC.

OSHA Carcinogen List

Rating
Potential cancer hazard.

Chronic Exposure - Mutagen

<u>Species</u>	<u>Dose</u>
Rat	2200
	NG/PLATE

<u>Cell Type</u>	<u>Mutation test</u>
Embryo	Morphological transformation.

Section 12 - Ecological Information

Physical Properties Affecting Ecotoxicity

BOD: BOD after 5 Days:
37 %

Acute Ecotoxicity Tests

Test Type	Value:
LC50 Fish	
Time:	> 10 mg/l
96.0 h	

Test Type	Value:
EC50 Daphnia	
Species	
Daphnia magna	
Time:	42 mg/l
24.0 h	

Section 13 - Disposal Considerations

Appropriate Method of Disposal of Substance or Preparation

Contact a licensed professional waste disposal service to dispose of this material.
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable.
Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT

Proper Shipping Name: Paraformaldehyde
UN#: 2213
Class: 4.1
Packing Group: Packing Group III

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Hazard Label: Flammable solid
PIH: Not PIH

IATA

Proper Shipping Name: Paraformaldehyde
IATA UN Number: 2213
Hazard Class: 4.1
Packing Group: III

Section 15 - Regulatory Information

EU Additional Classification

Symbol of Danger: Xn
Indication of Danger
Harmful.

Risk Statements R: 20/22 37/38 40 41 43

Harmful by inhalation and if swallowed. Irritating to respiratory system and skin. Limited evidence of a carcinogenic effect. Risk of serious damage to eyes. May cause sensitization by skin contact.

Safety Statements S: 26 36/37/39 45

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

US Classification and Label Text

Indication of Danger
Toxic (USA) Harmful (EU).

Risk Statements

Harmful by inhalation and if swallowed. Limited evidence of a carcinogenic effect. Risk of serious damage to eyes. May cause sensitization by skin contact.

Safety Statements

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

US Statements

Contains formaldehyde. OSHA carcinogen. Flammable solid. Target organ(s): Eyes. Kidneys. Calif. Prop. 65 carcinogen.

United States Regulatory Information

SARA Listed: Yes

Notes: This product is or contains a component that is subject to SARA313 reporting requirements.

OSHA Remarks

OSHA-regulated carcinogen. See CFR title 29 part 1910.1048

TSCA Inventory Item: Yes

United States - State Regulatory Information

California Prop - 65

This product is or contains chemical(s) known to the state of California to cause cancer.

Canada Regulatory Information

WHMIS Classification

This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: Yes

NDSL: No

Section 16 - Other Information

Disclaimer

For R&D use only. Not for drug, household or other uses.

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Sigma-Aldrich Corporation
www.sigma-aldrich.com

Warranty

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2005 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

