

**Paraformaldehyde 91-93%**

Version 1.2      Revision Date: 12/21/2020      SDS Number: 000000033679      Date of last issue: 03/09/2020  
Date of first issue: 09/10/2019

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**SECTION 1. IDENTIFICATION**

Product name : Paraformaldehyde 91-93%

Product code : 00000000051002325

**Manufacturer or supplier's details**

Company name of supplier : Celanese Ltd. Irving Texas

Address : 222 West Las Colinas Boulevard Suite 900N  
Irving TX TX 75039

Telephone : '+1 972-443-4000

E-mail address of person responsible for the SDS : HazCom@celanese.com

Emergency telephone : DOMESTIC NORTH AMERICA: 800-424-9300  
INTERNATIONAL, CALL +1 703-527-3887 (collect calls accepted)

**Recommended use of the chemical and restrictions on use**

Recommended use : Chemical intermediate

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**SECTION 2. HAZARDS IDENTIFICATION****GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)**

Acute toxicity (Oral) : Category 4

Acute toxicity (Inhalation) : Category 4

Skin corrosion : Category 1C

Serious eye damage : Category 1

Skin sensitization : Category 1

Germ cell mutagenicity : Category 2

Carcinogenicity : Category 1B

Specific target organ toxicity - single exposure : Category 3 (Respiratory system)

Short-term (acute) aquatic hazard : Category 3

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Celanese Paraformaldehyde 91-93% have been tested in accordance with U.N. Test N1 and determined not to be a flammable solid.

**GHS label elements**

Hazard pictograms

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Signal Word

: Danger

Hazard Statements

: H302 + H332 Harmful if swallowed or if inhaled.  
H314 Causes severe skin burns and eye damage.  
H318 Causes serious eye damage.  
H317 May cause an allergic skin reaction.  
H335 May cause respiratory irritation.  
H341 Suspected of causing genetic defects.  
H350 May cause cancer.  
H402 Harmful to aquatic life.  
May form combustible dust concentrations in air.

Precautionary Statements

: **Prevention:**

P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P260 Do not breathe dusts or mists.  
P264 Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P271 Use only outdoors or in a well-ventilated area.  
P272 Contaminated work clothing should not be allowed out of the workplace.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

**Response:**

P301 + P330 + P331 + P310 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/ physician.  
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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P310 Immediately call a POISON CENTER or doctor/ physician.  
 P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.  
 P363 Wash contaminated clothing before reuse.  
 P308 + P313 IF exposed or concerned: Get medical advice/ attention.

**Storage:**

P405 Store locked up.  
 P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

**Disposal:**

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

**Other hazards**

None known.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**
**Components**

Chemical name	CAS-No.	Concentration (% w/w)
Paraformaldehyde	30525-89-4	>= 91 - <= 93
formaldehyde	50-00-0	<= 0.1

**SECTION 4. FIRST AID MEASURES**

- General advice : 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 : If on skin, rinse well with water.  
 If symptoms persist, call a physician.
- In case of eye contact : Remove contact lenses.  
 Protect unharmed eye.  
 If eye irritation persists, consult a specialist.
- If swallowed : Keep respiratory tract clear.  
 Do not give milk or alcoholic beverages.  
 Never give anything by mouth to an unconscious person.  
 If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : Harmful if swallowed or if inhaled.  
 May cause an allergic skin reaction.  
 Causes serious eye damage.  
 May cause respiratory irritation.  
 Suspected of causing genetic defects.  
 May cause cancer.  
 Causes severe burns.

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**SECTION 5. FIRE-FIGHTING MEASURES**

- Suitable extinguishing media : Water  
Foam  
Dry chemical  
Carbon dioxide (CO<sub>2</sub>)
- Specific hazards during fire fighting : Do not use a solid water stream as it may scatter and spread fire.  
Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.
- Hazardous combustion products : Carbon oxides  
Formaldehyde
- Further information : Standard procedure for chemical fires.  
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.  
Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
- Special protective equipment for fire-fighters : Wear self-contained breathing apparatus for firefighting if necessary.
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**SECTION 6. ACCIDENTAL RELEASE MEASURES**

- Personal precautions, protective equipment and emergency procedures : Avoid contact with the skin and the eyes.  
Avoid dust formation.  
Avoid breathing dust.  
Ensure adequate ventilation.  
Mark the contaminated area with signs and prevent access to unauthorized personnel.
- Environmental precautions : Do not flush into surface water or sanitary sewer system.  
Do not let product enter drains.
- Methods and materials for containment and cleaning up : Pick up and arrange disposal without creating dust.  
Sweep up and shovel.  
Do not create a powder cloud by using a brush or compressed air.  
Non-sparking tools should be used.  
Keep in suitable, closed containers for disposal.
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**SECTION 7. HANDLING AND STORAGE**

- Advice on protection against fire and explosion : Provide appropriate exhaust ventilation at places where dust is formed.  
During processing, dust may form explosive mixture in air.  
Take measures to prevent the build up of electrostatic charge.  
Do not empty bag over drums with ignitable gas mixtures.  
Use explosion-proof equipment.

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- Advice on safe handling : For personal protection see section 8.  
Smoking, eating and drinking should be prohibited in the application area.  
Minimize dust generation and accumulation.  
Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations.  
Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres.  
Ensure all equipment is electrically grounded before beginning transfer operations.
- Paraformaldehyde decomposes to formaldehyde which can build up in a shipping container depending on time and temperature during transit. The level of formaldehyde exposure may be instantaneously high when the shipping container is opened.  
Provide adequate ventilation.
- Conditions for safe storage : Keep container closed when not in use.  
Keep in a dry, cool and well-ventilated place.  
Store locked up.  
Electrical installations / working materials must comply with the technological safety standards.
- Materials to avoid : Acids  
Bases  
Amines  
Oxidizing agents  
Reducing agents
- Further information on storage stability : No decomposition if stored and applied as directed.

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

Contains no substances with occupational exposure limit values.  
Formaldehyde is slowly emitted from Paraformaldehyde. The release rate and air concentration are dependent on storage conditions including temperature and ventilation. This exposure limit information on formaldehyde is provided for your reference.

- Engineering measures** : Use with local exhaust ventilation.  
Use explosion-proof equipment.

**Personal protective equipment**

- Respiratory protection : In the case of dust or aerosol formation use respirator with an approved filter.  
Use NIOSH approved respiratory protection.

**Hand protection**

- Material : butyl-rubber  
Break through time : 480 min  
Glove thickness : 0.3 mm  
Protective index : Class 6

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Eye protection : Safety goggles

Skin and body protection : Protective suit

Hygiene measures : General industrial hygiene practice.

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**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance : solid prills

Color : white

Odor : pungent

Odor Threshold : 1 ppm

pH : 4 - 5

Melting point/range : 248 - 338 °F / 120 - 170 °C

Flash point : Not applicable

Bulk density : 890 kg/m<sup>3</sup>

Solubility(ies)  
Water solubility : hydrolyzes

Dust deflagration index (Kst) : < 200 m.b\_/s

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**SECTION 10. STABILITY AND REACTIVITY**

Reactivity : Stable under recommended storage conditions.

Chemical stability : Stable under recommended storage conditions.

Possibility of hazardous reactions : Stable under recommended storage conditions.

Conditions to avoid : Keep away from fire, sparks and heated surfaces.  
Take measures to prevent the build up of electrostatic charge.

Incompatible materials : Acids  
Bases  
Amines  
Oxidizing agents  
Reducing agents

Hazardous decomposition products : Formaldehyde

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**SECTION 11. TOXICOLOGICAL INFORMATION****Acute toxicity****Components:****Paraformaldehyde:**

Acute oral toxicity : LD50 (Rat): 680 mg/kg  
Acute inhalation toxicity : LC50 (Rat): 1.07 mg/l  
Exposure time: 4 h  
Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg

**formaldehyde:**

Acute oral toxicity : LD50 (Rat, male): 460 mg/kg  
Method: OECD Test Guideline 401  
Acute inhalation toxicity : LC50 (Rat): 1 mg/l  
Exposure time: 0.5 h  
Method: OECD Test Guideline 403  
Acute dermal toxicity : 270 mg/kg

**Skin corrosion/irritation****Components:****Paraformaldehyde:**

Species : Rabbit  
Result : Severe skin irritation

**formaldehyde:**

Species : Rabbit  
Method : OECD Test Guideline 404  
Result : Corrosive

**Serious eye damage/eye irritation****Components:****Paraformaldehyde:**

Species : Rabbit  
Result : Severe eye irritation

**formaldehyde:**

Species : Rabbit  
Result : Corrosive  
Method : OECD Test Guideline 405

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**Respiratory or skin sensitization****Components:****formaldehyde:**

Species : Mouse  
Method : OECD Test Guideline 429  
Result : May cause sensitization by skin contact.

**Germ cell mutagenicity****Components:****Paraformaldehyde:**

Genotoxicity in vitro : Test Type: Chromosome aberration test in vitro  
Test system: Chinese hamster cells  
Metabolic activation: without metabolic activation  
Method: OECD Test Guideline 473  
Result: negative

Test Type: sister chromatid exchange assay  
Test system: Chinese hamster ovary cells  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 479  
Result: positive

Test Type: gene mutation test  
Test system: mouse lymphoma cells  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 476  
Result: positive

**formaldehyde:**

Genotoxicity in vivo : Species: Rat  
Method: Mutagenicity (micronucleus test)  
Result: negative

**Reproductive toxicity****Components:****formaldehyde:**

Effects on fetal development : Species: Mouse  
Application Route: Oral  
Result: no adverse developmental effects

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**SECTION 12. ECOLOGICAL INFORMATION****Ecotoxicity****Components:****Paraformaldehyde:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 60 mg/l



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Exposure time: 96 h

**formaldehyde:**

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 6.7 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia pulex (Water flea)): 5,800 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : (Desmodesmus subspicatus (green algae)): Method: OECD Test Guideline 201

EC50 (Scenedesmus quadricauda (Green algae)): 4.89 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201

**Persistence and degradability****Components:****formaldehyde:**

Biodegradability : Inoculum: Fresh water  
Result: Readily biodegradable.  
Method: OECD Test Guideline 301C

**Bioaccumulative potential****Components:****formaldehyde:**

Bioaccumulation : Bioconcentration factor (BCF): 0.4  
Remarks: Does not significantly accumulate in organisms.

**Mobility in soil**

No data available

**Other adverse effects****Product:**

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82  
Protection of Stratospheric Ozone - CAA Section 602 Class I  
Substances  
Remarks: This product neither contains, nor was  
manufactured with a Class I or Class II ODS as defined by the  
U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A +  
B).

Additional ecological information : No data available

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**Components:****formaldehyde:**

Results of PBT and vPvB assessment : The substance does not meet the criteria for PBT / vPvB according to REACH, Annex XIII

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**SECTION 13. DISPOSAL CONSIDERATIONS****Disposal methods**

Waste from residues : Dispose of as hazardous waste in compliance with local and national regulations.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.

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**SECTION 14. TRANSPORT INFORMATION****International Regulations****UNRTDG**

Not regulated as a dangerous good

**IATA-DGR**

Not regulated as a dangerous good

**IMDG-Code**

Not regulated as a dangerous good

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

Not applicable for product as supplied.

**Domestic regulation****49 CFR**

UN/ID/NA number	:	UN ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Proper shipping name	:	Environmentally hazardous substance, solid, n.o.s. (Paraformaldehyde)
Class	:	9
Packing group	:	III
Labels	:	CLASS 9
ERG Code	:	171
Marine pollutant	:	no
Remarks	:	Celanese Paraformaldehyde 91-93% have been tested in accordance with U.N. Test N1 and determined not to be a flammable solid.

**Special precautions for user**

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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**SECTION 15. REGULATORY INFORMATION****CERCLA Reportable Quantity**

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Paraformaldehyde	30525-89-4	1000	1075

**SARA 304 Extremely Hazardous Substances Reportable Quantity**

This material does not contain any components with a section 304 EHS RQ.

**SARA 302 Extremely Hazardous Substances Threshold Planning Quantity**

This material does not contain any components with a section 302 EHS TPQ.

**SARA 311/312 Hazards**      :    Acute Health Hazard  
Chronic Health Hazard

**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.

**Clean Air Act**

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM Intermediate or Final VOC's (40 CFR 60.489).

**Clean Water Act**

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

Paraformaldehyde	30525-89-4	>= 90 - <= 100 %
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This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

**SECTION 16. OTHER INFORMATION****Further information**

# SAFETY DATA SHEET

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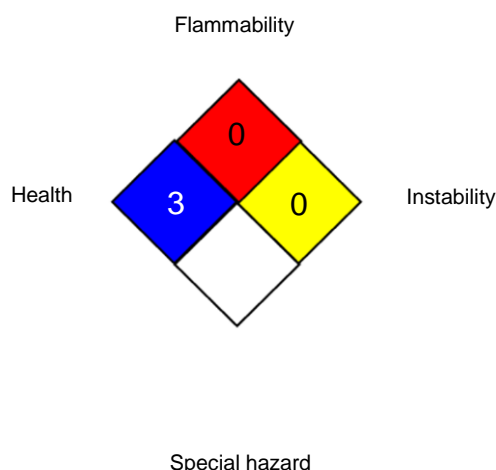
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### NFPA 704:



### HMIS® IV:

HEALTH	*	3
FLAMMABILITY		0
PHYSICAL HAZARD		0

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "\*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

### Full text of other abbreviations

AICS - Australian Inventory of Chemical Substances; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); EC<sub>x</sub> - Concentration associated with x% response; EHS - Extremely Hazardous Substance; EL<sub>x</sub> - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErC<sub>x</sub> - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC<sub>50</sub> - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC<sub>50</sub> - Lethal Concentration to 50 % of a test population; LD<sub>50</sub> - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations;

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UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

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The information provided in this 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.

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