

Paraformaldehyde 91-93%

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SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

Trade name	:	Paraformaldehyde 91-93%
Product code	:	00000000050000767
CAS-No.	:	30525-89-4

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

Use of the Substance/Mixture	:	Chemical intermediate
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1.3 Details of the supplier of the safety data sheet

Company	:	Celanese Sales Germany GmbH Am Unisyspark 1 65843 Sulzbach (Taunus), Germany
E-mail address of person responsible for the SDS	:	HazCom@celanese.com

1.4 Emergency telephone number

CHEMTREC: +1 703 527 3887 (Collect calls accepted)

SECTION 2: Hazards identification**2.1 Classification of the substance or mixture****Classification (REGULATION (EC) No 1272/2008)**

Acute toxicity , Category 4	H302: Harmful if swallowed.
Acute toxicity , Category 4	H332: Harmful if inhaled.
Skin corrosion , Category 1C	H314: Causes severe skin burns and eye damage.
Serious eye damage , Category 1	H318: Causes serious eye damage.
Skin sensitisation , Category 1	H317: May cause an allergic skin reaction.
Carcinogenicity , Category 1B	H350: May cause cancer.
Germ cell mutagenicity , Category 2	H341: Suspected of causing genetic defects.
Specific target organ toxicity - single exposure , Category 3 , Respiratory system	H335: May cause respiratory irritation.
Acute aquatic toxicity , Category 3	H402: Harmful to aquatic life.

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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.

2.2 Label elements
Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word : Danger

Hazard statements :

- H302 Harmful if swallowed.
- H313 May be harmful in contact with skin.
- H332 Harmful if inhaled.
- H314 Causes severe skin burns and eye damage.
- H318 Causes serious eye damage.
- H317 May cause an allergic skin reaction.
- H350 May cause cancer.
- H341 Suspected of causing genetic defects.
- H335 May cause respiratory irritation.
- H402 Harmful to aquatic life.

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 dust or mist.
- P271 Use only outdoors or in a well-ventilated area.
- P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
- P270 Do not eat, drink or smoke when using this product.
- P264 Wash skin thoroughly after handling.
- P272 Contaminated work clothing should not be allowed out of the workplace.
- P273 Avoid release to the environment.

Response:

- P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P303 + P361 + P353 IF ON SKIN (or hair): 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.
- 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/

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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.

Hazardous components which must be listed on the label:

Paraformaldehyde

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients
3.2 Mixtures
Hazardous components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Paraformaldehyde	30525-89-4	Acute Tox.4; H302 Skin Corr.1C; H314 Skin Sens.1; H317 Eye Dam.1; H318 Acute Tox.4; H332	>= 91 - <= 93
formaldehyde	50-00-0 200-001-8 605-001-00-5	Acute Tox.3; H301 Acute Tox.3; H311 Skin Corr.1B; H314 Skin Sens.1; H317 Acute Tox.3; H331 Muta.2; H341 Carc.1B; H350	<= 0,1

For explanation of abbreviations see section 16.

SECTION 4: First aid measures
4.1 Description of 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.

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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.

4.2 Most important symptoms and effects, both acute and delayed

Risks : Harmful if swallowed or if inhaled
May cause an allergic skin reaction.
Causes serious eye damage.
Causes severe burns.

4.3 Indication of any immediate medical attention and special treatment needed

SECTION 5: Firefighting measures**5.1 Extinguishing media**

Suitable extinguishing media : Water
Foam
Dry chemical
Carbon dioxide (CO₂)

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : 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

5.3 Advice for firefighters

Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

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.

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

Personal precautions : Avoid contact with the skin and the eyes.
Avoid dust formation.
Avoid breathing dust.
Ensure adequate ventilation.

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Mark the contaminated area with signs and prevent access to unauthorized personnel.

6.2 Environmental precautions

Environmental precautions : Do not flush into surface water or sanitary sewer system.
Do not let product enter drains.

6.3 Methods and material for containment and cleaning up

Methods for 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.

6.4 Reference to other sections

SECTION 7: Handling and storage**7.1 Precautions for safe handling**

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.

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.

Hygiene measures : General industrial hygiene practice.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : 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.

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Advice on common storage : Acids
Bases
Amines
Oxidizing agents
Reducing agents

Other data : No decomposition if stored and applied as directed.

7.3 Specific end use(s)

SECTION 8: Exposure controls/personal protection**8.1 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.

8.2 Exposure controls**Engineering measures**

Use with local exhaust ventilation.

Use explosion-proof equipment.

Personal protective equipment

Eye protection : Safety goggles

Hand protection

Material : butyl-rubber

Break through time : 480 min

Glove length : 0,3 mm

Protective index : Class 6

Skin and body protection : Protective suit

SECTION 9: Physical and chemical properties**9.1 Information on basic physical and chemical properties**

Appearance : solid prills

Colour : white

Odour : pungent

Odour Threshold : 1 ppm

pH : 4 - 5

Melting point/range : 120 - 170 °C

Flash point : Not applicable

Bulk density : 890 kg/m³

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Solubility(ies)
Water solubility : hydrolyses

9.2 Other information

Dust deflagration index (Kst) : < 200 m.b_/s

SECTION 10: Stability and reactivity**10.1 Reactivity**

Stable under recommended storage conditions.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : Stable under recommended storage conditions.

10.4 Conditions to avoid

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

10.5 Incompatible materials

Materials to avoid : Acids
Bases
Amines
Oxidizing agents
Reducing agents

10.6 Hazardous decomposition products

Hazardous decomposition products : Formaldehyde

SECTION 11: Toxicological information**11.1 Information on toxicological effects****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

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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
Method: OECD Test Guideline 405
Result: Corrosive

Respiratory or skin sensitisation**Components:****formaldehyde:**

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

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

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

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

: Test Type: gene mutation test
Species: 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 foetal development : Species: Mouse
Application Route: Oral
Result: no adverse developmental effects

SECTION 12: Ecological information**12.1 Toxicity****Components:****Paraformaldehyde:**

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

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

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

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

Bioaccumulation : Bioconcentration factor (BCF): 0,4
Remarks: Does not significantly accumulate in organisms.

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment**Components:****formaldehyde:**

Assessment : The substance does not meet the criteria for PBT / vPvB according to REACH, Annex XIII.

12.6 Other adverse effects**Product:**

Additional ecological information : No data available

SECTION 13: Disposal considerations**13.1 Waste treatment methods**

Product : 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.

SECTION 14: Transport information**14.1 UN number**

IMDG : Not regulated as a dangerous good

IATA : Not regulated as a dangerous good

14.2 UN proper shipping name

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IMDG : Not regulated as a dangerous good

IATA : Not regulated as a dangerous good

14.3 Transport hazard class(es)

IMDG : Not regulated as a dangerous good

IATA : Not regulated as a dangerous good

14.4 Packing group

IMDG : Not regulated as a dangerous good

IATA (Cargo) : Not regulated as a dangerous good

IATA (Passenger) : Not regulated as a dangerous good

14.5 Environmental hazards

IMDG : Not regulated as a dangerous good

14.6 Special precautions for user

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

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Remarks : Not applicable for product as supplied.

SECTION 15: Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****15.2 Chemical safety assessment**

Chemical Safety Assessment (CSA) is not required

SECTION 16: Other information**Full text of H-Statements**

H301 : Toxic if swallowed.
H302 : Harmful if swallowed.
H311 : Toxic in contact with skin.
H314 : Causes severe skin burns and eye damage.
H317 : May cause an allergic skin reaction.
H318 : Causes serious eye damage.
H331 : Toxic if inhaled.
H332 : Harmful if inhaled.
H341 : Suspected of causing genetic defects.
H350 : May cause cancer.

Full text of other abbreviations

Acute Tox. : Acute toxicity
Carc. : Carcinogenicity
Eye Dam. : Serious eye damage
Muta. : Germ cell mutagenicity

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Skin Corr. : Skin corrosion
 Skin Sens. : Skin sensitisation

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; 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; IC50 - 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; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; 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; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Classification of the mixture:

Acute Tox. 4	H302
Acute Tox. 4	H332
Skin Corr. 1C	H314
Eye Dam. 1	H318
Skin Sens. 1	H317
Carc. 1B	H350
Muta. 2	H341
STOT SE 3	H335
Aquatic Acute 3	H402

Classification procedure:

Calculation method
Calculation method
Calculation method
Calculation method
Calculation method
Calculation method
Calculation method
Calculation method
Calculation method
Calculation method

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

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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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