

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Revision Date 17.07.2017

Version 18.0

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

Catalogue No. 818715

Product name Paraformaldehyde for synthesis

REACH Registration Number A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

CAS-No. 30525-89-4

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

Identified uses Chemical for synthesis
For additional information on uses please refer to the Merck Chemicals portal (www.merckgroup.com).

1.3 Details of the supplier of the safety data sheet

Company Merck KGaA * 64271 Darmstadt * Germany * Phone:+49 6151 72-0

Responsible Department LS-QHC * e-mail: prodsafe@merckgroup.com

1.4 Emergency telephone number Please contact the regional company representation in your country.

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

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Acute toxicity, Category 4, Oral, H302
Acute toxicity, Category 4, Inhalation, H332
Skin irritation, Category 2, H315
Serious eye damage, Category 1, H318
Skin sensitisation, Category 1, H317
Germ cell mutagenicity, Category 2, H341
Carcinogenicity, Category 1B, H350
Specific target organ toxicity - single exposure, Category 3, Respiratory system, H335
For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms



Signal word

Danger

Hazard statements

H350 May cause cancer.
H302 + H332 Harmful if swallowed or if inhaled
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.
H341 Suspected of causing genetic defects.

Precautionary statements

Prevention
P201 Obtain special instructions before use.
P280 Wear protective gloves.
P280 Wear eye protection.

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Response

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

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Restricted to professional users.

Reduced labelling (≤ 125 ml)

Hazard pictograms



Signal word

Danger

Hazard statements

H350 May cause cancer.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H341 Suspected of causing genetic defects.

Precautionary statements

P201 Obtain special instructions before use.

P280 Wear protective gloves.

P280 Wear eye protection.

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

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Contains: paraformaldehyde

CAS-No. 30525-89-4

2.3 Other hazards

None known.

SECTION 3. Composition/information on ingredients

3.1 Substance

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Formula $(\text{CH}_2\text{O})_n$ $(\text{CH}_2\text{O})_n$ (Hill)

Hazardous components (REGULATION (EC) No 1272/2008)

Chemical name (Concentration)

CAS-No. Registration number Classification

paraformaldehyde ($\leq 100\%$)

30525-89-4 *)

Acute toxicity, Category 4, H302

Acute toxicity, Category 4, H332

Skin irritation, Category 2, H315

Serious eye damage, Category 1, H318

Skin sensitisation, Category 1, H317

Germ cell mutagenicity, Category 2, H341

Carcinogenicity, Category 1B, H350

Specific target organ toxicity - single exposure, Category 3, H335

*) A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

For the full text of the H-Statements mentioned in this Section, see Section 16.

3.2 Mixture

Not applicable

SECTION 4. First aid measures

4.1 Description of first aid measures

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

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower. Consult a physician.

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

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

4.2 Most important symptoms and effects, both acute and delayed

Irritation and corrosion, Allergic reactions, Cough, Shortness of breath, Dermatitis, gastric pain, Nausea, Vomiting, collapse
Risk of serious damage to eyes.

4.3 Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water, Foam, Carbon dioxide (CO₂), Dry powder

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Combustible.

Risk of dust explosion.

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

Fire may cause evolution of:

formaldehyde vapours

5.3 Advice for firefighters

Special protective equipment for firefighters

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/vapours/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

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid generation and inhalation of dusts in all circumstances. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders:

Protective equipment see section 8.

6.2 Environmental precautions

Do not let product enter drains.

6.3 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 carefully. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4 Reference to other sections

Indications about waste treatment see section 13.

SECTION 7. Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

Observe label precautions.

Work under hood. Do not inhale substance/mixture.

Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers

No metal containers.

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Storage conditions

Tightly closed. Keep away from heat and sources of ignition. Keep locked up or in an area accessible only to qualified or authorised persons.

Recommended storage temperature see product label.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8. Exposure controls/personal protection

8.1 Control parameters

8.2 Exposure controls

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

Individual protection measures

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

Eye/face protection

Tightly fitting safety goggles

Hand protection

full contact:

Glove material:	Nitrile rubber
Glove thickness:	0,11 mm
Break through time:	> 480 min

splash contact:

Glove material:	Nitrile rubber
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Glove thickness: 0,11 mm
Break through time: > 480 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 741 Dermatril® L (full contact), KCL 741 Dermatril® L (splash contact).

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

This recommendation applies only to the product stated in the safety data sheet<(>,<)> supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Other protective equipment

protective clothing

Respiratory protection

required when dusts are generated.

Recommended Filter type: Filter P 3 (acc. to DIN 3181) for solid and liquid particles of toxic and very toxic substances

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Environmental exposure controls

Do not let product enter drains.

SECTION 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form	solid
Colour	white
Odour	characteristic odour

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Odour Threshold No information available.

pH ca. 5,5
at 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) No information available.

Lower explosion limit 7 %(V)

Upper explosion limit 73 %(V)

Vapour pressure 1,93 hPa
at 25 °C

Relative vapour density No information available.

Density 1,4 g/cm³
at 20 °C

Relative density No information available.

Water solubility at 20 °C
slightly soluble

Partition coefficient: n-
octanol/water No information available.

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Auto-ignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	No information available.
Explosive properties	Not classified as explosive.
Oxidizing properties	none

9.2 Other data

Ignition temperature	300 °C
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SECTION 10. Stability and reactivity

10.1 Reactivity

Risk of dust explosion.

10.2 Chemical stability

heat-sensitive

10.3 Possibility of hazardous reactions

Violent reactions possible with:

bases, Amines, acids, Strong oxidizing agents

Oxygen, (as liquefied gas)

10.4 Conditions to avoid

Heating (decomposition).

10.5 Incompatible materials

Iron, Copper, Nickel, Zinc, various alloys

10.6 Hazardous decomposition products

in the event of fire: See section 5.

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SECTION 11. Toxicological information

11.1 Information on toxicological effects

Acute oral toxicity

LD50 Rat: 592 mg/kg

(External MSDS)

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 ; dust/mist

(External MSDS)

Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of respiratory tract, Lung oedema
Irritating to respiratory system.

Acute dermal toxicity

LDLO Rabbit: 10.000 mg/kg

(RTECS)

Skin irritation

Causes skin irritation.

Dermatitis

Eye irritation

Causes serious eye damage.

Sensitisation

Human experience

Result: positive

(External MSDS)

May cause an allergic skin reaction.

Germ cell mutagenicity

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Genotoxicity in vitro

Mutagenicity (mammal cell test):

Result: positive

(Lit.)

Carcinogenicity

This information is not available.

Reproductive toxicity

This information is not available.

Teratogenicity

This information is not available.

CMR effects

Carcinogenicity:

May cause cancer.

Mutagenicity:

Suspected of causing genetic defects.

Specific target organ toxicity - single exposure

May cause respiratory irritation.

Target Organs: Respiratory system

Specific target organ toxicity - repeated exposure

This information is not available.

Aspiration hazard

This information is not available.

11.2 Further information

After absorption:

Systemic effects:

collapse, drop in blood pressure

Other dangerous properties can not be excluded.

This substance should be handled with particular care.

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SECTION 12. Ecological information

12.1 Toxicity

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)

12.2 Persistence and degradability

No information available.

12.3 Bioaccumulative potential

No information available.

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

12.6 Other adverse effects

Additional ecological information

Reacts with water to form toxic decomposition products.

Discharge into the environment must be avoided.

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SECTION 13. Disposal considerations

Waste treatment methods

See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

SECTION 14. Transport information

Land transport (ADR/RID)

14.1 UN number	UN 2213
14.2 Proper shipping name	PARAFORMALDEHYDE
14.3 Class	4.1
14.4 Packing group	III
14.5 Environmentally hazardous	--
14.6 Special precautions for user	yes
Tunnel restriction code	E

Inland waterway transport (ADN)

Not relevant

Air transport (IATA)

14.1 UN number	UN 2213
14.2 Proper shipping name	PARAFORMALDEHYDE
14.3 Class	4.1
14.4 Packing group	III
14.5 Environmentally hazardous	--
14.6 Special precautions for user	no

Sea transport (IMDG)

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Product name Paraformaldehyde for synthesis

14.1 UN number UN 2213
14.2 Proper shipping name PARAFORMALDEHYDE
14.3 Class 4.1
14.4 Packing group III
14.5 Environmentally hazardous --
14.6 Special precautions for user yes
EmS F-A S-G

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not relevant

SECTION 15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulations

Major Accident Hazard SEVESO III
Legislation Not applicable

Occupational restrictions Take note of Dir 94/33/EC on the protection of young people at work. Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer not regulated

Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC not regulated

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Substances of very high concern (SVHC)

This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of $\geq 0.1\%$ (w/w).

National legislation

Storage class 4.1B

15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out.

SECTION 16. Other information

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

H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H341	Suspected of causing genetic defects.
H350	May cause cancer.

Training advice

Provide adequate information, instruction and training for operators.

Labelling

Hazard pictograms



Signal word

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Danger

Hazard statements

H302 + H332 Harmful if swallowed or if inhaled

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H335 May cause respiratory irritation.

H341 Suspected of causing genetic defects.

H350 May cause cancer.

Precautionary statements

Prevention

P201 Obtain special instructions before use.

P280 Wear eye protection.

Response

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

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.

Further information

Restricted to professional users.

Contains: paraformaldehyde

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.

Regional representation

This information is given on the authorised Safety Data Sheet for your country.

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The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.