

Item cancelled 2008



Safety Data Sheet

According to EC Directive 91/155/EEC

Date of issue:
Supersedes edition of

26.06.2006
16.05.2004

1. Identification of the substance/preparation and of the company/undertaking

Identification of the product

Catalogue No.: 104004
Product name: Paraformaldehyde tablets 1 g

Use of the substance/preparation

Reagent for analysis

Company/undertaking identification

Company: Merck KGaA * 64271 Darmstadt * Germany * Phone: +49 6151 72-0
Emergency telephone No.: Please contact the regional Merck representation
in your country.

2. Composition/information on ingredients

CAS-No.: 30525-89-4
Formula Hill: $(\text{CH}_2\text{O})_n$ EC-No.: 200-001-8

3. Hazards identification

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

4. First aid measures

After inhalation: fresh air.
If breathing stops: mouth-to-mouth respiration or mechanical ventilation. Oxygen mask if necessary! Immediately call in physician.
After skin contact: wash off with plenty of water. Remove contaminated clothing.
After eye contact: rinse out with plenty of water with the eyelid held wide open. Call in ophthalmologist.
After swallowing: make victim drink plenty of water. Subsequently administer: activated charcoal (20 - 40 g in 10% slurry). Caution if victim vomits. Immediately call in physician.

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 104004
Product name: Paraformaldehyde tablets 1 g

5. Fire-fighting measures

Suitable extinguishing media:
Water, CO₂, foam, powder.

Special risks:
Combustible. Danger of dust explosion. Development of hazardous combustion gases or vapours possible in the event of fire. The following may develop in event of fire: formaldehyde vapours.

Special protective equipment for fire fighting:
Do not stay in dangerous zone without self-contained breathing apparatus. In order to avoid contact with skin, keep a safety distance and wear suitable protective clothing.

Other information:
Contain escaping vapours with water. Prevent fire-fighting water from entering surface water or groundwater.

6. Accidental release measures

Person-related precautionary measures:
Avoid substance contact. Avoid generation of dusts; do not inhale dusts. Ensure supply of fresh air in enclosed rooms.

Environmental-protection measures:
Do not allow to enter sewerage system.

Procedures for cleaning / absorption:
Take up dry. Forward for disposal. Clean up affected area. Avoid generation of dusts.

7. Handling and storage

Handling:

Notes for safe handling:
Work under hood. Do not inhale substance.

Storage:

Tightly closed. Dry. At +5°C to +30°C.

Requirements for storage rooms and containers:
No metal containers.

8. Exposure controls/personal protection

Specific control parameter

EC

Name	Formaldehyde
Carcinogenic	C 3:owing possible carcinogenic effects for man
Sensitization	Sh Danger of sensitization of the skin

Personal protective equipment:

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier.

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 104004
Product name: Paraformaldehyde tablets 1 g

Respiratory protection: required when dusts are generated. Filter B-(P2)

Eye protection: required

Hand protection:

In full contact:

Glove material: nitrile rubber

Layer thickness: 0.11 mm

Breakthrough time: > 480 Min.

In splash contact:

Glove material: nitrile rubber

Layer thickness: 0.11 mm

Breakthrough time: > 480 Min.

The protective gloves to be used must comply with the specifications of EC directive 89/686/EEC and the resultant standard EN374, for example KCL 741 Dermatril® L (full contact), 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 and supplied by us as well as to the purpose specified by us. 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:

Suitable protective clothing.

Industrial hygiene:

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance.

9. Physical and chemical properties

Form:	solid		
Colour:	white		
Odour:	characteristic odour		
pH value	(20 °C)	~ 5.5	(saturated solution)
Melting point		100-130 °C	
Boiling point		not available	
Ignition temperature		300 °C	
Flash point		not available	
Explosion limits	lower	7	Vol%
	upper	73	Vol%
Vapour pressure	(25 °C)	1.93	hPa
Density	(20 °C)	1.4	g/cm ³
Solubility in water	(20 °C)	sparingly soluble	

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 104004
Product name: Paraformaldehyde tablets 1 g

10. Stability and reactivity

Conditions to be avoided

Heating (decomposition).

Substances to be avoided

Violent reactions possible with: / Risk of ignition or formation of inflammable gases or vapors with:
/ Generates dangerous gases or fumes in contact with: strong oxidizing agents, bases, acids, amines.

Hazardous decomposition products

in the event of fire: See chapter 5.

Further information

dust explosion possible.
unsuitable working materials: iron, copper, nickel, zinc and various alloys.

11. Toxicological information

Acute toxicity

LC₅₀ (inhalation, rat): 1.07 mg/l /4 h (External MSDS).
LD₅₀ (oral, rat): 592 mg/kg (External MSDS).
LDLo (dermal, rabbit): 10000 mg/kg (RTECS).

Specific symptoms in animal studies:

Eye irritation test (rabbit): Severe irritations (OECD 405).
Skin irritation test (rabbit): No irritation (OECD 404).

Subacute to chronic toxicity

Sensitization:
Experience in man: positive. (External MSDS)

The carcinogenic potential requires further clarification.

Mutagenicity (mammal cell test): positive. (in vitro) (Lit.)

Further toxicological information

After inhalation: dyspnoea, coughing. Possible damages: pulmonary oedema.
After skin contact: Severe irritations.
Chronic intoxication: dermatitis.
After eye contact: Severe irritations.
After swallowing: Nausea, vomiting, gastric pain, Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.
Systemic effects: drop in blood pressure, collapse.

Other notes:

Product is transformed into by-products. Secondary products cause:
After skin contact: Risk of sensitization. Danger of skin absorption.

Further data

Further hazardous properties cannot be excluded.
The product should be handled with the care usual when dealing with chemicals.

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 104004
Product name: Paraformaldehyde tablets 1 g

12. Ecological information

Abiotic degradation:
Decomposition products: formaldehyde.

Biologic degradation:
Biodegradation: 97.4 % /5 d (Formaldehyde) (Lit.).
Readily biodegradable.

Ecotoxic effects:
Biological effects:
Reacts with water to form toxic decomposition products.
Harmful effect on aquatic organisms.
Fish toxicity: *Onchorhynchus mykiss* LC₅₀: 46-78 mg/l /96 h (ECOTOX Database).
Daphnia toxicity: *Daphnia magna* EC₅₀: 42 mg/l /24 h (Formaldehyde) (External MSDS).
Algal toxicity: *Sc.quadricauda* IC₅: 2.5 mg/l /8 d (Formaldehyde) (IUCLID).
Bacterial toxicity: *Photobacterium phosphoreum* EC₅₀: 8.5 mg/l /30 min (Formaldehyde) (Lit.).

Further ecologic data:
Do not allow to enter waters, waste water, or soil!

13. Disposal considerations

Product:

Chemicals must be disposed of in compliance with the respective national regulations. Under www.retrologistik.de you will find country- and substance-specific information as well as contact partners.

Packaging:

Merck product packaging must be disposed of in compliance with the country-specific regulations or must be passed to a packaging return system. Under www.retrologistik.de you will find special information on the respective national conditions as well as contact partners.

14. Transport information

Road & Rail ADR, RID
UN 2213 PARAFORMALDEHYD, 4.1, III

Inland waterway ADN, ADNR not tested

Sea IMDG-Code
UN 2213 PARAFORMALDEHYDE, 4.1, III
Ems F-A S-G

Air CAO, PAX
UN 2213 PARAFORMALDEHYDE, 4.1, III

The transport regulations are cited according to international regulations and in the form applicable in Germany. Possible national deviations in other countries are not considered.

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 104004
Product name: Paraformaldehyde tablets 1 g

15. Regulatory information

Labelling according to EC Directives

Symbol:	Xn	Harmful
R-phrases:	20/22-36/37/38-40-43	Harmful by inhalation and if swallowed. Irritating to eyes, respiratory system and skin. Limited evidence of a carcinogenic effect. May cause sensitization by skin contact.
S-phrases:	22-26-36/37	Do not breathe dust. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing and gloves.

Reduced labelling (1999/45/EC, Art. 10, 4)

Symbol:	Xn	Harmful
R-phrases:	20/22-40-43	Harmful by inhalation and if swallowed. Limited evidence of a carcinogenic effect. May cause sensitization by skin contact.
S-phrases:	36/37	Wear suitable protective clothing and gloves.

16. Other information

Reason for alteration

Chapter 4: first aid measures.
Chapter 5: fire-fighting measures.
Chapter 8: personal protective equipment.
Chapter 10: stability and reactivity.
Chapter 11: toxicological information.
Chapter 12: ecological information.

General update.

Regional representation:

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

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