

# Safety Data Sheet

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

Trade name/designation:	Formaldehyde Solution 37% laboratory reagent
Product No.:	F0081
Synonymes:	none
CAS No.	50-00-0

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

Relevant identified uses:	General chemical reagent
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**1.3 Details of the supplier of the safety data sheet****Supplier****Avantor Performance Materials India Ltd.**

Street	501, 5th floor, Tiffany Building, Hiranandani Business Park,
Postal code/City	Thane, Maharashtra - 400607, India
Telephone	022-41288100

**Emergency phone number**

Telephone	1800105561
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**Preparation Information**

Product Information Compliance

<b>1.4 E-mail</b>	SDS@avantorsciences.com
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## SECTION 2: Hazard identification

### 2.1 Classification of the substance or mixture

#### Physical hazards

Flammable liquid, category 3

#### Health hazards

Acute toxicity, category 3, oral, dermal and inhalation

Skin corrosion, category 1B

Skin sensitization, category 1

Germ cell mutagenicity, category 2

Carcinogenicity, category 1B

Specific target organ toxicity (single exposure), category 1<sup>(1)</sup>

Specific target organ toxicity (single exposure), category 3, vascular

#### Target Organs

(1) no data available

### 2.2 Label elements

#### Hazard pictograms



**Signal word:** Danger

Flammable liquid and vapour.  
 Toxic if swallowed, in contact with skin or if inhaled.  
 Causes severe skin burns and eye damage.  
 May cause an allergic skin reaction.  
 Suspected of causing genetic defects.  
 May cause cancer.  
 Causes damage to organs.  
 May cause respiratory irritation.

#### Prevention

Obtain special instructions before use.  
 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
 Take precautionary measures against static discharge.  
 Wear protective gloves/protective clothing/eye protection/face protection.

#### Response:

IF SWALLOWED: rinse mouth. Do NOT induce vomiting.  
 IF ON SKIN: Wash with plenty of water/...  
 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
 IF exposed or concerned: Immediately call a POISON CENTER/doctor.

**2.3 Other hazards** The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

**SECTION 3: Composition / information on ingredients**

**Substances**

not applicable

**Mixtures**

**Hazardous ingredients**

Substance name	Identifier	Concentration	Hazard classes and hazard categories
Formaldehyde	CAS No.: 50-00-0	> 36%	Acute Tox. 3 - H301+H311+H331 Skin Corr. 1B - H314 Skin Sens. 1 - H317 Muta. 2 - H341 Carc. 1B - H350 STOT SE 3 - H335
Methanol	CAS No.: 67-56-1	15-16%	Flam. Liq. 2 - H225 Acute Tox. 3 - H301+H311+H331 STOT SE 1 - H370

**SECTION 4: First aid measures**

**4.1 General information**

IF exposed: Immediately call a POISON CENTRE/doctor. If unconscious but breathing normally, place in recovery position and seek medical advice. Never give anything by mouth to an unconscious person or a person with cramps. Change contaminated, saturated clothing. Do not leave affected person unattended.

**After inhalation**

Immediately call a POISON CENTRE/doctor. Remove casualty to fresh air and keep warm and at rest. If breathing is irregular or stopped, administer artificial respiration.

**In case of skin contact**

After contact with skin, wash immediately with plenty of water and soap. Remove contaminated, saturated clothing immediately. Immediate medical treatment required because corrosive injuries that are not treated are hard to cure.

**After eye contact**

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist. Protect uninjured eye. Remove contact lenses, if present and easy to do. Continue rinsing.

**In case of ingestion**

Immediately call a POISON CENTRE/doctor. Do NOT induce vomiting. Rinse mouth thoroughly with water. Give nothing to eat or drink.

**Self-protection of the first aider**

First aider: Pay attention to self-protection!

**4.2 Most important symptoms and effects, both acute and delayed**

no data available

**4.3 Indication of any immediate medical attention and special treatment needed**

no data available

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

The product itself does not burn.

Co-ordinate fire-fighting measures to the fire surroundings.

**Extinguishing media which must not be used for safety reasons**

no restriction

**5.2 Special hazards arising from the substance or mixture**

In case of fire may be liberated:

Carbon monoxide

Carbon dioxide (CO<sub>2</sub>)

**5.3 Advice for firefighters**

DO NOT fight fire when fire reaches explosives.

Special protective equipment for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing.

**5.4 Additional information**

Do not allow run-off from fire-fighting to enter drains or water courses.

Do not inhale explosion and combustion gases.

Use water spray jet to protect personnel and to cool endangered containers.

In case of fire: Evacuate area.

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

Do not breathe gas/vapour/aerosol. Provide adequate ventilation. Use personal protection equipment. In case of major fire and large quantities: Remove persons to safety. Wear a self-contained breathing apparatus and chemical protective clothing.

**6.2 Environmental precautions**

Do not allow to enter into surface water or drains. Make sure spills can be contained, e.g. in sump pallets or kerbed areas. Discharge into the environment must be avoided.

**6.3 Methods and material for containment and cleaning up**

Spilled product must never be returned to the original container for recycling. Clean contaminated articles and floor according to the environmental legislation. Collect in closed and suitable containers for disposal.

**6.4 Additional information**

Clear spills immediately.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Avoid:

Inhalation

Avoid contact with eyes and skin.

Use extractor hood (laboratory).

If handled uncovered, arrangements with local exhaust ventilation have to be used.

If local exhaust ventilation is not possible or not sufficient, the entire working area must be ventilated by technical means.

Protect from moisture.

### 7.2 Conditions for safe storage, including any incompatibilities

Recommended storage temperature: Keep bottles tightly closed and away from sources of ignition and heat.

Keep container tightly closed and in a well-ventilated place.

### 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

Does not contain substances above concentration limits fixing an occupational exposure limit.

### 8.2 Exposure controls

#### Appropriate engineering controls

Technical measures and the application of suitable work processes have priority over personal protection equipment. If handled uncovered, arrangements with local exhaust ventilation have to be used.

#### Personal protection equipment

Wear suitable protective clothing. When handling with chemical substances, protective clothing with CE-labels including the four control digits must be worn.

#### *Eye/face protection*

Eye glasses with side protection

#### *Skin protection*

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. Recommended glove articles DIN-/EN-Norms EN ISO 374 In the case of wanting to use the gloves again, clean them before taking off and air them well.

By short-term hand contact

Suitable material:	NBR (Nitrile rubber)
Thickness of the glove material:	0,12 mm
Breakthrough time::	240-480 min

By long-term hand contact

Suitable material:	NBR (Nitrile rubber)
Thickness of the glove material:	0,38 mm
Breakthrough time::	-

*Respiratory protection*

no data available

*Additional information*

Wash hands before breaks and after work. Avoid contact with eyes and skin. When using do not eat, drink or smoke. Provide eye shower and label its location conspicuously.

*Environmental exposure controls*

no data available

**SECTION 9: Physical and chemical properties**

**9.1 Information on basic physical and chemical properties**

(a) Appearance	
Physical state:	liquid
Colour:	colourless
(b) Odour:	no data available
(c) Odour threshold:	no data available

**Safety relevant basic data**

(d) pH:	3
(e) Melting point/freezing point:	-15 °C
(f) Initial boiling point and boiling range:	no data available
(g) Flash point:	60 °C (closed cup)
(h) Evaporation rate:	no data available
(i) Flammability (solid, gas):	Flammable liquid and vapour.
(j) Flammability or explosive limits	
Lower explosion limit:	no data available
Upper explosion limit:	no data available
(k) Vapour pressure:	no data available
(l) Vapour density:	no data available
(m) Relative density:	1.08 g/cm <sup>3</sup> (20 °C)
(n) Solubility(ies)	
Water solubility:	no data available
Soluble (g/L) in Ethanol:	no data available
(o) Partition coefficient: n-octanol/water:	no data available
(p) Auto-ignition temperature:	300 °C
(q) Decomposition temperature:	no data available
(r) Viscosity	
Kinematic viscosity:	no data available
Dynamic viscosity:	no data available
(s) Explosive properties:	not applicable
(t) Oxidising properties:	not applicable

## 9.2 Other information

Bulk density:	no data available
Refraction index:	no data available
Dissociation constant:	no data available
Surface tension:	no data available
Henry's Law Constant:	no data available

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Vapours can form explosive mixtures with air.

### 10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature).

### 10.3 Possibility of hazardous reactions

Formation of explosive mixtures with:

Oxidising agent

Nitrogen oxides (NO<sub>x</sub>)

Material, oxygen-rich, oxidizing

Nitric acid

Chlorine

Bromine

Exothermic reaction with:

Reducing agent

Acid

Acid halides

Alkali (lye), concentrated

Violent reaction with:

Alkali metals

Alkaline earth metal

Formation of:

Hydrogen

### 10.4 Conditions to avoid

UV-radiation/sunlight

Heat

This material is combustible and can be ignited by heat, sparks, flames, or other sources of ignition (e.g. static electricity, pilot lights, or mechanical/electrical equipment).

### 10.5 Incompatible materials

light metals

Plastic articles

### 10.6 Hazardous decomposition products

no data available

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

**Acute effects**

*Acute oral toxicity:*

Formaldehyde - LD50: > 100 mg/kg - Rat - (CHP)

Methanol - LD50: > 5628 mg/kg - Rat - (IUCLID)

Methanol - LDLo: > 143 mg/kg - Human - (RTECS)

*Acute dermal toxicity:*

Formaldehyde - LD50: > 270 mg/kg - Rabbit - (CHP)

Methanol - LD50: > 15800 mg/kg - Rabbit

*Acute inhalation toxicity:*

Formaldehyde - LC50: > 0.578 mg/l (4h) - Rat - (CHP)

Methanol - TCLo: > 160 ppm (4h) - Human

**Irritant and corrosive effects**

*Primary irritation to the skin:*

Causes severe skin burns and eye damage.

*Irritation to eyes:*

Causes serious eye damage.

*Irritation to respiratory tract:*

May cause respiratory irritation.

**Respiratory or skin sensitisation**

In case of skin contact: sensitising

After inhalation: not sensitising

**STOT-single exposure**

May cause respiratory irritation.

**STOT-repeated exposure**

not applicable

**CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**

**Carcinogenicity**

The table below indicates whether each agency has listed any ingredient as a carcinogen.

**Germ cell mutagenicity**

Suspected of causing genetic defects.

**Reproductive toxicity**

No indications of human reproductive toxicity exist.

**Aspiration hazard**

not applicable

**Other adverse effects**

no data available



## SECTION 12: Ecological information

### 12.1 Ecotoxicity

#### Fish toxicity:

Formaldehyde - LC50: 52.5 mg/l (96 h)

Methanol - LC50: 24000 mg/l (96 h) - Poirier, S.H., M.L. Knuth, C.D. Anderson-Buchou, L.T. Brooke, A.R. Lima, and P.J. Shubat 1986. Comparative Toxicity of Methanol and N,N-Dimethylformamide to Freshwater Fish and Invertebrates. *Bull. Environ. Contam. Toxicol.* 37(4):615-621

#### Daphnia toxicity:

Formaldehyde - LC50: 1070 mg/l (48 h)

Formaldehyde - EC50: 14 mg/l (48 h)

Methanol - LC50: 3290 mg/l (48 h) - Guilhermino, L., T. Diamantino, M.C. Silva, and A.M.V.M. Soares 2000. Acute Toxicity Test with *Daphnia magna*: An Alternative to Mammals in the Prescreening of Chemical Toxicity?. *Ecotoxicol. Environ. Saf.* 46(3):357-362

Methanol - EC50: 24500 mg/l (48 h) - Randall, T.L., and P.V. Knopp 1980. Detoxification of Specific Organic Substances by Wet Oxidation. *J. Water Pollut. Control Fed.* 52(8):2117-2130

#### Algae toxicity:

no data available

#### Bacteria toxicity:

no data available

### 12.2 Persistence and degradability

no data available

### 12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water: no data available

### 12.4 Mobility in soil:

no data available

### 12.5 Results of PBT/vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

### 12.6 Other adverse effects

no data available

**SECTION 13: Disposal considerations**

**13.1 Waste treatment methods**

**Appropriate disposal / Product**

Dispose according to local legislation. Consult the appropriate local waste disposal expert about waste disposal.

**Appropriate disposal / Package**

Dispose according to local legislation. Handle contaminated packages in the same way as the substance itself.

**SECTION 14: Transport information**

**Land transport (ADR/RID)**

14.1	UN-No.:	1198
14.2	Proper Shipping Name:	FORMALDEHYDE SOLUTION, FLAMMABLE
14.3	Class(es):	3 (8)
	Classification code:	FC
	Hazard label(s):	3+8
14.4	Packing group:	III
14.5	Environmental hazards:	No
14.6	Special precautions for user:	
	Hazard identification number (Kemler No.):	38
	tunnel restriction code:	D/E (Passage forbidden through tunnels of category D when carried in bulk or in tanks. Passage forbidden through tunnels of category E.)

**Sea transport (IMDG)**

14.1	UN-No.:	1198
14.2	Proper Shipping Name:	FORMALDEHYDE SOLUTION, FLAMMABLE
14.3	Class(es):	3 (8)
	Classification code:	
	Hazard label(s):	3+8
14.4	Packing group:	III
14.5	Environmental hazards:	No
	Marine pollutant:	No
14.6	Special precautions for user:	
	Segregation group:	-
	EmS-No.	F-E S-C
14.7	Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	not relevant

**Air transport (ICAO-TI / IATA-DGR)**

14.1	UN-No.:	1198
14.2	Proper Shipping Name:	FORMALDEHYDE SOLUTION, FLAMMABLE
14.3	Class(es):	3 (8)
	Classification code:	
	Hazard label(s):	3+8
14.4	Packing group:	III
14.5	Special precautions for user:	

**SECTION 15: Regulatory information**

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

**SECTION 16: Other information**

**Abbreviations and acronyms**

- H225 - Highly flammable liquid and vapour.
- H301+H311+H331 - Toxic if swallowed, in contact with skin or if inhaled.
- H314 - Causes severe skin burns and eye damage.
- H317 - May cause an allergic skin reaction.
- H335 - May cause respiratory irritation.
- H341 - Suspected of causing genetic defects.
- H350 - May cause cancer.
- H370 - Causes damage to organs.

- ACGIH - American Conference of Governmental Industrial Hygienists
- ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road
- AGS - Committee on Hazardous Substances (Ausschuss für Gefahrstoffe)
- CLP - Regulation on Classification, Labelling and Packaging of Substances and Mixtures
- DFG - German Research Foundation (Deutsche Forschungsgemeinschaft)
- Gestis - Information system on hazardous substances of the German Social Accident Insurance (Gefahrstoffinformationssystem der Deutschen Gesetzlichen Unfallversicherung)
- IATA-DGR - International Air Transport Association-Dangerous Goods Regulations
- ICAO-TI - International Civil Aviation Organization-Technical Instructions
- IMDG - International Maritime Code for Dangerous Goods
- LTV - Long Term Value
- NIOSH - National Institute for Occupational Safety and Health
- OSHA - Occupational Safety & Health Administration
- PBT - Persistent, Bioaccumulative and Toxic
- RID - Regulation concerning the International Carriage of Dangerous Goods by Rail
- STV - Short Term Value
- SVHC - Substances of Very High Concern
- vPvB - very Persistent, very Bioaccumulative

Training advice: Provide adequate information, instruction and training for operators.

**Classification according to Regulation (EC) No 1272/2008 [CLP] Classification procedure**

Hazard statements	Hazard classes and hazard categories	Classification procedure
H226	Flam. Liq. 3	Data obtained by expert judgement.
H301+H311+H331	Acute Tox. 3	Calculation method.
H314	Skin Corr. 1B	Calculation method.
H317	Skin Sens. 1	Calculation method.
H341	Muta. 2	Calculation method.
H350	Carc. 1B	Calculation method.
H370	STOT SE 1	Calculation method.
H335	STOT SE 3	Calculation method.

### Additional information

Indication of changes            general update

If you need an explanation of the change, contact the supplier.  
(SDS@avantorsciences.com)

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