Safety Data Sheet

According to Hazardous Products Regulation (SOR/2015-17)


SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product identifier

<table>
<thead>
<tr>
<th>Trade name/designation:</th>
<th>Formaldehyde 37%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product No.:</td>
<td>41860</td>
</tr>
<tr>
<td>Synonyms:</td>
<td>no data available</td>
</tr>
<tr>
<td>CAS No.:</td>
<td>50-00-0</td>
</tr>
<tr>
<td>Other means of identification:</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Recommended Use:</th>
<th>For Further Manufacturing Use Only</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uses advised against:</td>
<td>Not for Human or Animal Drug Use</td>
</tr>
</tbody>
</table>

Details of the supplier of the safety data sheet

Canada

Supplier

VWR International LLC

Street 100 Matsonford Road Radnor Corporate Center, Building One, Suite 200 P.
O. Box 6660
Postal code/city Radnor, PA 19087
Telephone +1-800-932-5000 toll-free within US/CA
+1-610-386-1700
Telefax +1-610-728-2103
SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
Classification according to Hazardous Products Regulation (SOR/2015-17)

<table>
<thead>
<tr>
<th>Hazard classes and hazard categories</th>
<th>Hazard statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammable liquid, category 3</td>
<td>H226</td>
</tr>
<tr>
<td>Carcinogenicity, category 1B</td>
<td>H350</td>
</tr>
<tr>
<td>Germ cell mutagenicity, category 2</td>
<td>H341</td>
</tr>
<tr>
<td>Acute toxicity, category 3, oral, dermal and inhalation</td>
<td>H301+H311+H331</td>
</tr>
<tr>
<td>Specific target organ toxicity (single exposure), category 1</td>
<td>H370</td>
</tr>
<tr>
<td>Skin corrosion, category 1B</td>
<td>H314</td>
</tr>
<tr>
<td>Specific target organ toxicity (single exposure), category 3, vascular</td>
<td>H335</td>
</tr>
<tr>
<td>Skin sensitization, category 1</td>
<td>H317</td>
</tr>
</tbody>
</table>

2.2 Label elements
Labelling in accordance with (SOR/2015-17)

Hazard pictograms

Signal word: Danger
Hazard statements

<table>
<thead>
<tr>
<th>Hazard statement</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>H226</td>
<td>Flammable liquid and vapour.</td>
</tr>
<tr>
<td>H350</td>
<td>May cause cancer.</td>
</tr>
<tr>
<td>H341</td>
<td>Suspected of causing genetic defects.</td>
</tr>
<tr>
<td>H301+H311+H331</td>
<td>Toxic if swallowed, in contact with skin or if inhaled.</td>
</tr>
<tr>
<td>H370</td>
<td>Causes damage to organs.</td>
</tr>
<tr>
<td>H314</td>
<td>Causes severe skin burns and eye damage.</td>
</tr>
<tr>
<td>H335</td>
<td>May cause respiratory irritation.</td>
</tr>
<tr>
<td>H317</td>
<td>May cause an allergic skin reaction.</td>
</tr>
</tbody>
</table>

Precautonary statements

<table>
<thead>
<tr>
<th>Statement</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>P201</td>
<td>Obtain special instructions before use.</td>
</tr>
<tr>
<td>P210</td>
<td>Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.</td>
</tr>
<tr>
<td>P243</td>
<td>Take precautionary measures against static discharge.</td>
</tr>
<tr>
<td>P280</td>
<td>Wear protective gloves/protective clothing/eye protection/face protection.</td>
</tr>
<tr>
<td>P301+P330+P331</td>
<td>IF SWALLOWED: rinse mouth. Do NOT induce vomiting.</td>
</tr>
<tr>
<td>P302+P352</td>
<td>IF ON SKIN: Wash with plenty of water/...</td>
</tr>
<tr>
<td>P304+P340</td>
<td>IF INHALED: Remove person to fresh air and keep comfortable for breathing.</td>
</tr>
<tr>
<td>P308+P310</td>
<td>IF exposed or concerned: Immediately call a POISON CENTER/doctor.</td>
</tr>
</tbody>
</table>

SECTION 3: Composition / information on ingredients

3.1 Substances

not applicable

3.2 Mixtures

Hazardous ingredients GHS Classification in accordance with (SOR/2015-17)

<table>
<thead>
<tr>
<th>Substance name</th>
<th>Concentration</th>
<th>Product identifier</th>
<th>Hazard classes and hazard categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formaldehyde</td>
<td>&gt; 36 %</td>
<td>CAS No.: 50-00-0</td>
<td>Carc. 2 - H351</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Acute Tox. 3 - H301+H311+H331</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Skin Corr. 1B - H314</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Skin Sens. 1 - H317</td>
</tr>
<tr>
<td>Methanol</td>
<td>15 - 16 %</td>
<td>CAS No.: 67-56-1</td>
<td>Flam. Liq. 2 - H225</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Acute Tox. 3 - H301+H311+H331</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>STOT SE 1 - H370</td>
</tr>
</tbody>
</table>

SECTION 4: First aid measures

4.1 General information

If exposed: Immediately call a POISON CENTER/doctor. If unconscious 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 CENTER/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 CENTER/doctor. Do NOT induce vomiting. Rinse mouth thoroughly with water. Give nothing to eat or drink.

4.2 Most important symptoms/effects, acute and delayed
no data available

4.3 Indication of any immediate medical attention and special treatment needed
no data available

4.4 Self-protection of the first aider
First aider: Pay attention to self-protection!

4.5 Information to physician
no data available

SECTION 5: Firefighting measures

5.1 Extinguishing media
Suitable extinguishing media
Water spray
ABC powder
Carbon dioxide (CO2)
Nitrogen

Extinguishing media which must not be used for safety reasons
no restriction

5.2 Specific hazards arising from the chemical
In case of fire may be liberated:
Carbon dioxide (CO2)
Carbon monoxide

5.3 Advice for firefighters
DO NOT fight fire when fire reaches explosives. In case of fire: Wear self-contained breathing apparatus.
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 caution when applying carbon dioxide in confined spaces. Carbon dioxide can displace oxygen. Use water spray/stream to protect personnel and to cool endangered containers.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Do not breath gas/vapor/spray. 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 objects and areas thoroughly observing environmental regulations. 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 skin and eyes. 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
storage temperature: no data available
Storage class: no data available
Keep container tightly closed in a cool, well-ventilated place.

7.3 Specific end use(s)
no data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

<table>
<thead>
<tr>
<th>Ingredient (Designation)</th>
<th>Regulatory information</th>
<th>Country</th>
<th>Limit value type (country of origin)</th>
<th>Limit value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol</td>
<td>Gestis</td>
<td>CA</td>
<td>LTV</td>
<td>262 mg/m³ - 200 ppm</td>
</tr>
<tr>
<td>Methanol</td>
<td>Gestis</td>
<td>CA</td>
<td>STV</td>
<td>328 mg/m³ - 250 ppm</td>
</tr>
</tbody>
</table>

8.2 Engineering 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 (PPE)
Wear suitable protective clothing. When handling with chemical substances, protective clothing must be worn.

Eye/face protection
Eye glasses with side protection

Skin protection
When handling with chemical substances, protective gloves must be worn. In the case of wanting to use the gloves again, clean them before taking off and air them well. Recommended glove articles

By short-term hand contact
Suitable material: NBR (Nitrile rubber)
Thickness of the glove material: 0,12 mm
Breakthrough time (maximum wearing time): 240-480 min

By long-term hand contact
Suitable material: NBR (Nitrile rubber)
Thickness of the glove material: 0,38 mm
Breakthrough time (maximum wearing time): -

Respiratory protection
Respiratory protection necessary at: aerosol or mist formation If exposure limits are exceeded or irritation is experienced, NIOSH approved respiratory protection should be worn.

Additional information
Wash hands before breaks and after work. Avoid contact with skin and eyes. 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
   Color: colorless

(b) Odour: no data available

(c) Odour threshold: no data available

Safety relevant basic data

(d) pH: no data available

(e) Melting point/freezing point: no data available

(f) Initial boiling point and boiling range: no data available

(g) Flash point: no data available

(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: no data available

(n) Solubility(ies)
   Water solubility (g/L): no data available
   Soluble (g/L) in Ethanol: no data available

(o) Partition coefficient: n-octanol/water: no data available

(p) Auto-ignition temperature: no data available

(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: not applicable

Refraction index: no data available

Dissociation constant: no data available

Surface tension: no data available

Henry constant: no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Vapors may 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 (NOx)
- Material, oxygen-rich, combustible
- 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

10.7 Additional information
- Slowly corrodes aluminium and zinc under hydrogen evolution.

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 sensitization
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.

<table>
<thead>
<tr>
<th></th>
<th>ACGIH</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>no data available</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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)


Daphnia toxicity:
Formaldehyde - LC50: 1070 mg/l (48 h)
Formaldehyde - EC50: 14 mg/l (48 h)


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
no data available

12.6 Other adverse effects
no data available
SECTION 13: Disposal considerations

13.1 Waste treatment methods

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

Waste code product: no data available

Appropriate disposal / Package
Dispose according to legislation. Handle contaminated packages in the same way as the substance itself.

Additional information
no data available

SECTION 14: Transport information

Land transport (DOT)

UN-No.: 1198
Proper Shipping Name: FORMALDEHYDE SOLUTION, FLAMMABLE
Class(es): 3
Classification code: FC
Hazard label(s): 3+8
Packing group: III
Environmental hazards: No
Marine pollutant: No
Special precautions for user:

Sea transport (IMDG)

UN-No.: 1198
Proper Shipping Name: FORMALDEHYDE SOLUTION, FLAMMABLE
Class(es): 3
Classification code: 3+8
Packing group: III
Environmental hazards: No
MARINE POLLUTANT: no data available
Special precautions for user:
Segregation group: -
EmS-No. F-E S-C
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code not relevant
Air transport (ICAO-TI / IATA-DGR)

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

SECTION 15: Regulatory information

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

Domestic Substance List:

SECTION 16: Other information

Abbreviations and acronyms

ACGIH - American Conference of Governmental Industrial Hygiensts  
DOT - Department of Transportation  
IARC - International Agency for Research on Cancer  
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  
NTP - National Toxicology Program  
OSHA - Occupational Safety & Health Administration  
PBT - Persistent, Bioaccumulative and Toxic  
PEL - Permissible Exposure Limit  
STV - Short Term Value  
SVHC - Substances of Very High Concern  
TLV - Threshold Limit Value  
vPvB - very Persistent, very Bioaccumulative  
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)  
RID - Regulation concerning the International Carriage of Dangerous Goods by Rail

Additional information

Indication of changes: general update
The above information is believed to be correct but does not purport to be all-inclusive and shall be used only as a guidance. The information in this document is based on the present state knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. VWR International and his Affiliates shall not be held liable for any damage resulting from handling.