



## MATERIAL SAFETY DATA SHEET

### Paraldehyde

#### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** Paraldehyde

**SYNONYM:** s-Trimethyltrioxymethylene

**MOLECULAR FORMULA:** C<sub>6</sub>H<sub>12</sub>O<sub>3</sub>

**MOLECULAR WEIGHT:** 132.20 g/mol

**CREATION DATE:** Mar 02 2007

**CONTACT PERSON:**

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**REVISION DATE:** Jan 13 2016

#### 2. HAZARDS IDENTIFICATION

**Potential Acute Health Effects:** Very hazardous in case of ingestion, of inhalation. Hazardous in case of skin contact (irritant), of eye contact (irritant).

**Potential Chronic Health Effects:** Very hazardous in case of inhalation.

**CARCINOGENIC EFFECTS** : Not available.

**MUTAGENIC EFFECTS** : Not available.

**TERATOGENIC EFFECTS** : Not available.

**DEVELOPMENTAL TOXICITY:** Not available.

The substance is toxic to kidneys, lungs, the nervous system, liver, and mucous membranes.

Repeated or prolonged exposure to the substance can produce target organs damage

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### 3. COMPOSITION, INFORMATION ON INGREDIENTS

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CAS No.	EC No.	Chemical Name	Percent
123-63-7	204-639-8	Paraldehyde	>99

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### 4. FIRST AID MEASURES

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**Eye Contact:** Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Do not use an eye ointment. Seek medical attention.

**Skin Contact:** After contact with skin, wash immediately with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cold water may be used. Cover the irritated skin with an emollient. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.

**Serious Skin Contact:** Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

**Inhalation:** Allow the victim to rest in a well ventilated area. Seek immediate medical attention

**Serious Inhalation:**

Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

**Ingestion:**

Do not induce vomiting. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.

**Serious Ingestion:** Not available.

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### 5. FIRE FIGHTING MEASURES

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**Flammability of the Product:** Flammable.

**Auto-Ignition Temperature:** 238°C (460.4°F)

**Flash Points:** CLOSED CUP: 24°C

**Flammable Limits:** LOWER: 1.3%

**Products of Combustion:** These products are carbon oxides (CO, CO<sub>2</sub>).

**Fire Hazards in Presence of Various Substances:** Extremely flammable in presence of open flames and sparks.

**Explosion Hazards in Presence of Various Substances:** Risks of explosion of the product in presence of mechanical impact: Not available. Extremely explosive in presence of open flames and sparks.

**Fire Fighting Media and Instructions:** Flammable liquid, soluble or dispersed in water.

SMALL FIRE: Use DRY chemical powder.

LARGE FIRE: Use alcohol foam, water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, auto ignition or explosion.

**Special Remarks on Fire Hazards:** Not available.

**Special Remarks on Explosion Hazards:** Not available.

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## 6. ACCIDENTAL RELEASE MEASURES

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### **Small Spill:**

Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.

**Large Spill:** Flammable liquid. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources.

**Personal precaution** = Avoid contact with the skin and the eyes. Keep away from heat and sources of ignition. Provide adequate ventilation.

Environmental precautions = **Prevent further leakage or spillage. Do not discharge into the drains/surface waters/groundwater.**

**Methods for cleaning Up** = Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.  
-Dispose of in accordance with local regulations

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## 7. HANDLING AND STORAGE

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**Precautions:** Keep away from heat. Keep away from sources of ignition. Ground all

equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapor/spray. Wear suitable protective clothing In case of insufficient ventilation, wear suitable respiratory equipment If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes Keep away from incompatibles such as oxidizing agents, alkalis.

**Storage:** Flammable materials should be stored in a separate safety storage cabinet or room. Keep away from heat. Keep away from sources of ignition. Keep container tightly closed. Keep in a cool, well-ventilated place. Ground all equipment containing material. A refrigerated room would be preferable for materials with a flash point lower than 37.8°C (100°F).

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## 8. EXPOSURE CONTROLS, PERSONAL PROTECTION

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**Engineering Controls:** Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the Work-station location.

**Personal Protection:** Splash goggles. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

**Personal Protection in Case of a Large Spill:** Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

**Exposure Limits:** Not available.

### Personal protective

**General advice** = Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Use only in an area equipped with a safety shower. Hold eye wash fountain available.

**Hygiene measures** - When using, do not eat, drink or smoke. Take off all contaminated clothing immediately. Wash hands before breaks and immediately after handling the product.

**Skin protection** - Impervious clothing

**Hand protection** -Chemicals resistant gloves

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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<b>Physical state and appearance:</b>	Liquid
<b>Odor:</b>	Sweet
<b>Color:</b>	Colourless
<b>pH (1% soln/water):</b>	Not available
<b>Boiling Point:</b>	123 - 124°C
<b>Melting Point:</b>	12 °C (53.6°F)
<b>Flash Point:</b>	24 °C – Closed cup
<b>Critical Temperature:</b>	Not available.
<b>Specific Gravity:</b>	0.996 g/cm <sup>3</sup>
<b>Vapor Pressure:</b>	Not available
<b>Vapor Density:</b>	Not available
<b>Volatility:</b>	Not available
<b>Odor Threshold:</b>	Not available
<b>Water/Oil Dist. Coeff.:</b>	Not available
<b>Ionicity (in Water):</b>	Not available
<b>Dispersion Properties:</b>	See solubility in water, methanol, diethyl ether, acetone
<b>Solubility:</b>	Easily soluble in methanol, diethyl ether, acetone. Partially soluble in cold water

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## 10. STABILITY AND REACTIVITY

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**Stability** : The product is stable.

**Instability Temperature** : Not available.

**Conditions of Instability** : Not available.

**Incompatibility with various substances** : Highly reactive with oxidizing agents, alkalis.

**Corrosivity** : Non-corrosive in presence of glass.

**Special Remarks on Reactivity**: Not available.

**Special Remarks on Corrosivity**: Not available.

**Polymerization** : No.

**Routes of exposure** - inhalation

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## 11. TOXICOLOGICAL INFORMATION

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**Routes of Entry**: Eye contact. Inhalation. Ingestion.

**Toxicity to Animals**: Acute oral toxicity (LD50): 1530 mg/kg [Rat]. Acute dermal toxicity (LD50): 14000 mg/kg [Rabbit].

**Chronic Effects on Humans**: The substance is toxic to kidneys, lungs, the nervous system, liver, mucous membranes.

**Other Toxic Effects on Humans**: Very hazardous in case of ingestion, of inhalation. Hazardous in case of skin contact (irritant).

**Special Remarks on Toxicity to Animals**: Not available.

**Special Remarks on Chronic Effects on Humans**: Not available.

**Special Remarks on other Toxic Effects on Humans**: Not available.

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## 12. ECOLOGICAL INFORMATION

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**Ecotoxicity**: Not available.

**BOD5 and COD**: Not available.

**Products of Biodegradation**: Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

**Toxicity of the Products of Biodegradation**: The products of degradation are more toxic.

**Special Remarks on the Products of Biodegradation**: Not available.

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## 13. DISPOSAL CONSIDERATIONS

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Waste Disposal

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## 14. TRANSPORT INFORMATION

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**DOT Classification** : Class 3: Flammable liquid.

**Identification** : Paraldehyde : UN1264 PG: III

**Special Provisions for Transport:** Not available

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## 15. REGULATORY INFORMATION

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**Federal and State Regulations:**

**Pennsylvania RTK** : Paraldehyde

**Massachusetts RTK** : Paraldehyde

**TSCA 8(b) inventory** : Paraldehyde

SARA 313 toxic chemical notification and release reporting: Paraldehyde

**CERCLA** : Hazardous substances.: Paraldehyde

**Other Regulations** : OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

**Other Classifications:**

**WHMIS (Canada)** :CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F).

**CLASS D-2A** : Material causing other toxic effects (VERY TOXIC).

**DSCL (EEC)** :R10- Flammable.R22- Harmful if swallowed.R36/38- Irritating to eyes and skin.

HMIS (U.S.A.):

**Health Hazard:** 2

**Fire Hazard:** 3

**Reactivity:** 0

**Personal Protection:** h

**National Fire Protection Association (U.S.A.):**

**Health:** 2

**Flammability:** 3

**Reactivity:** 1

**Specific hazard:**

**Protective Equipment** :Gloves.Lab coat.Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.Splash goggles.

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## 16. OTHER INFORMATION

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The information in this safety data sheet is based on data and samples provided. The sheet was written to the best of our ability and according to the state of knowledge at that time. The safety data sheet only constitutes a guideline for the safe handling, use, consumption, storage, transport and disposal of the substances/preparations/mixtures

mentioned under point 1. New safety data sheets are written from time to time. Only the most recent versions may be used. Old versions must be destroyed. Unless indicated otherwise word for word on the safety data sheet, the information does not apply to substances/preparations/mixtures in purer form, mixed with other substances or in processes.

The safety data sheet offers no quality specification for the substances/preparations/mixtures in question. Compliance with the instructions in this safety data sheet does not release the user from the obligation to take all measures dictated by common sense, regulations and recommendations or which are necessary and/or useful based on the real applicable circumstances. Godavari Biorefineries Limited does not guarantee the accuracy or exhaustiveness of the information provided.