



Specialized in chemicals

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## Material Safety Data Sheet

### Formaldehyde MSDS

#### Section 1: Chemical Product and Company Identification

**Product name:** Formaldehyde

**Molecular formula:** CH<sub>2</sub>O

**CAS Nr:** 50-00-0

**Molecular weight:** 30.03

**Contact Information for Emergency:** (0086) 551 65418678

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#### Section 2: Composition and Information on Ingredients

**Composition:**

Name	CAS #	%By Weight
Formaldehyde	50-00-0	37-40

#### Section 3: Hazards Identification

Appearance: APHA: 10 max liquid. Flash Point: 50 deg C.

**Danger!** Danger of very serious irreversible effects. Toxic if swallowed, inhaled or absorbed through the skin. Poison! Causes burns by all exposure routes. Contains formaldehyde which can cause cancer. Flammable liquid and vapor. May be fatal or cause blindness if swallowed. Vapor harmful. Cancer hazard. Cannot be made non-poisonous. May cause sensitization by skin contact.

**Target Organs:** Blood, kidneys, heart, central nervous system, liver, spleen, respiratory system, gastrointestinal system, eyes, skin, optic nerve.

**Potential Health Effects**

Eye: Causes eye burns. Lachrymator (substance which increases the flow of tears).

**Skin:** Causes skin burns. Toxic in contact with skin. May cause sensitization by skin contact.

**Ingestion:** May be fatal or cause blindness if swallowed. Poison by ingestion. May cause severe digestive tract irritation with abdominal pain, nausea, vomiting and diarrhea. Causes severe digestive tract burns. Toxic if swallowed.

**Inhalation:** May cause severe irritation of the respiratory tract with sore throat, coughing, shortness of breath and delayed lung edema. Causes chemical burns to the respiratory tract. May cause pulmonary edema and severe respiratory disturbances. Toxic if inhaled. Vapor harmful. May cause nausea, dizziness, and headache.

**Chronic:** May cause cancer in humans. Chronic exposure may cause lung damage. Adverse reproductive effects have been reported in animals. Laboratory experiments have resulted in mutagenic effects. Repeated or prolonged exposure may cause allergic reactions in sensitive individuals. Prolonged or repeated contact may cause possible eczema. Animal studies have reported the development of tumors.

#### Section 4: First Aid Measures

**Eyes:** Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

**Skin:** Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

**Ingestion:** POISON material. If swallowed, get medical aid immediately. Only induce vomiting if directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

**Inhalation:** Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

**Notes to Physician:** Treat symptomatically and supportively.

#### Section 5: Fire and Explosion Data

**General Information:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors may form an explosive mixture with air. Will burn if involved in a fire. Containers may explode in the heat of a fire. Combustible liquid and vapor.

**Extinguishing Media:** Use water spray, dry chemical, carbon dioxide, or chemical foam.

**Flash Point:** 50 deg C ( 122.00 deg F)

**Autoignition Temperature:** 424 deg C ( 795.20 deg F)

**Explosion Limits, Lower:** 7 vol %

**Upper:** 73 vol %

**NFPA Rating:** (estimated) Health: 3; Flammability: 2; Instability: 1

#### Section 6: Accidental Release Measures

**General Information:** Use proper personal protective equipment as indicated in Section 8.

**Spills/Leaks:** Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Wear a self contained breathing apparatus and appropriate personal protection. (See Exposure Controls, Personal Protection section). Remove all sources of ignition. Use a spark-proof tool. Do not let this chemical enter the environment.

**Section 7: Handling and Storage**

**Handling:** Wash thoroughly after handling. Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation.

**Storage:** Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Store protected from moisture.

**Section 8: Exposure Controls/Personal Protection**

**Engineering Controls:** Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use only under a chemical fume hood.

**Exposure Limits**

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Water	none listed	none listed	none listed
Methyl alcohol	200 ppm TWA; 250 ppm STEL; Skin - potential significant contribution to overall exposure by the cutaneous route	200 ppm TWA; 260 mg/m <sup>3</sup> TWA 6000 ppm IDLH	200 ppm TWA; 260 mg/m <sup>3</sup> TWA
Formaldehyde	0.3 ppm Ceiling	0.016 ppm TWA 20 ppm IDLH	0.75 ppm TWA; 0.5 ppm Action Level; 0.75 ppm TWA; 2 ppm STEL (Irritant and potential cancer hazard - see 29 CFR 1910.1048)

**OSHA Vacated PELs:** Water: No OSHA Vacated PELs are listed for this chemical. Methyl alcohol: 200 ppm TWA; 260 mg/m<sup>3</sup> TWA Formaldehyde: 3 ppm TWA (unless specified in 1910.1048)

**Personal Protective Equipment**

**Eyes:** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

**Skin:** Wear appropriate protective gloves to prevent skin exposure.

**Clothing:** Wear appropriate protective clothing to prevent skin exposure.

**Respirators:** A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

**Section 9: Physical and Chemical Properties**

Physical State: Liquid  
 Appearance: clear - APHA: 10 max  
 Odor: pungent odor

pH: 3 - 4.2  
Vapor Pressure: 2 mbar @ 20 deg C  
Vapor Density: >1.0  
Evaporation Rate: Not available.  
Viscosity: Not available.  
Boiling Point: 97 deg C @ 760 mmHg  
Freezing/Melting Point: -15 deg C  
Decomposition Temperature: Not available.  
Solubility: Soluble.  
Specific Gravity/Density: 1.083  
Molecular Formula: Mixture  
Molecular Weight: Not available

### Section 10: Stability and Reactivity Data

**Chemical Stability:** Stable under normal temperatures and pressures.

**Conditions to Avoid:** Incompatible materials, ignition sources, excess heat.

**Incompatibilities with Other Materials:** Strong oxidizing agents, reducing agents, strong acids, strong bases, acid chlorides, alkali metals, amines, anhydrides, phenols, isocyanates, acid anhydrides, aniline.

**Hazardous Decomposition Products:** Carbon monoxide, carbon dioxide.

**Hazardous Polymerization:** Will not occur.

### Section 11: Toxicological Information

**RTECS#:**

**CAS# 7732-18-5:** ZC0110000

**CAS# 67-56-1:** PC1400000

**CAS# 50-00-0:** LP8925000

**LD50/LC50:**

**CAS# 7732-18-5:**

Oral, rat: LD50 = >90 mL/kg;

**CAS# 67-56-1:**

Draize test, rabbit, eye: 40 mg Moderate;

Draize test, rabbit, eye: 100 mg/24H Moderate;

Draize test, rabbit, skin: 20 mg/24H Moderate;

Inhalation, rabbit: LC50 = 81000 mg/m<sup>3</sup>/14H;

Inhalation, rat: LC50 = 64000 ppm/4H;

Oral, mouse: LD50 = 7300 mg/kg;

Oral, rabbit: LD50 = 14200 mg/kg;

Oral, rat: LD50 = 5600 mg/kg;

Skin, rabbit: LD50 = 15800 mg/kg;

**CAS# 50-00-0:**

Draize test, rabbit, eye: 750 ug/24H Severe;

Draize test, rabbit, eye: 750 ug Severe;  
Draize test, rabbit, eye: 10 mg Severe;  
Draize test, rabbit, eye: 37% Severe;  
Draize test, rabbit, skin: 2 mg/24H Severe;  
Draize test, rabbit, skin: 50 mg/24H Moderate;  
Inhalation, mouse: LC50 = 454 mg/m<sup>3</sup>/4H;  
Inhalation, mouse: LC50 = 505 mg/m<sup>3</sup>/2H;  
Inhalation, rat: LC50 = 203 mg/m<sup>3</sup>;  
Inhalation, rat: LC50 = 578 mg/m<sup>3</sup>/2H;  
Inhalation, rat: LC50 = 250 ppm/2H;  
Oral, mouse: LD50 = 42

**Carcinogenicity:**

CAS# 7732-18-5: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

CAS# 67-56-1: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

CAS# 50-00-0:

ACGIH: A2 - Suspected Human Carcinogen

California: carcinogen, initial date 1/1/88 (gas)

NTP: Suspect carcinogen

IARC: Group 1 carcinogen

**Epidemiology:** Considered to be a carcinogen in humans according to IARC. Tumorigenic effects have been reported in experimental animals.

**Teratogenicity:** Teratogenic effects have occurred in experimental animals.

**Reproductive Effects:** Adverse reproductive effects have occurred in experimental animals.

**Mutagenicity:** Mutagenic effects have occurred in humans.

**Neurotoxicity:** No information found

**Other Studies:**

**Section 12: Ecological Information**

**Ecotoxicity:** No data available. No information available.

**Environmental:** No information available.

**Physical:** No information available.

**Other:** Do not empty into drains.

**Section 13: Disposal Considerations**

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

**RCRA P-Series:** None listed.

**RCRA U-Series:**

CAS# 67-56-1: waste number U154 (Ignitable waste).  
 CAS# 50-00-0: waste number U122.

**Section 14: Transport Information**

	US DOT	Canada TDG
Shipping Name:	FORMALDEHYDE, SOLUTIONS, FLAMMABLE	FORMALDEHYDE SOLUTION FLAMMABLE
Hazard Class:	3	3(8)
UN Number:	UN1198	UN1198
Packing Group:	III	III
Additional Info:		FLASHPOINT 50 C

**Section 15: Other Regulatory Information**

**US FEDERAL**

**TSCA**  
 CAS# 50-00-0 is listed on the TSCA inventory.

**Health & Safety Reporting List**  
 None of the chemicals are on the Health & Safety Reporting List.

**Chemical Test Rules**  
 None of the chemicals in this product are under a Chemical Test Rule.

**Section 12b**  
 None of the chemicals are listed under TSCA Section 12b.

**TSCA Significant New Use Rule**  
 None of the chemicals in this material have a SNUR under TSCA.

**CERCLA Hazardous Substances and corresponding RQs**  
 None of the chemicals in this material have an RQ.

**SARA Section 302 Extremely Hazardous Substances**  
 None of the chemicals in this product have a TPQ.

**Section 313** No chemicals are reportable under Section 313.

**Clean Air Act:**  
 This material does not contain any hazardous air pollutants.  
 This material does not contain any Class 1 Ozone depletors.  
 This material does not contain any Class 2 Ozone depletors.

**Clean Water Act:**  
 None of the chemicals in this product are listed as Hazardous Substances under the CWA.  
 None of the chemicals in this product are listed as Priority Pollutants under the CWA.  
 None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

**OSHA:**  
 None of the chemicals in this product are considered highly hazardous by OSHA.

**STATE**

CAS# 50-00-0 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

**California Prop 65**

California No Significant Risk Level: None of the chemicals in this product are listed.

**European/International Regulations**

**European Labeling in Accordance with EC Directives**

**Hazard Symbols:**

T

**Risk Phrases:**

R 25 Toxic if swallowed.

**Safety Phrases:**

S 22 Do not breathe dust.

**WGK (Water Danger/Protection)**

CAS# 50-00-0: 2

**Canada - DSL/NDSL**

CAS# 50-00-0 is listed on Canada's DSL List.

**Canada - WHMIS**

not available.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

**Canadian Ingredient Disclosure List**

CAS# 50-00-0 is listed on the Canadian Ingredient Disclosure List.

**Section 16: Other Information**

**References:** Not available.

**Other Special Considerations:** Not available.

**Created:** 10/10/2005 12:10 AM

**Last Updated:** 01/01/2020 12:00 PM

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