

MATERIAL SAFETY DATA SHEET

SECTION 1 - IDENTIFICATION

Product identifier : **FORMALDEGONE**

Product Code(s) : None reported.

Product Use : Formaldehyde fume suppressant.

Chemical Family : Mixture.

Supplier's name and address:
The Dodge Chemical Company (Canada) Ltd.
 1265 Fewster Drive
 Mississauga, Ontario, Canada
 L4W 1A2

Manufacturer's name and address:
 Refer to Supplier

Information Telephone # : (905) 625-0311

24 Hr. Emergency Tel # : (613) 996-6666 (CANUTEC)

SECTION 2 - HAZARDS IDENTIFICATION

Classification : WHMIS classification:
 Class B2 (Flammable Liquids);
 Class D2B (Materials Causing Other Toxic Effects, Toxic Material).

OSHA: This material is classified as hazardous under OSHA regulations (29CFR 1910.1200). Hazardous classification:
 Flammable liquid;
 Acute Health Hazard;
 Chronic Health Hazard.

Emergency Overview : Clear liquid. Pale yellow to clear colour. Slight alcohol odour.
 Warning!
 Flammable liquid and vapour Vapours may cause flash fire. Harmful or fatal if swallowed. May be harmful if inhaled. Aspiration hazard. Can enter the lungs and cause damage. May cause headache, nausea, dizziness and other symptoms of central nervous system depression. Causes eye irritation. Prolonged or repeated skin contact may cause drying and irritation. Prolonged overexposure may cause liver and kidney effects.

POTENTIAL HEALTH EFFECTS:

Signs and symptoms of short-term (acute) exposure

- Inhalation* : May cause irritation to the nose, throat and upper respiratory tract. Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects. In extremely high concentrations, may cause coma, respiratory collapse and death.
- Skin* : May cause mild skin irritation on prolonged contact.
- Eyes* : Causes moderate to severe irritation.
- Ingestion* : May cause irritation of mouth, throat, and stomach. Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects. May be an aspiration hazard. Aspiration into the lungs during swallowing or subsequent vomiting may cause chemical pneumonitis, which can be fatal.

Effects of long-term (chronic) exposure

: Prolonged skin contact may cause dermatitis (rash), characterized by red, dry, itching skin. Prolonged overexposure may cause liver and kidney effects.

Carcinogenic status : See TOXICOLOGICAL INFORMATION, Section 11.

Additional health hazards : See TOXICOLOGICAL INFORMATION, Section 11.

Potential environmental effects : See ECOLOGICAL INFORMATION, Section 12.

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

<u>Ingredients</u>	<u>CAS #</u>	<u>Wt.%</u>
Isopropanol	67-63-0	60.00 - 100.00

SECTION 4 - FIRST AID MEASURES

- Inhalation** : Immediately remove person to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. Get medical attention.
- Skin contact** : Immediately flush with plenty of water, while removing contaminated clothing. If irritation or symptoms develop, seek medical attention. Wash contaminated clothing before re-use.
- Eye contact** : Immediately flush eyes with plenty of water for at least 15 minutes. Seek immediate medical attention/advice.
- Ingestion** : Call a physician or Poison Control Centre immediately. Do NOT induce vomiting. Have victim rinse mouth with water, then give one to two glasses of water to drink. Never give anything by mouth to an unconscious person. Guard against aspiration into lungs.
- Notes For Physician** : Treat symptomatically.

SECTION 5 - FIRE FIGHTING MEASURES

- Fire hazards/conditions of flammability** : Flammable liquid and vapour. Will ignite when exposed to heat, flame and other sources of ignition. Vapours are heavier than air and collect in confined and low-lying areas. Vapour can travel considerable distance and flashback to a source of ignition. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure. Product may float, and be re-ignited at the water's surface.
- Flammability classification (OSHA 29 CFR 1910.1200)** : Flammable Liquid Class 1B.
- Oxidizing properties** : None known.
- Explosion data: Sensitivity to mechanical impact / static discharge** : Not expected to be sensitive to mechanical impact. Vapours in the flammable range may be ignited by a static discharge of sufficient energy.
- Suitable extinguishing media** : Dry chemical, carbon dioxide and foam. Water may be ineffective because it may not cool product below the flashpoint.
- Special fire-fighting procedures/equipment** : Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. Move containers from fire area if safe to do so. Water spray may be useful in cooling equipment exposed to heat and flame. Avoid spreading burning liquid with water spray used for cooling purposes.
- Hazardous combustion products** : Carbon oxides, unburned alcohol and other irritating fumes and smoke.
- NFPA Rating**

	0 - Minimal	1 - Slight	2 - Moderate	3 - Serious	4 - Severe
	<i>Health: 2</i>	<i>Flammability: 3</i>	<i>Instability: 0</i>	<i>Special Hazards:</i>	None.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

- Personal precautions** : Restrict access to area until completion of clean-up. Keep all other personnel upwind and away from the spill/release. Individuals involved in the cleanup must wear appropriate personal protective equipment. Refer to protective measures listed in sections 7 and 8.
- Environmental precautions** : Ensure spilled product does not enter drains, sewers, waterways, or confined spaces. If necessary, dike well ahead of the spill to prevent runoff into drains, sewers, or any natural waterway or drinking supply.
- Spill response/cleanup** : Remove all sources of ignition. Ventilate area of release. Stop the spill at source if it is safe to do so. Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand), then place absorbent material into a container for later disposal (see Section 13). Notify the appropriate authorities as required.
- Prohibited materials** : Do not use combustible absorbents, such as sawdust.
- Special spill response procedures** : If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8002).
US CERCLA Reportable quantity (RQ): None reported.

SECTION 7 - HANDLING AND STORAGE

- Safe Handling procedures** : Wear chemically resistant protective equipment during handling. Use only in well-ventilated areas. Avoid breathing vapours. Avoid contact with skin, eyes and clothing. Keep away from heat, sparks, and open flames. Ground/Bond container and receiving equipment. Keep away from oxidizing agents and incompatibles. Use caution when opening cap. Keep containers closed when not in use. Wash thoroughly after handling.
- Storage requirements** : Store in a cool, dry, well-ventilated area. Store away from incompatible materials. Do not store for long periods of time below 2°C (35°F), or above 43.3°C (110°F). Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. Inspect periodically for damage or leaks. No smoking in the area.
- Incompatible materials** : Strong oxidizing agents, acids, copper, brass and aluminum.
- Special packaging materials** : Always keep in containers made of the same materials as the supply container.

SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits

<u>Ingredients</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>	
	<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>
Isopropanol	200 ppm	400 ppm	400 ppm	N/Av

- Ventilation and engineering measures** : General mechanical ventilation and local exhaust is recommended for use with this product.
- Respiratory protection** : Use in a well-ventilated area. If the TLV is exceeded, a NIOSH/MSHA-approved respirator is advised. Advice should be sought from respiratory protection specialists.
- Skin protection** : Impervious gloves must be worn when using this product. Advice should be sought from glove suppliers.
- Eye / face protection** : Chemical resistant goggles must be worn.
- Other protective equipment** : An eyewash station and safety shower should be made available in the immediate working area. Depending on conditions of use, an impervious apron should be worn.
- General hygiene considerations** : Avoid breathing vapour or mist. Avoid contact with skin, eyes and clothing. Do not eat, drink, smoke or use cosmetics while working with this product. Upon completion of work, wash hands before eating, drinking, smoking or use of toilet facilities. Remove soiled clothing and wash it thoroughly before reuse.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

- Physical state** : Clear liquid. **Appearance** : Pale yellow to clear colour.
- Odour** : Slight alcohol odour. **Odour threshold** : N/Av
- pH** : N/Av
- Boiling point** : 83 - 85°C (181 - 185°F) **Specific gravity** : 0.845 - 0.890
- Melting/Freezing point** : N/Av **Coefficient of water/oil distribution** : N/Av
- Vapour pressure (mmHg @ 20° C / 68° F)** : 33 (Isopropanol) **Solubility in water** : Partial
- Vapour density (Air = 1)** : > 1 **Evaporation rate (n-Butyl acetate = 1)** : > 1
- Volatile organic Compounds (VOC's)** : N/Av **Volatiles (% by weight)** : 100%
- Flash point** : 8 - 11°C (47 - 52°F)
- Flash point Method** : TCC **Auto-ignition temperature** : N/Av
- Lower flammable limit (% by vol.)** : 2 (Isopropanol) **Upper flammable limit (% by vol.)** : 12 (Isopropanol)
- Flame Projection Length** : N/Av **Flashback observed** : N/Av

Section 10: Stability And Reactivity

- Stability and reactivity** : Stable under the recommended storage and handling conditions prescribed.

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- Hazardous polymerization** : Hazardous polymerisation does not occur.
Conditions to avoid : Avoid excessive heat, sparks and open flame.
Materials To Avoid And Incompatibility : Strong oxidizing agents, acids, copper, brass and aluminum.
Hazardous decomposition products : None known, refer to hazardous combustion products in Section 4.

SECTION 11 - TOXICOLOGICAL INFORMATION

- Target organs** : Eyes, skin, respiratory system, central nervous system, liver and kidneys.
Routes of exposure : *Inhalation:* YES *Skin Absorption:* NO *Skin & Eyes:* YES *Ingestion:* YES
Toxicological data : There is no available data for the product itself, only for the ingredients. See below for individual ingredient acute toxicity data.

<u>Ingredients</u>	<u>LC₅₀(4hr)</u>		<u>LD₅₀</u>	
	<u>inh, rat</u>	<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>	
Isopropanol	17,000 ppm	4720 mg/kg	12,890 mg/kg	

- Carcinogenic status** : No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP.
Reproductive effects : Not expected to have other reproductive effects.
Teratogenicity : This product contains Isopropanol. Isopropanol is no longer considered a developmental toxin. Teratogenic / fetotoxic effects were observed in animals, however the effects were observed in the presence of maternal toxicity or at concentrations where maternal toxicity is expected to occur.
Mutagenicity : Not expected to be mutagenic in humans.
Epidemiology : Not available.
Sensitization to material : Not expected to be a skin or respiratory sensitizer.
Synergistic materials : N/Av
Irritancy : Moderate to severe eye irritant. Mild skin irritant.
other important hazards : CNS depression may result from extreme exposures.
Conditions aggravated by overexposure : Pre-existing skin, eye, respiratory and central nervous system disorders.


SECTION 12 - ECOLOGICAL INFORMATION

- Ecotoxicity** : No data is available on the product itself. The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters.
Mobility : No data is available on the product itself.
Persistence : No data is available on the product itself.
Bioaccumulation potential : No data is available on the product itself.
Other Adverse Environmental effects : No data is available on the product itself.

SECTION 13 - DISPOSAL CONSIDERATIONS

- Handling for Disposal** : Handle waste according to recommendations in Section 7.
Methods of Disposal : Improper disposal can cause damage to the environment. Dispose in accordance with all applicable federal, state, provincial and local regulations. Contact your local, state, provincial or federal environmental agency for specific rules.
RCRA : If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.


SECTION 14: TRANSPORT INFORMATION

Regulatory Information	UN Number	Shipping Name	Class	Packing Group	Label
TDG	UN1219	ISOPROPANOL SOLUTION	3	II	

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TDG Additional information	May be shipped as LIMITED QUANTITY when transported in containers no larger than 1.0 Litre, in packages not exceeding 30 kg gross mass. Under the TDGR, refer to Section 1.17 for additional exemption information, if shipping under this exemption.			
49CFR/DOT	UN1219	Isopropanol solution	3	II 
49CFR/DOT Additional information	May be shipped as LIMITED QUANTITY when transported in containers no larger than 1.0 Litre, in packages not exceeding 30 kg gross mass. Refer to 49 CFR Section 173.150.			

SECTION 15 - REGULATORY INFORMATION**US Federal Information:**

TSCA: All listed ingredients appear on the Toxic Substances Control Act (TSCA) inventory.

CERCLA Reportable Quantity (RQ) (40 CFR 117.302): None reported.

SARA TITLE III: Sec. 302, Extremely Hazardous Substances, 40 CFR 355: No Extremely Hazardous Substances are present in this material.

SARA TITLE III: Sec. 311 and 312, MSDS Requirements, 40 CFR 370 Hazard Classes: Fire Hazard; Acute Health Hazard; Chronic Health Hazard. Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds for the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

SARA TITLE III: Sec. 313, Toxic Chemicals Notification, 40 CFR 372: This product may be subject to SARA notification requirements, since it contains Toxic Chemical constituents above their de minimus concentrations. This product contains: Isopropanol.

US State Right to Know Laws:

California Proposition 65: To the best of our knowledge, this product does not contain any chemicals known to the State of California to cause cancer or reproductive harm.

Other U.S. State "Right to Know" Lists: The following chemicals are specifically listed by individual States: Isopropyl alcohol (CA, MA, MN, NJ, PA, RI).

International Information:

WHMIS information: This product is a WHMIS Controlled Product. It meets one or more of the criteria for a controlled product provided in Part IV of the Canadian Controlled Products Regulations (CPR). Refer to Section 2 for a WHMIS Classification for this product.

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and this MSDS contains all the information required by the CPR.

SECTION 16 - OTHER INFORMATION

HMIS Rating : * - Chronic hazard 0 - Minimal 1 - Slight 2 - Moderate 3 - Serious 4 - Severe
*Health: *2 Flammability: 3 Reactivity: 0*

Legend : ACGIH: American Conference of Governmental Industrial Hygienists
CA: California
CAS: Chemical Abstract Services
CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR: Code of Federal Regulations
CNS: Central Nervous System
DOT: Department of Transportation
EPA: Environmental Protection Agency
HMIS: Hazardous Materials Identification System
HSDB: Hazardous Substances Data Bank
IARC: International Agency for Research on Cancer
Inh: Inhalation
LC: Lethal Concentration
LD: Lethal Dose
MA: Massachusetts


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- MN: Minnesota
- MSHA: Mine Safety and Health Administration
- N/Ap: Not Applicable
- N/Av: Not Available
- NFPA: National Fire Protection Association
- NIOSH: National Institute of Occupational Safety and Health
- NJ: New Jersey
- NTP: National Toxicology Program
- PA: Pennsylvania
- OSHA: Occupational Safety and Health Administration
- PEL: Permissible exposure limit
- RCRA: Resource Conservation and Recovery Act
- RI: Rhode Island
- RTECS: Registry of Toxic Effects of Chemical Substances
- SARA: Superfund Amendments and Reauthorization Act
- STEL: Short Term Exposure Limit
- TCC: Tagliabue Closed Cup
- TDG: Canadian Transportation of Dangerous Goods Act & Regulations
- TLV: Threshold Limit Values
- TWA: Time Weighted Average
- WHMIS: Workplace Hazardous Materials Identification System

References

- : 1. ACGIH, Threshold Limit Values and Biological Exposure Indices for 2009.
- 2. International Agency for Research on Cancer Monographs, searched 2009.
- 3. Canadian Centre for Occupational Health and Safety, CCInfoWeb databases, 2009 (Chempendium, HSDB and RTECs).
- 4. Material Safety Data Sheet from manufacturer.
- 5. US EPA Title III List of Lists - October 2006 version.
- 6. California Proposition 65 List - December 18, 2009 version.

<p><u>Prepared for:</u> The Dodge Chemical Company (Canada) Ltd. 1265 Fewster Drive Mississauga, ON, Canada L4W 1A2 Telephone: (905) 625-0311 Please direct all enquiries to The Dodge Chemical Company (Canada).</p>	
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: Converted from 9 section format to 16 section format. All sections modified.

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