

MATERIAL SAFETY DATA SHEET

SECTION 1 - IDENTIFICATION

Product identifier : **EDEMACO**

Product Code(s) : None reported.

Product Use : Arterial coinjection chemical.

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 D1B (Materials Causing Immediate and Serious Toxic Effects, Toxic Material);
 Class D2A (Materials Causing Other Toxic Effects, Very Toxic Material);
 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. Orange-rose. Slightly viscous. Perfumed odour.
 Danger. Flammable liquid and vapour POISON! May be fatal or cause blindness if swallowed in sufficient quantities. Harmful if inhaled. Harmful if absorbed through the skin. May cause headache, nausea, dizziness and other symptoms of central nervous system depression. Prolonged or repeated overexposure could cause adverse liver effects. Causes severe eye irritation. May cause skin irritation. May cause an allergic skin reaction. Possible birth defect hazard - contains material that may cause birth defects, based on animal data.

POTENTIAL HEALTH EFFECTS:

Signs and symptoms of short-term (acute) exposure

- Inhalation* : May cause severe irritation to the nose, throat and respiratory tract. Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects. Affected person could experience a latent period of no symptoms, followed by blurred vision and possibly blindness. In extremely high concentrations, may cause coma, respiratory collapse and death.
- Skin* : May cause moderate skin irritation. May be absorbed and cause symptoms similar to those for inhalation.
- Eyes* : Direct contact causes severe irritation and possibly eye injury
- Ingestion* : Poison, may be fatal or cause blindness if swallowed. May cause severe irritation to the mouth, throat and stomach. Symptoms may include burning pain, vomiting and diarrhea. May be absorbed and cause symptoms similar to those for inhalation. Can not be made non-poisonous.

Effects of long-term (chronic) exposure

- : Prolonged skin contact may cause dermatitis (rash), characterized by red, dry, itching skin. Prolonged or repeated overexposure could cause adverse liver effects.
- Carcinogenic status** : See TOXICOLOGICAL INFORMATION, Section 11.
- Additional health hazards** : Possible sensitizer. Potential teratogen. 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>
Glutaraldehyde	111-30-8	10.00 - 30.00
Methanol	67-56-1	10.00 - 30.00

SECTION 4 - FIRST AID MEASURES

- Inhalation** : Immediately remove person to fresh air. If breathing stopped, begin 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. Get medical attention. Wash contaminated clothing before re-use.
- Eye contact** : Immediately flush eyes with plenty of water for at least 15 minutes. Obtain medical attention immediately.
- Ingestion** : Call a physician or Poison Control Centre immediately. Induce vomiting ONLY under the direct supervision of qualified medical personnel or a poison control centre. 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.
- Notes For Physician** : Treat symptomatically. Immediate medical attention is required. Contains methanol.

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.

Flammability classification (OSHA 29 CFR 1910.1200)

- : Flammable Liquid Class 1C.

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, foam, carbon dioxide and water fog.**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, formaldehyde and other irritating fumes and smoke.

NFPA Rating

- 0 - Minimal 1 - Slight 2 - Moderate 3 - Serious 4 - Severe
- : *Health:* 2 *Flammability:* 3 *Instability:* 0 *Special Hazards:* 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 material with inert, non-combustible absorbent material, such as sand. Pick up and transfer to properly labelled containers. Refer to Section 13 for disposal of contaminated material. 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): Methanol (5000 lbs / 2270 kg).

SECTION 7 - HANDLING AND STORAGE

- Safe Handling procedures** : Wear chemically resistant protective equipment during handling. Use only in well-ventilated areas. Do not breathe vapours or spray mist. Avoid contact with skin, eyes and clothing. Avoid repeated or prolonged exposure to full strength solution, as sensitization may develop. Keep away from heat, sparks, and open flames. Ground all equipment during handling. Exposure to temperatures above 43°C (110°F) will cause browning and coagulation of product. Use in covered containers whenever possible to avoid evaporation and minimize odour. Keep away from bases and incompatibles. Keep heated solution in covered container until cooled. Wash thoroughly after handling.
- Storage requirements** : Keep heated solution in covered container until cooled. Store in a cool, dry, well-ventilated area. Store away from incompatible materials. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks.
- Incompatible materials** : Oxidizing agents, acids, alcohols and amines. Alkalies catalyze an aldol-type condensation that is exothermic, but not expected to be violent.
- 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>
Glutaraldehyde	0.05 ppm (ceiling)	N/Av	*0.2 ppm (ceiling)	N/Av
Methanol	200 ppm (skin)	250 ppm (skin)	200 ppm	N/Av

*Note: The OSHA PEL listed above for Glutaraldehyde is a final rule / vacated value.

Ventilation and engineering measures

- : General mechanical ventilation and local exhaust is recommended for use with this product.

Respiratory protection

- : If mists are formed, or in confined spaces, respiratory protection may be required. NIOSH-approved respirators are recommended. 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

- : Safety glasses with side shields should be used with this product. If splashing is anticipated, splash goggles and a faceshield are recommended.

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

- : Do not breathe vapours or spray 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	: Slightly viscous – orange-rose.
Odour	: Perfumed odour.		
pH	: 7.4 - 7.6	Odour threshold	: N/Av
Boiling point	: 82 - 84°C (179 - 183°F)	Specific gravity	: 1.045 - 1.055
Melting/Freezing point	: N/Av	Coefficient of water/oil distribution	: N/Av
Vapour pressure (mmHg @ 20° C / 68° F)	: N/Av	Solubility in water	: Complete

Vapour density (Air = 1)	: > 1	Evaporation rate (n-Butyl acetate = 1)	: < 1
Volatile organic Compounds (VOC's)	: N/Av	Volatiles (% by weight)	: 85%
Flash point	: 31 - 33°C (88 - 92°F)	Auto-ignition temperature	: N/Av
Flash point Method	: TCC	Upper flammable limit (% by vol.)	: N/Av
Lower flammable limit (% by vol.)	: N/Av	Flashback observed	: N/Av
Flame Projection Length	: N/Av		

Section 10: Stability And Reactivity

Stability and reactivity	: Stable under the recommended storage and handling conditions prescribed. Stability may decrease as pH and temperature increase.
Hazardous polymerization	: Product may slowly polymerize in the presence of water and when heated. This polymerization occurs at temperatures below the boiling point of water, and is not considered hazardous.
Conditions to avoid	: Avoid moisture. Avoid heat and open flame.
Materials To Avoid And Incompatibility	: Oxidizing agents, acids, alcohols and amines. Alkalies catalyze an aldol-type condensation that is exothermic, but not expected to be violent.
Hazardous decomposition products	: None known, refer to hazardous combustion products in Section 4.

SECTION 11 - TOXICOLOGICAL INFORMATION

Target organs	: Eyes, skin, respiratory system, nervous system, liver.
Routes of exposure	: <i>Inhalation:</i> YES <i>Skin Absorption:</i> YES <i>Skin & Eyes:</i> YES <i>Ingestion:</i> 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>	LC₅₀(4hr)	LD₅₀	
	<u>inh, rat</u>	<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
Glutaraldehyde	24 ppm (heated)	134 mg/kg (rat); 100 mg/kg (mouse)	600 mg/kg
Methanol	64,000 ppm	5628 mg/kg	15,800 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	: Contains methanol, which may cause teratogenic effects at doses which are not maternally toxic.
Mutagenicity	: Not expected to be mutagenic in humans.
Epidemiology	: Not available.
Sensitization to material	: May cause allergic skin reaction. Symptoms may include redness, itching and swelling. No data available to indicate product or components may be respiratory sensitizers.
Synergistic materials	: N/Av
Irritancy	: Severe eye irritant. Moderate skin irritant.
other important hazards	: None known or reported by the manufacturer.
Conditions aggravated by overexposure	: Pre-existing skin and respiratory disorders.



SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity	: There is no data available for this product. 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	UN1993	FLAMMABLE LIQUID, N.O.S. (Methanol)	3	III	
TDG Additional information	May be shipped as Limited Quantity when transported in containers no larger than 5.0 Litres; 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	UN1993	Flammable liquids, n.o.s. (Contains: Methanol)	3	III	
49CFR/DOT Additional information	May be shipped as Limited Quantity when transported in containers no larger than 5.0 Litres; in packages not exceeding 30 kg gross mass. Refer to 49 CFR Section 173.150. US CERCLA Reportable quantity (RQ): Methanol (5000 lbs / 2270 kg).				

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): Methanol (5000 lbs / 2270 kg).

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: Methanol.

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: Glutaraldehyde (CA, MA, MN, NJ, PA, RI); Methanol (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
 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
 MA: Massachusetts
 MN: Minnesota
 N/Ap: Not Applicable
 N/Av: Not Available
 NFPA: National Fire Protection Association
 NJ: New Jersey
 NIOSH: National Institute of Occupational Safety and Health
 NTP: National Toxicology Program
 OSHA: Occupational Safety and Health Administration
 PA: Pennsylvania
 PEL: Permissible exposure limit
 RCRA: Resource Conservation and Recovery Act
 RI: Rhode Island
 SARA: Superfund Amendments and Reauthorization Act
 STEL: Short Term Exposure Limit
 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, CCIInfoWeb 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>Prepared for: 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>	
<p>Prepared by: ICC The Compliance Center Inc. http://www.thecompliancecenter.com</p>	 <p>The Compliance Center Inc. HAZARDOUS MATERIALS REGULATIONS SPECIALISTS</p>

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