DIMETHYL CARBONATE **9610-LIQUID**

Safety Data Sheet

Section 1: Identification

Product Identifier and Other Means of Identification

Product Name: Dimethyl Carbonate

SDS Code: 9610-Liquid

Related Part # 9610-945ML, 9610-3.78L

Recommended Use and Restriction on Use

Use: Solvent

Uses Advised Against: Not applicable

Details of Manufacturer or Importer

Manufacturer
MG Chemicals
1210 Corporate Drive
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CANADA

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FAX +1-800-340-0773
E-MAIL support@mgchemicals.com
WEB www.mgchemicals.com

MG Chemicals (Head Office)
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Surrey, British Columbia V4N 4E7
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☎ +1-905-331-1396
FAX +1-905-331-2682
E-MAIL info@mgchemicals.com

E-MAIL (Competent Person): sds@mgchemicals.com

Emergency Phone Number

For hazardous material incidents ONLY—leaks, spills, fires, exposures or accidents
USA or CANADA: Call CHEMTREC ☎: ***+1-800-424-9300***

For emergencies involving dangerous goods—Collect 24/7
CANADA: Call CANUTEC ☎: ***+1-613-996-6666*** or ****666*** on cellular phones

Section 2: Hazard(s) Identification

Classification of Hazardous Chemical

GHS Categories

Criteria	Category	Signal Word	Pictograms
Flammable Liquid	2	Danger	Flame

Note: The degree of severity is ranked within each hazard class from 1 (Highest Severity) to up to 5 (Lowest Severity). Severity categories rankings do not allow comparisons between classes.

Label Elements

Signal Word	**DANGER**
Pictograms	**Hazard Statements**
	H225: Highly flammable liquid and vapor
Prevention	**Precautionary Statements**
P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233	Keep container tightly closed.
P240	Ground and bond container and receiving equipment.
P241	Use explosion-proof equipment.
P243	Take action to prevent static discharges.
P280	Wear protective gloves/protective clothing/eye protection.

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Response	Precautionary Statements
P370 + P378	In case of fire: Use dry chemical, carbon dioxide, chemical foam, or water spray to extinguish.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
Storage	**Precautionary Statements**
P403 + P235	Store in well ventilated place. Keep cool.
Disposal	**Precautionary Statements**
P501	Dispose of contents/container in accordance to local/regional/international regulations.

Hazards Not Otherwise Classified

Other Criteria	Hazard Statements/Precautionary Statement	Signal Word	Pictograms
None	None	None	None

Section 3: Composition/Information on Ingredients

CAS #	Chemical Name	%(weight)
616-38-6	dimethyl carbonate	100%

Section 4: First-Aid Measures

Exposure Condition	*GHS Code: Precautionary Statement*
IF ON SKIN (or hair)	P303 + P361 + P353, P332 + P313
Immediate Symptoms	*slightly irritating*
Response	Take off immediately all contaminated clothing. Rinse skin with water or shower.
IF IN EYES	P305 + P351 + P338, P337 + P313
Immediate Symptoms	*redness, mild irritation*
Response	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention
IF INHALED	P304 + P340
Immediate Symptoms	*cough, mild irritation*
Response	Remove person to fresh air (out of the contaminated zone) and keep comfortable for breathing.
IF SWALLOWED	P301 + P330, P331
Immediate Symptoms	*gastrointestinal irritation, nausea, vomiting, diarrhea*
Response	Rinse mouth. Do NOT induce vomiting.

Section 5: Fire-Fighting Measures

Extinguishing Media	In case of fire: Use dry chemical, carbon dioxide, chemical foam, or water spray to extinguish. Use water spray to cool containers.
Specific Hazards	The vapors are heavier than air and may accumulate in low-lying areas. Vapors may travel long distances and ignite at an ignition source, which can cause a flashback or an explosion.
Combustion Products	Produces carbon oxides (CO, CO_2).
Fire-Fighter	Wear self-contained breathing apparatus and full fire-fighting turn-out gear.

Section 6: Accidental Release Measures

Personal Protection	See personal protection equipment in Section 8.
Precautions for Response	Avoid breathing the mist/spray/vapors. Remove or keep away all sources of ignition or extreme heat.
Environmental Precautions	Prevent spill from entering drains and waterways.
Containment Methods	Contain with inert absorbent (such as soil, sand, vermiculite).
Cleaning Methods	Collect the liquid in a sealable, chemical-resistant container. Sprinkle inert absorbent compound onto spill, then sweep into the container. Use soap and water to remove the last traces of residue. **RECOMMENDATION:** Use a grounded stainless steel or carbon steel container.
Disposal Methods	Dispose of spill waste according to Section 13.

Section 7: Handling and Storage

Prevention	Keep out of reach of children. Keep away from heat/sparks/open flames/hot surfaces. No smoking. Ground and bond container and receiving equipment. Take action to prevent static discharges. Use explosion-proof equipment. Keep container tightly closed.
Handling	Wear protective gloves/protective clothing/eye protection. Wash hands thoroughly after handling.
Storage	Store in a well-ventilated area. Keep cool.

Section 8: Exposure Controls/Personal Protection

Substances with Occupational Exposure Limit Values

Contains no substances with occupational exposure limits.

Engineering Controls

Ventilation	General ventilation is adequate for normal use; keep overall exposure as low as possible.

Personal Protective Equipment

Eye protection	Wear appropriate protective eyeglasses or chemical safety goggles. **RECOMMENDATION:** Use safety glasses with lateral protection (side shields).
Skin Protection	For likely contacts, use of protective butyl rubber, fluorinated rubber, or other chemically resistant gloves. For incidental contacts, use nitrile or other chemically resistant gloves.
Respiratory Protection	Not normally required, but if exposed to high levels of mist/vapors/fumes, wear respirator such as a half-mask respirator. If exposed to thermal degradation products from extreme heat or combustion conditions, wear a NIOSH approved self-contained breathing apparatus (SCBA) or supplied air respirator. **RECOMMENDATION:** Consult your local safety supply store to ensure that your respirator has a NIOSH (U.S.) approved filter cartridges appropriate for the ingredients listed in Section 3. The respirator should be fitted to the employee by a professional. Ensure vapor cartridges are stored in sealed plastic bags when not being used.

General Hygiene Considerations

Wash hands thoroughly with water and soap after handling.

Section 9: Physical and Chemical Properties

Physical State	Liquid	**Lower Flammability Limit**	4.2%
Appearance	Colorless	**Upper Flammability Limit**	12.9%
Odor	Characteristic	**Vapor Pressure @20 °C**	24 hPa [18 mmHg]
Odor Threshold	Not available	**Vapor Density**	3.1 (Air = 1)
pH	Not available	**Specific Gravity @25 °C**	1.06
Freezing/Melting Point	2 °C [36 °F]	**Solubility in Water @20 °C**	Partially soluble
Boiling Point	90 °C [194 °F]	**Partition Coefficient**	0.2
Flash Point a)	14 °C [58 °F]	**Auto-ignition Temperature**	458 °C [856 °F]
Evaporation Rate	Not available	**Decomposition Temperature**	Not available
Flammability (solid, gas)	Not available	**Viscosity @40 °C**	<20.5 mm^2/s

a) Closed cup value

Section 10: Stability and Reactivity

Reactivity	Dimethyl carbonate reacts violently with oxidants and potassium tert-butoxide causing a fire hazard.
Chemical Stability	Chemically stable at normal temperatures and pressures
Conditions to Avoid	Avoid flames, sparks, other ignition sources and incompatible substances.
Incompatibilities	Potassium tert-butoxide, strong oxidizing agents
Polymerization	Will not occur
Decomposition	Will not decompose under normal conditions. For thermal decomposition, see combustion products in Section 5.

Section 11: Toxicological Information

Routes of Exposure

Eye contact, Skin contact, Inhalation, Ingestion

Symptoms Summary

Eyes	May cause redness and mild irritation.
Skin	May cause slight irritation.
Inhalation	May cause cough and slight irritation of the upper respiratory tract.
Ingestion	May cause gastrointestinal irritation, nausea, vomiting, and diarrhea.
Chronic	Not available

Acute Toxicity (Lethal Exposure Concentrations)

Chemical Name	LD50 oral	LD50 dermal	LC50 inhalation
dimethyl carbonate	>5 000 mg/kg Rat	>5 000 mL/kg Rabbit	>5.36 mg/L 4 h Rat (vapors)

Note: Toxicity data from the RTECS[2] and ECHA were consulted. The data from supplier (M)SDS were also consulted.

Other Toxicological Effects

Skin corrosion/irritation	Based on available data, the classification criteria are not met.
Serious eye damage/irritation	Based on available data, the classification criteria are not met.
Sensitization (allergic reactions)	Based on available data, the classification criteria are not met.
Carcinogenicity (risk of cancer)	Not classifiable due to lack of data
Mutagenicity (risk of heritable genetic effects)	Based on available data, the classification criteria are not met.

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Reproductive Toxicity (risk to sex functions)	Based on available data, the classification criteria are not met.
Teratogenicity (risk of fetus malformation)	Based on available data, the classification criteria are not met.
STOT-single exposure	Based on available data, the classification criteria are not met.
STOT-repeated exposure	Based on available data, the classification criteria are not met.
Aspiration hazard	Based on available data, the classification criteria are not met.

Section 12: Ecological Information

Ecological classifications are based on the IMDG/GHS criteria in conjunction with ecotoxicological data from our suppliers, the European Chemical Agency database (http://echa.europa.eu), and other reliable sources.

Dimethyl carbonate does not meet classification criteria for aquatic environmental toxicants with LC50 and EC50 of >100 mg/L.

Acute Ecotoxicity

Available toxicity data does not meet classification thresholds.

Chronic Ecotoxicity

Available toxicity data does not meet classification thresholds.

Biodegradability

Readily Biodegradable

Other Effects

Volatile Organic Compound (VOC) content = 0% [0 g/L] *by VOC exemption*

Section 13: Disposal Information

Dispose of contents in accordance with all local, regional, national, and international regulations.

Section 14: Transport Information

Ground

Refer to TDG regulations (Canadian Transportation of Dangerous Goods regulations); **USA DOT 49 CFR** (Parts 100 to 185) **Regulations**.

Sizes 1 L and under	Sizes greater than 1 L
Limited Quantity 	**UN number**: UN1161 **Shipping Name:** DIMETHYL CARBONATE **Class:** 3 **Packing Group**: II **Marine Pollutant:** No 

Air

Refer to ICAO-IATA Dangerous Goods Regulations.

	Sizes greater than 1 L up to 5 L (passenger), 60 L (cargo)
	UN number: UN1161 **Shipping Name:** DIMETHYL CARBONATE **Class:** 3 **Packing Group**: II **Marine Pollutant:** No 

Sea

Refer to IMDG regulations.

Sizes 1 L Land under	Sizes greater than 1 L
Limited Quantity 	**UN number**: UN1161 **Shipping Name:** DIMETHYL CARBONATE **Class:** 3 **Packing Group**: II **Marine Pollutant:** No 

Note: **Shipper must be appropriately <u>trained and certified</u> before involvement with the transport of dangerous goods.**

Section 15: Regulatory Information

Canada

Domestic Substance List (DSL) / Non-Domestic Substance Lists (NDSL)

All hazardous ingredients are listed on the DSL.

Industry and Science Canada

MG Labels products intended for the workplace to conform to WHMIS labeling regulations. Product identification, net quantity declaration, minimum printing type size heights, and packaging of this product are in compliance.

USA

Other Classifications

HMIS® RATING

HEALTH:	**0**
FLAMMABILITY:	**3**
PHYSICAL HAZARD:	**0**
PERSONAL PROTECTION:	

NFPA® 704 CODES

Approximate HMIS and NFPA Risk Ratings Legend:
0 (Low or none); 1 (Slight); 2 (Moderate); 3 (Serious); 4 (Severe)

CAA (Clean Air Act, USA)

This product does not contain any class 1 ozone depleting substances.

This product does not contain any class 2 ozone depleting substances.

This product does not contain substances that are listed as hazardous air pollutants.

EPCRA (Emergency Planning and Right to Know Act, USA, 40 CFR 372.45

This product does not contain ingredients that subject to the reporting requirements of section 313 Title III of the SARA of 1986 and 40 CFR part 372.

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TSCA (Toxic Substances Control Act of 1976, USA)

All substances are TSCA listed.

California Proposition 65 (Chemicals known to cause cancer or reproductive toxicity, June 06, 2014 revision, USA).

This product does not contain any substances known to be listed in California.

Europe

RoHS (Restriction of Hazardous Substances Directive)

This product does not contain any lead, cadmium, mercury, hexavalent chromium, PBB's, or PBDE's, and complies with European RoHS regulations.

WEEE (Waste Electrical and Electronic Equipment Directive)

This product is not a piece of electrical or electronics equipment, and is therefore not governed by this regulation.

Section 16: Other Information

SDS Prepared by	Michel Hachey
Date of Revision	01 June 2016
Supersedes	Not applicable
Reason for Changes:	New product classified in accordance with WHMIS 2015 and HCS2012

Reference

1) ACGIH 2013 TLVs and BEIs: Based on the documentation of the threshold limit values for chemical substances and physical agents & biological exposure indices, American Conference of Governmental of Industrial Hygienist Cincinnati, OH (2013).

2) All toxicological data were checked against the RTECS (Registry of Toxic Effects of Chemical Substances®)

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Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists (USA)
ECHA	European Chemicals Agency
EU	European Union
EC50	Half maximal effective concentration
EL50	Half maximal effective loading
IARC	International Agency for Research on Cancer
NOELR	No observable effect loading ratio
NTP	National Toxicology Program
GHS	Globally Harmonized System of Classification of Labeling of Chemicals
LC50	Lethal Concentration 50%
LCLo	Lowest published lethal concentration
LD50	Lethal Dose 50%
OEL	Occupational Exposure Limit
PEL	Permissible Exposure Limit
SDS	Safety Data Sheet
STEL	Short-Term Exposure Limit
TCLo	Lowest published toxic concentration
TWA	Time Weighted Average
VOC	Volatile Organic Content

Technical Queries Contact us regarding any questions, improvement suggestions, or problems with this product. Application notes, instructions, and FAQs are located at www.mgchemicals.com.

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