



MATERIAL SAFETY DATA SHEET

ROLF C. HAGEN INC., 20500 TRANSCANDA HWY,
BAIE D'URFÉ, QUEBEC, H9X 0A2
CANADA

CO2 Cylinder
Fluval
A7540 / A7541 / A7545 / A7546 / A7547

Section I. Product identification and uses	
Product name	Fluval CO2 Cylinder
CAS #	
Use	
Supplier	Rolf C. Hagen Inc., 20 500 Trans Canada Hwy, Baie d'Urfé, H9X 0A2
Emergency	Call your local Poison Control Centre

Ingredients	Conc. (%)	CAS #	Exposure Limits
Carbon dioxide	100	124-38-9	<p>ACGIH TLV (United States, 9/2004). STEL: 54000 mg/m³ 15 minute(s). Form: All forms STEL: 30000 ppm 15 minute(s). Form: All forms TWA: 9000 mg/m³ 8 hour(s). Form: All forms TWA: 5000 ppm 8 hour(s). Form: All forms</p> <p>NIOSH REL (United States, 6/2001). STEL: 54000 mg/m³ 15 minute(s). Form: All forms STEL: 30000 ppm 15 minute(s). Form: All forms TWA: 9000 mg/m³ 10 hour(s). Form: All forms TWA: 5000 ppm 10 hour(s). Form: All forms</p> <p>OSHA PEL (United States, 6/1993). TWA: 9000 mg/m³ 8 hour(s). Form: All forms TWA: 5000 ppm 8 hour(s). Form: All forms</p>

Section III. Hazardous ingredients		
WHMIS	Classification	Transport of dangerous goods
	A: Compressed gas CEPA DSL: Carbon dioxide	UN1013, UN2187, Class 2.2

Section IV. Physical data	
Physical state and appearance/Odour	Gas
Freezing point	Sublimation temperature: -78.5°C (-109.3°F)
Boiling / Condensation point	-78.55°C (-109.4°F)
Critical temperature	30.9°C (87,6°F)



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Specific volume	8.77193 (ft ³ /lb)
Vapour density	1.53 (Air = 1)
Gas density	0.114 lb/ft ³
Vapour pressure	830 psig

Section V. Fire or explosion risk		
Flammability conditions		
Non flammable		
Means of extinction		
<p>Use an extinguishing agent suitable for surrounding fires.</p> <p>If involved in fire, shut off flow immediately if it can be done without risk. Apply water from a safe distance to cool container and protect surrounding area.</p> <p>No specific hazard.</p>		
Procedures in case of a fire		
<p>Fire fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face piece operated in positive pressure mode.</p>		
Hazardous combustion materials		
Flash point	Flammability threshold	Temp auto-ignition
	Minimal	Maximal

Section VI. Reactivity data	
Instability conditions	This product is stable
Incompatible products	
Reactivity conditions	
Hazardous decomposition products	

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Section VII. Toxicological properties	
Routes of entry	
Effects of acute	
Eye	Moderately irritating to the eyes.
Skin	Moderately irritating to the skin.
Inhalation	Moderately irritating to the respiratory system.
Ingestion	Ingestion is not a normal route of exposure for gases
Effects of chronic overexposure	Carcinogenic Effects: Not available Mutagenic Effects: Not available Teratogenic Effects: Not available Acute or chronic respiratory conditions may be aggravated by overexposure to this gas. Causes damage to the following organs: lungs, cardiovascular system, skin, eyes, central nervous system (CNS), eye, lens or cornea.

Section VIII. First aid	
Eye contact	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.
Skin contact	In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention. In case of frostbite, try to warm up the frozen tissues and seek medical attention.
Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

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Ingestion	Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms appear.
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Section IX. Accidental release measures	
Person-related safety precautions	Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment (Section XI). Shut off gas supply if this can be done safely. Isolate area until gas has dispersed.
Measures for environmental protection	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
Measures for cleaning/collecting	

Section X. Handling and storage
<p>Handling: Avoid contact with eyes, skin and clothing. Keep container closed. Use only with adequate ventilation. Do not puncture or incinerate container. Wash thoroughly after handling. High pressure gas. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.</p> <p>Never allow any unprotected part of the body to touch uninsulated pipes or vessels that contain cryogenic liquids. Prevent entrapment of liquid in closed systems or piping without pressure relief devices. Some materials may become brittle at low temperatures and will easily fracture.</p> <p>Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F).</p>

Section XI. Exposure controls and personal protection	
Protective clothing	<p>Eyes: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts. When working with cryogenic liquids, wear a full face shield.</p> <p>Skin: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.</p> <p>Respiratory: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment</p>



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indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

The applicable standards are (US) 29 CFR 1910.134 and (Canada) Z94.4-93

Hands: Chemical-resistant, impervious gloves or gauntlets complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Insulated gloves suitable for low temperatures

In case of a large spill: A self-contained breathing apparatus should be used to avoid inhalation of the product.

Engineering controls

Use only with adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits.

Section XII. Disposal considerations

Product recommendation

Product removed from the cylinder must be disposed of in accordance with appropriate federal, provincial/state, local regulation.

Uncleaned packaging recommendation

Section XIII. Ecological information

Products of degradation: These products are carbon oxides (CO, CO₂)




Toxicity of the products of degradation: The product itself and its products of degradation are not toxic

Environmental fate: Not available

Environmental hazards: No known significant effects or critical hazards

Toxicity to the environment: Not available

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Section XIV. Transportation information						
Regulatory information	UN number	Proper shipping name	Class	Packing group	Label	Additional information
DOT Classification	UN1013 UN2187	CARBON DIOXIDE Carbon dioxide, refrigerated liquid	2.2	Not applicable (gas).		<u>Limited quantity</u> Yes. <u>Packaging instruction</u> Passenger Aircraft Quantity limitation: 75 kg Cargo Aircraft Quantity limitation: 150 kg
TDG Classification	UN1013 UN2187	CARBON DIOXIDE Carbon dioxide, refrigerated liquid	2.2	Not applicable (gas).		<u>Explosive Limit and Limited Quantity Index</u> 0.125 <u>Passenger Carrying Road or Rail Index</u> 75
Mexico Classification	UN1013 UN2187	CARBON DIOXIDE Carbon dioxide, refrigerated liquid	2.2	Not applicable (gas).		-



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