

Material Safety Data Sheet
Cool-Rite

Section 1 - Chemical Product and Company Identification

MSDS Name:

Cool-Rite

Catalog Numbers:

8324

Synonyms:

1,1-Difluoroethane.

Company Identification:

Richard Allan Scientific
4481 Campus Drive
Kalamazoo, MI 49008

Company Phone Number:

800-522-7270

Emergency Phone Number:

800-424-9300

CHEMTREC Phone Number, US:

(800) 424-9300

CHEMTREC Phone Number, Europe:

(202) 483-7616

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name:	Percent	EINECS/ ELINCS
75-37-6	1,1-Difluoroethane	100	200-866-1

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: Clear colorless gas

Danger! Flammable gas. 1,1-Difluoroethane is converted to a compressed liquefied gas in this product. Vapor reduces oxygen available for breathing. May cause eye, skin, and respiratory tract irritation. May cause central nervous system depression. May cause frostbite. May cause cardiac disturbances. The toxicological properties of this material have not been fully investigated. Flash Point: -58°F.

Target Organs: Heart, Central nervous system

Potential Health Effects

Eye:

May cause eye irritation. May cause chemical conjunctivitis and corneal damage.

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Skin:

May cause skin irritation. May cause frostbite.

Ingestion:

May cause gastrointestinal irritation with nausea, vomiting and diarrhea. Expected to be a low ingestion hazard.

Inhalation:

Inhalation of high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness and coma. Vapor reduces oxygen available for breathing. May cause respiratory tract irritation. May cause heart disturbances, possibly leading to cardiac arrest and death. Inhalation of vapors may produce anesthetic effects and feelings of euphoria.

Chronic:

Effects may be delayed.

Section 4 - First Aid Measures

Eyes:

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid.

Skin:

In case of contact, flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical aid if irritation develops and persists. Wash clothing before reuse.

Ingestion:

If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.

Inhalation:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician:

Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

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. Vapors can travel to a source of ignition and flash back. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Containers may explode if exposed to fire. Expansion of liquid and change of state from liquid to vapor will allow flammable mixture to encompass a large area.

Extinguishing Media:

Use water spray to cool fire-exposed containers. Use water spray, dry chemical, carbon dioxide, or appropriate foam.

Autoignition Temperature:

849°F (453.89°C)

Explosion Limits:

Lower: 3.9% Upper: 16.9%

Flash Point:

-58°F (-50.00°C)

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NFPA Rating:

(estimated) Health: 1; Flammability: 4; 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. Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation. Use water spray to reduce vapors or divert vapor cloud drift.

Section 7 - Handling and Storage

Handling:

Wash thoroughly after handling. Use with adequate ventilation. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Keep away from heat, sparks and flame. Avoid ingestion and inhalation. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.

Storage:

Keep away from sources of ignition. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area. Do not heat above 52°C (125°F).

Section 8 - Exposure Controls, Personal Protection

Engineering Controls:

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local explosion-proof ventilation to keep airborne levels to acceptable levels.

Exposure Limits

Chemical Name:	ACGIH	NIOSH	OSHA
1,1-Difluoroethane	None listed	None listed	None listed

OSHA Vacated PELs

Personal Protective Equipment

Eyes:

Wear chemical splash goggles.

Skin:

Wear appropriate protective gloves to prevent skin exposure.

Clothing:

Wear appropriate protective clothing to prevent skin exposure.

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Respirators:

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Gas
Color: Clear colorless
Odor: Ethereal odor
pH: No information found
Vapor Pressure: 4550 mm Hg @ 25°C
Vapor Density: 2.4
Evaporation Rate: >1.0 (Ethyl ether=1.0)
Viscosity: 0.263 cp @ 50°C
Boiling Point: -13°F
Freezing/Melting Point: -117°C
Decomposition Temperature: No information found
Solubility in water: Slightly soluble.
Specific Gravity/Density: 0.909
Molecular Formula: C₂H₄F₂
Molecular Weight: 66.05

Section 10 - Stability and Reactivity

Chemical Stability:

Stable.

Conditions to Avoid:

Incompatible materials, ignition sources, excess heat

Incompatibilities with Other Materials

Alkaline earth metals, alkalis

Hazardous Decomposition Products

Carbon monoxide, carbon dioxide, hydrofluoric acid, carbonyl fluoride

Hazardous Polymerization

Has not been reported

Section 11 - Toxicological Information

RTECS:

CAS# 75-37-6: KI1410000

LD50/LC50:

CAS# 75-37-6:

Inhalation, mouse: LC50 = 977 gm/m³/2H.

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Carcinogenicity:

CAS# 75-37-6: Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology:

No information found

Teratogenicity:

No information found

Reproductive:

No information found

Mutagenicity

No information found

Neurotoxicity

No information found

Other:

The toxicological properties have not been fully investigated.

Section 12 - Ecological Information

No information found

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 Part 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P Series Wastes

None of the components are on this list.

RCRA U Series Wastes

None of the components are on this list.

Section 14 - Transport Information

	US DOT	Canadian TDG
Proper Shipping Name:	1,1-DIFLUOROET HANE	1,1-DIFLUOROET HANE
Hazard Class:	2.1	2.1
UN Number:	UN1030	UN1030
Packing Group:	II	II

Section 15 - Regulatory Information

US Federal

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TSCA

CAS# 75-37-6 is listed on the TSCA Inventory.

Health and Safety Reporting List

CAS# 75-37-6: Effective 4/13/89, Sunset 12/19/95

Chemical Test Rules

TSCA Section 12b

None of the components are on this list.

TSCA Significant New Use Rule (SNUR)

None of the components are on this list.

CERCLA Hazardous Substances and corresponding RQs

None of the components are on this list.

SARA Section 302 Extremely Hazardous Substances

None of the components are on this list.

SARA Hazard Categories

Not available

SARA Section 313

None of the components are on this list.

Clean Air Act - Hazardous Air Pollutants (HAPs)

None of the components are on this list.

Clean Air Act - Class 1 Ozone Depletors

None of the components are on this list.

Clean Air Act - Class 2 Ozone Depletors

None of the components are on this list.

Clean Water Act - Hazardous Substances

None of the components are on this list.

Clean Water Act - Priority Pollutants

None of the components are on this list.

Clean Water Act - Toxic Pollutants

None of the components are on this list.

OSHA - Highly Hazardous

None of the components are on this list.

OSHA - Specifically Regulated Chemicals

None of the components are on this list.

US State

State Right to Know

1,1-Difluoroethane can be found on the following state Right-to-Know lists: New Jersey, Massachusetts.

California Prop 65

None of the components are on this list.

California No Significant Risk Level

None of the components are on this list.

European/International Regulations

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European Labelling in Accordance with EC Directives:

Hazard Symbols: F

Risk Phrases: R 12 Extremely flammable.

Safety Phrases: S 7 Keep container tightly closed.

S 16 Keep away from sources of ignition - No smoking.

S 33 Take precautionary measures against static discharges.

S 43I In case of fire, use dry chemical, CO₂, water spray or foam. (These chemicals have very low flashpoints and the use of water spray may be inefficient).

WGK (Water Danger/Protection)

No information found

United Kingdom Occupational Exposure Limits

No information found

United Kingdom Maximum Exposure Limits

No information found

Canadian DSL/NDSL

CAS# 75-37-6 is listed on Canada's DSL List.

Canadian WHMIS Classifications

This product has a WHMIS classification of A, B1.

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

No information found

Section 16 - Other Information

Color information has been

MSDS Creation Date: September 29, 2005

Revision Date: September 29, 2005

This MSDS is intended for review and guidance in the receipt, storage, handling, use and disposal of product purchased from us, and for no other purpose. Use this product only as directed and in accordance with applicable instructions and warnings provided with the product. Please consult your institution's policies regarding use of this product. If you have obtained this MSDS other than in connection with the supply of this product from us, this MSDS should be consulted for general information only, and should not be relied upon for any purpose. As with the use of all hazardous materials, you should in all instances follow the guidance of the MSDS provided or available with the specific product purchased.