

Safety Data Sheet (SDS)

Section 1: Chemical Product and Company Identification

Cat# : 3711

Part Name: Jet Stream

Supplier: Decon Laboratories Inc.

460 Glennie Circle King of Prussia, Pa 19406
SDS Telephone # (610) 755-0800

Emergency Telephone Numbers

US Chemtrec: (800) 424-9300

Canada: (703) 527-3887

Identified uses: Laboratory use

Email Contact: cveloski@deconlabs.com

Section 2: Hazards Identification:

Hazard Overview

Classification of the substance or mixture

Classification (GHS-US)

Compressed gas H280

Label elements

GHS-US labeling

Hazard pictograms (GHS-US)

Signal Word: WARNING



Hazard and Precautionary Statements

H280 Contains gas under pressure; may explode if heated

P410+P403 Protect from sunlight. Store in a well ventilated place

P251 Pressurized container. Do not pierce or burn, even after use.

P410+P412 - Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F

Other hazards not contributing to the classification

: In accordance with aerosol flammability definitions, this product is non-flammable. However, the pressurized liquified gas is extremely flammable. Using this product in an upside-down position, or shaking while using, can cause liquid product to be expelled. The information pertaining to flash point below applies to the liquefied gas. Contact with liquid may cause cold burns/frostbite.

Contains gas under pressure; may explode if heated. Asphyxiant in high concentrations

Unknown acute toxicity(GHS-US)

No data available

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NFPA Rating

Hazard Ratings:

These ratings are Decon Laboratories Inc.'s own assessments of the properties of the material using the ANSI/NFPA 704 Standard. Additional information can be found by consulting in the NFPA published ratings lists (List 325 and list 49).

If no data is listed the information is not available

Health 2 Flammability 4 Reactivity 1

Section 3: Composition/ Information on ingredients

Substances

Name	Product identifier	%	Classification (GHS-US)
1,1-Difluoroethane, liquefied, under pressure (Main constituent)	(CAS No)75-37-6	> 99	Liquefied gas, H280

Full text of H-phrases: see section 16

Mixtures

Not applicable

Section 4: First Aid Measures

Description of first aid measures

First-aid measures general	: Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with labored breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.
First-aid measures after inhalation	: Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.
First-aid measures after skin contact	: Rinse with water. Take victim to a doctor if irritation persists. In case of frostbites: Wash immediately with lots of water (15 minutes)/shower. Do not apply (chemical) neutralizing agents. Remove clothing while washing. Do not remove clothing if it sticks to the skin. Cover wounds with sterile bandage. Consult a doctor/medical service. If burned surface > 10%: take victim to hospital.
First-aid measures after eye contact	: Rinse immediately with plenty of water for 15 minutes. Do not apply neutralizing agents. Take victim to an ophthalmologist.
First-aid measures after ingestion	: Not applicable.

Most important symptoms and effects, both acute and delays

Symptoms/injuries	: Not expected to present a significant hazard under anticipated conditions of normal use.
Symptoms/injuries after inhalation	: EXPOSURE TO HIGH CONCENTRATIONS: Accelerated heart action. Disturbances of heart rate. Coordination disorders. Feeling of weakness. Respiratory difficulties. Vomiting. Nausea. Disturbances of consciousness. Risk of lung edema. Respiratory collapse.
Symptoms/injuries after skin contact	: Red skin. Blisters. Frostbites.
Symptoms/injuries after eye contact	: Not applicable.
Symptoms/injuries after ingestion	: Not applicable.
Chronic symptoms	: No effects known.

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Indication of any immediate medical attention and special treatment needs

No additional information available

Section 5: Fire-Fighting Measures

Extinguishing media

Suitable extinguishing media : Water spray. BC powder. Carbon dioxide.
Unsuitable extinguishing media : No unsuitable extinguishing media known.

Special hazards arising from the substance or mixture

Fire hazard : DIRECT FIRE HAZARD. Extremely flammable. Gas/vapor flammable with air within explosion limits. INDIRECT FIRE HAZARD. May build up electrostatic charges: risk of ignition. May be ignited by sparks. Gas/vapor spreads at floor level: ignition hazard.
Explosion hazard : DIRECT EXPLOSION HAZARD. Gas/vapor explosive with air within explosion limits. INDIRECT EXPLOSION HAZARD. Heat may cause pressure rise in tanks/drums: explosion risk. may be ignited by sparks.
Reactivity : On heating/burning: release of toxic and corrosive gases/vapor e.g.: hydrofluoric acid, carbonylfluoride. Reacts violently with (strong) oxidizers.

Section 6: Accidental Release measures

Personal precautions, protective equipment and emergency procedures

General measures : Remove ignition sources. Use special care to avoid static electric charges. Eliminate every possible source of ignition. No naked lights. No smoking.

For non-emergency personnel

Protective equipment : Insulating gloves. Protective goggles. Protective clothing. Large spills/in enclosed spaces: compressed air apparatus. See "Material-Handling" to select protective clothing.

Emergency procedures **For emergency responders** : Keep upwind. Mark the danger area. Consider evacuation. Seal off low-lying areas. Close doors and windows of adjacent premises. Stop engines and no smoking. No naked flames or sparks. Spark- and explosionproof appliances and lighting equipment. Avoid ingress of water in the containers. Wash contaminated clothes.

Protective equipment : Equip cleanup crew with proper protection.

Emergency procedures : Ventilate area.

Environmental precautions

Prevent spreading in sewers.

Methods and material for containment and cleaning up

For containment : Contain released substance, pump into suitable containers. Consult "Material-handling" to select material of containers. Plug the leak, cut off the supply. Dam up the liquid spill. Tip the container on one side to stop the leakage. Try to reduce evaporation. Measure the concentration of the explosive gas-air mixture. Dilute/disperse combustible gas/vapor with water curtain. Provide equipment/receptacles with earthing. Do not spray water on unheated tank walls. Do not use compressed air for pumping over spills.

Methods for cleaning up : Damaged/cooled tanks must be emptied. Do not use compressed air for pumping over spills. See "Material-handling" for suitable container materials. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.

Reference to other sections

See Heading 8. Exposure controls and personal protection.

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Section 7: Handling and Storage

Precautions for safe handling

Additional hazards when processed : Pressurized container: Do not pierce or burn, even after use.

Precautions for safe handling : Comply with the legal requirements. Clean contaminated clothing. Handle uncleaned empty containers as full ones. Thoroughly clean/dry the installation before use. Do not use compressed air for pumping over. Use spark-/explosionproof appliances and lighting system. Take precautions against electrostatic charges. Keep away from naked flames/heat. Keep away from ignition sources/sparks. Observe normal hygiene standards. Measure the concentration in the air regularly. Measure the oxygen concentration in the air. Work under local exhaust/ventilation.

Hygiene measures : Do not eat, drink or smoke when using this product. Wash hands and other exposed areas with mild Soap and water before eating, drinking or smoking and when leaving work

Conditions for safe storage, including any incompatibilities

Technical measures	: Proper grounding procedures to avoid static electricity should be followed.
Storage conditions	: Keep only in the original container in a cool, well ventilated place away from naked flames/heat. Keep container closed when not in use. Keep in a fireproof place. Do not expose to temperatures exceeding 50°C/122°F
Incompatible products	: Strong bases. Strong acids.
Incompatible materials	: Sources of ignition. Direct sunlight.
Storage temperature	: < 50 °C
Heat-ignition	: KEEP SUBSTANCE AWAY FROM: heat sources.
Prohibitions on mixed storage	: KEEP SUBSTANCE AWAY FROM: (strong) acids.
Storage area	: Store in a cool area. Keep out of direct sunlight. Ventilation at floor level. Aboveground. Meet the legal requirements.
Special rules on packaging	: SPECIAL REQUIREMENTS: with pressure relief valve. clean. correctly labeled. meet the legal requirements.
Packaging materials	: SUITABLE MATERIAL: steel. stainless steel. monel steel. lead. aluminium. copper. tin.

Specific end use(s)

Follow Label Directions.

Section 8: Exposure Controls/ Personal Protection

Control parameters

Exposure controls

Appropriate engineering controls	: Local exhaust ventilation, vent hoods.
Personal protective equipment	: Avoid all unnecessary exposure. Gloves. Safety glasses.



Materials for protective clothing	: GIVE GOOD RESISTANCE: butyl rubber. leather. neoprene. polyethylene. PVC.
Hand protection	: Insulated gloves.

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Eye protection	: Safety glasses.
Skin and body protection	: Protective clothing.
Respiratory protection	: High vapor/gas concentration: self-contained respirator. Maintain oxygen levels above 19.5% in the workplace. Use supplied air respiratory protection if oxygen levels are below 19.5% or during emergency response to a release of this product. Wear appropriate mask.
Other information	: Do not eat, drink or smoke during use.

Section 9: Physical and Chemical Properties

Physical state	: Gas
Appearance	:
	Liquefied gas.
Molecular mass	: 66.05 g/mol
Color	: Colorless.
Odor	:
	Mild odor. Slight Ether-like odor
Odor threshold	:
	No data available
pH	:
	No data available
Relative evaporation rate (butyl acetate=1)	:
	No data available
Melting point	:
	-117 °C
Freezing point	:
	No data available
Boiling point	:
	-25 °C
Flash point	:
	< -50 °C
Critical temperature	:
	114 °C
Auto-ignition temperature	: 455 °C
Decomposition temperature	:
	No data available
Flammability (solid, gas)	:
	No data available
Vapor pressure	:
	5100 hPa
Vapor pressure at 50 °C	:
	11700 hPa
Critical pressure	: 44960 hPa
Relative vapor density at 20 °C	: 2.3
Relative density	:
	1.0 (-25 °C)
Specific gravity / density	:
	1004 kg/m ³ (-25 °C)
Solubility	: Poorly soluble in water. Soluble in organic solvents. Water: 0.54 g/100ml (0 °C)
Log Pow	:

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Log Kow	:	0.75 (Experimental value)
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosive properties	:	0.37 Pa.s (-31 °C)
Oxidizing properties	:	No data available
Explosive limits	:	No data available
		4 - 19 vol %
		112 - 518 g/m ³

Other information

VOC content	:	0 %
Gas group	:	Liquefied gas
Other properties	:	Gas/vapor heavier than air at 20°C. May generate electrostatic charges.

Section 10: Stability and Reactivity:

Reactivity

On burning: release of toxic and corrosive gases/vapours (hydrofluoric acid, carbon monoxide - carbon dioxide, carbonylfluoride).
Reacts with (some) acids.

Chemical stability

Stable under normal conditions.

Possibility of hazardous reactions

Not established.

Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

Incompatible materials

Strong acids. Strong bases.

Hazardous decomposition products

Toxic fume. Carbon monoxide. Carbon dioxide.

Section 11: Toxicological Information

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Information on toxicological effects

Acute toxicity : Not Classified

R152A (V)75-37-6

LC50 inhalation rat (mg/l)	176 mg/l/4h (Rat; Literature study)
LC50 inhalation rat (ppm)	> 437500 ppm/4h Mortality in 2/6 at 43.75% and 1/6 at 38.3%. At \geq 17.52% lethargy, laboured breathing, reduced responsiveness to sound were observed. At 6.64% only hyperaemia and shallow breathing were observed.
Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified. Based on available data, the classification criteria are not met
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified. Based on available data, the classification criteria are not met
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified. Based on available data, the classification criteria are not met
Aspiration hazard	: Not classified. Based on available data, the classification criteria are not met
Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.
Symptoms/injuries after inhalation	: EXPOSURE TO HIGH CONCENTRATIONS: Dizziness. Slight irritation. Headache. Nausea. Vomiting. Coordination disorders. Disturbances of consciousness. Disturbances of heart rate.
Symptoms/injuries after skin contact	: Frostbites.
Symptoms/injuries after eye contact	: No data available.
Symptoms/injuries after ingestion	: Not applicable.
Chronic symptoms	: No effects known.

Section 12: Ecological Information

Toxicity

Ecology - air	: Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009). Included in the list of substances which may contribute to the greenhouse effect (Regulation (EC) No 842/2006). TA-LuftKlasse 5.2.5.
Ecology - water	: Mild water pollutant (surface water). No data available on ecotoxicity.

Persistence and degradability

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Persistence and degradability Biodegradability in water: no data available.

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Bioaccumulative potential

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Log Pow 0.75 (Experimental value)
Bioaccumulative potential Low potential for bioaccumulation (Log Kow < 4).

Mobility in soil

No additional information available

Other adverse effects

Other information : Avoid release to the environment.

Section 13: Disposal Considerations

Waste treatment methods

Waste disposal recommendations : Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Refer to manufacturer/supplier for information on recovery/ recycling.

Additional information : LWCA (the Netherlands): KGA category 06. Hazardous waste according to Directive 2008/98/EC.

Ecology - waste materials : Avoid release to the environment.

Section 14: Transportation Information

In accordance with ADR / RID / IMDG / IATA / ADN

UN1030, 1,1-Difluoroethane, R152A Flammable, 2.1
US DOT (ground):
ICAO/IATA (air): UN1950, Aerosols, Flammable, 2.1, Limited Quantity
IMO/IMDG (water): UN1950, Aerosols, Flammable, 2.1, Limited Quantity
Special Provisions: DOT-SP 11516: In accordance with this special permit, this product is not subject to labeling requirements unless offered for transportation by air. This product is not subject to placarding requirements. Outside packaging must be marked with proper shipping description and 'DOT-SP 11516'

UN proper shipping name

DOT Proper Shipping Name : 1,1-Difluoroethane, R152A Flammable
Department of Transportation (DOT) Hazard Classes : 2.1 - Class 2.1 - Flammable gas 49 CFR 173.115
Hazard labels (DOT) : 2.1 - Flammable gas



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DOT Special Provisions (49 CFR 172.102) : DOT-SP 11516: In accordance with this special permit, this product is not subject to labeling requirements unless offered for transportation by air. This product is not subject to placarding requirements. Outside packaging must be marked with proper shipping description and 'DOT-SF 11516'

DOT Packaging Exceptions (49 CFR 173.xxx) : 306

DOT Packaging Non Bulk (49 CFR 173.xxx) : 304

DOT Packaging Bulk (49 CFR 173.xxx) : 314;315

Additional information

Other information : No supplementary information available.

Special transport precautions : DOT-SP 11516: In accordance with this special permit, this product is not subject to labeling requirements unless offered for transportation by air. This product is not subject to placarding requirements. Outside packaging must be marked with proper shipping description and 'DOT-SP 11516'.

Overland transport

Class (ADR) : 2 - Gases

Hazard identification number (Kemler No.) : 23

Classification code (ADR) : 2F

Hazard labels (ADR) : 2.1 - Flammable gases

Orange plates :



Tunnel restriction code (ADR) : B/D

Transport by sea

DOT Vessel Stowage Location : B - (i) The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) "On deck only" on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded.

DOT Vessel Stowage Other : 40 - Stow "clear of living quarters"

EmS-No. (1) : F-D

EmS-No. (2) : S-U

Air transport

DOT Quantity Limitations Passenger aircraft/rail : Forbidden
(49 CFR 173.27)

DOT Quantity Limitations Cargo aircraft only (49 : 150 kg CFR
175.75)

Section 15: Regulatory Information

US Federal regulations

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SARA Section 311/312 Hazard Classes

Fire hazard
Sudden release of pressure hazard
Immediate (acute) health hazard

International regulations

CANADA

R152A (75-37-6)

WHMIS Classification

Class A - Compressed Gas
Class B Division 5 - Flammable Aerosol

EU-Regulations

No additional information available

Classification according to Regulation (EC) No. 1272/2008

[CLP]

Flam.
Gas 1
H220
Press.
Gas

Full text of H-phrases: see section 16

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD] F+; R12

Full text of R-phrases: see section 16

15.2.2. National regulations

No additional information available

15.3. US State regulations

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State or local regulations

U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - Massachusetts - Right To Know List

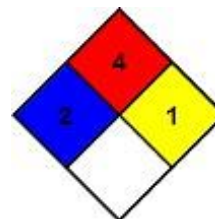
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Section 16: Other Information

Full text of H-phrases: see section 16:

Liquefied gas
H280

Gases under pressure Liquefied gas
Contains gas under pressure; may explode if heated



NFPA health hazard : 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.

NFPA fire hazard : 4 - Will rapidly or completely vaporize at normal pressure and temperature, or is readily dispersed in air and will burn readily.

NFPA reactivity : 1 - Normally stable, but can become unstable at elevated temperatures and pressures or may react with water with some release of energy, but not violently.

HMIS III Rating

Health : 2 Moderate Hazard - Temporary or minor injury may occur

Flammability : 4 Severe Hazard

Physical : 1 Slight Hazard

Personal Protection : B

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End of Safety Data Sheet