



Safety Data Sheet

R-410A

www.advancedspecialtygases.com

Section 1: Product and Company Identification

Advanced Specialty Gases
135 Catron Dr. Reno, NV 89512
775-356-5500

Product Code: R-410A

Section 2: Hazards Identification



Warning

Hazard Classification:

Gases Under Pressure

Hazard Statements:

Contains gas under pressure; may explode if heated

Precautionary Statements

Storage:

Protect from sunlight.
Store in well-ventilated place.

Section 3: Composition/Information on Ingredients

CAS #
75-10-5, 354-33-6

Chemical Substance	Chemical Family	Trade Names
--------------------	-----------------	-------------

Chemical Substance	Chemical Family	Trade Names
R-410A	refrigerants	Difluoromethane: 50% pentafluoroethane: 50%

Section 4: First Aid Measures

Skin Contact	Eye Contact	Ingestion	Inhalation	Note to Physicians
Promptly flush with water	Immediately flush with large amounts of water for at least 15 minutes	Unlikely to occur	Move to fresh air. Give artificial respiration if breathing has stopped.	Because of possible disturbances of cardiac rhythm catecholamine drugs should be used with special caution and only in situations of emergency life support.

Section 5: Fire Fighting Measures

Suitable Extinguishing Media	Products of Combustion	Protection of Firefighters
Any standard agent appropriate type of fire	Not available	<ul style="list-style-type: none"> ▪ Not available ▪ Not available ▪ Not available ▪ Self contained, NIOSH approved breathing apparatus

Section 6: Accidental Release Measures

Personal Precautions	Environmental Precautions	Methods for Containment
Wear recommended personal protective equipment	Report spills to federal and local authorities	Evacuate unprotected personnel. Remove ignition sources and shut off leak, and provide ventilation.

Methods for Cleanup	Other Information
Report spills and releases	Not available

Section 7: Handling and Storage

Handling	Storage
Store in cool, well ventilated area of low fire risk and out of direct sunlight.	Avoid breathing vapors and liquid contact with eyes, skin, or clothing. Do not puncture cylinder.

Section 8: Exposure Controls/Personal Protection

Exposure Guidelines
Not available

Engineering Controls

No specific controls are needed.

Eye Protection	Skin Protection	Respiratory Protection
Wear safety glasses in normal conditions	General work clothing and leather gloves.	Not available

General Hygiene considerations

- Avoid breathing vapor or mist
- Avoid contact with eyes and skin
- Wash thoroughly after handling and before eating or drinking

Section 9: Physical and Chemical Properties

Physical State	Appearance	Color	Change in Appearance	Physical Form	Odor	Taste
Gas at ambient temps	Clear, colorless, liquid and vapor	Colorless	Not available	Gas	Faint ethereal odor	Not available

Flash Point	Flammability	Partition Coefficient	Autoignition Temperature	Upper Explosive Limits	Lower Explosive Limits
Not applicable	Not available	Not available	Not available	Not available	Not available

Boiling Point	Freezing Point	Vapor Pressure	Vapor Density	Specific Gravity	Water Solubility	pH	Odor Threshold	Evaporation Rate	Viscosity
-48.5 deg C	Not determined	215.3 psia at 70 deg F	3.0 (Air=1)	1.08 at 21.1 deg C	Unknown	Neutral	Not available	>1 COMPARED TO: CC14 = 1	Not available

Molecular Weight	Molecular Formula	Density	Weight per Gallon	Volatility by Volume	Volatility	Solvent Solubility
72.6	CH2F2, CHF2CF3	Not available	Not available	Not available	Not available	Not available

Section 10: Stability and Reactivity

Stability	Conditions to Avoid	Incompatible Materials
Stable	Stable	Under specific conditions- freshly abraded aluminum surfaces. Chemically active metals: potassium, calcium, powdered aluminum, magnesium and zinc

Hazardous Decomposition Products	Possibility of Hazardous Reactions
Halogens, halogen acids, and possibly carbonyl halides	Will not occur

Section 11: Toxicology Information

Acute Effects

Oral LD50	Dermal LD50	Inhalation
Not available	Not available	Low in acute toxicity in animals. symptoms of asphyxiation, loss of coordination, increased pulse rate and deeper respiration may occur at low oxygen levels.

Eye Irritation	Skin Irritation	Sensitization
Liquid contact can cause severe irritation and frostbite	Irritation	Overexposure may cause dizziness and loss of concentration

Chronic Effects

Carcinogenicity	Mutagenicity	Reproductive Effects	Developmental Effects
Not available	Not available	Not available	No data

Section 12: Ecological Information

Fate and Transport

Eco toxicity	Persistence / Degradability	Bioaccumulation / Accumulation	Mobility in Environment
Fish toxicity: not available Invertebrate toxicity: not available Algal toxicity: not available Phyto toxicity: not available Other toxicity: not available	Not available	Not available	Not available

Section 13: Disposal Considerations

Comply with all federal, state, and local disposal or discharge laws.

Section 14: Transportation Information

U.S. DOT 49 CFR 172.101

Proper Shipping Name	ID Number	Hazard Class or Division	Packing Group	Labeling Requirements	Passenger Aircraft or Railcar Quantity Limitations	Cargo Aircraft Only Quantity Limitations	Additional Shipping Description
Liquefied gas, n.o.s., (Pentafluoroethane, difluoromethane)	UN3163	2.2	Not applicable	Not available	Not available	Not available	Not available

Canadian Transportation of Dangerous Goods

Shipping Name	UN Number	Class	Packing Group / Risk Group
Liquefied gas, n.o.s. (pentafluoroethane, difluoromethane)	UN3163	2.2	Not applicable

Section 15: Regulatory Information

U.S. Regulations

CERCLA Sections	SARA 355.30	SARA 355.40
Not available	Not available	Not available

SARA 370.21

Acute	Chronic	Fire	Reactive	Sudden Release
Not available	Not available	Not available	Not available	Not available

SARA 372.65

Not available

OSHA Process Safety

Not available

State Regulations

CA Proposition 65

Not available

Canadian Regulations

WHMIS Classification

Not available

National Inventory Status

US Inventory (TSCA)	TSCA 12b Export Notification	Canada Inventory (DSL/NDSL)
Listed	Not available	Not available

Section 16: Other Information

NFPA Rating

Health-2, Flammability-1, Reactivity-0

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard