

Revised date 01.08.2024

## MATERIAL SAFETY DATA SHEET □ HFC 507A

### CHEMICAL PRODUCT

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Corporate MSDS Number	: TAB-003016
Gas	: HFC 507A (100%)
Chemical Formula	: CHF <sub>2</sub> CF <sub>3</sub> / CH <sub>3</sub> CF <sub>3</sub>
Chemical Name	: Pentafluoroethane + 1,1,1-trifluoroethane
Composition	: HFC 125 (50.0%) + HFC 143a (50.0%)
CAS#	: 354-33-6 + 420-46-2
UN#	: 3163
HS Code	: 382761
Hazard	: 2.2

### COMPANY IDENTIFICATION

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TABRIGAS Egypt  
Port Said Free Zone area - Egypt  
Sunday - Thursday (9:00 - 17:00)  
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### PRODUCT USE

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Refrigerant

### TRADE NAMES & SYNONYMS

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R 507A  
HFC 507A

### HAZARDS IDENTIFICATION

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#### Emergency Overview

Misuse or intentional inhalation abuse may lead to death without warning. Vapors are heavier than air and can cause suffocation by reducing oxygen available for breathing. Rapid evaporation of the liquid may cause frostbite

#### Potential Health Effects

##### Skin

Contact with liquid or refrigerated gas can cause cold burns and frostbite.

##### Eyes

Contact with liquid or refrigerated gas can cause cold burns and frostbite.

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**Inhalation**

Misuse or intentional inhalation abuse may cause death without warning symptoms, due to cardiac effects. Other symptoms potentially related to misuse or inhalation abuse is: Anesthetic effects, Light-headedness, dizziness, confusion, in coordination, drowsiness, or unconsciousness, irregular heartbeat with a strange sensation in the chest, heart thumping, apprehension, feeling of fainting, dizziness or weakness. Vapors are heavier than air and can cause suffocation by reducing oxygen Available for breathing.

**Carcinogenicity**

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, or OSHA, as a carcinogen.

**FIRST AID MEASURES**

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**Skin contact**

In case of contact, immediately flush skin with plenty of water for at least 15 minutes. Take off all contaminated clothing immediately. Consult a physician. Wash contaminated clothing before re-use. Treat for frostbite, if necessary, by gently warming affected area.

**Eye contact**

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Consult a physician if necessary.

**Inhalation**

Remove from exposure, lie down. Move to fresh air. Keep patient warm and at rest. Artificial respiration and/or oxygen may be necessary. Consult a physician.

**Ingestion**

Is not considered a potential route of exposure.

**General advice**

Never give anything by mouth to an unconscious person. When symptoms persist or in all cases of doubt seek medical advice.

**Notes to physician**

Because of possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, that may be used in situations of emergency life support should be used with special caution.

**FIRE FIGHTING MEASURES**

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**Flammable Properties**

Flash Point : does not flash  
Lower explosion limit : Method: None per ASTM E681  
Upper explosion limit : Method: None per ASTM E681

**Fire and Explosion Hazard :**

Cylinders are equipped with pressure and temperature relief devices, but may still rupture under fire conditions. Decomposition may occur. Contact of welding or soldering torch flame with high concentrations of refrigerant can result in visible changes in the size and color of the torch flame. This flame effect will only occur in concentrations of product well above the recommended exposure limit.

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Therefore, stop all work and ventilate to disperse refrigerant vapors from the work area before using any open flames. This substance is not flammable in air at temperatures up to 100 deg. C (212 deg. F) at atmospheric pressure. However, mixtures of this substance with high concentrations of air at elevated pressure and/or temperature can become combustible in the presence of an ignition source. This substance can also become combustible in an oxygen-enriched environment (oxygen concentrations greater than that in air). Whether a mixture containing this substance and air, or this substance in an oxygen-enriched atmosphere becomes combustible depends on the inter-relationship of 1) the temperature 2) the pressure, and 3) the proportion of oxygen in the mixture. In general, this substance should not be allowed to exist with air above atmospheric pressure or at high temperatures; or in an oxygen-enriched environment. For example, this substance should NOT be mixed with air under pressure for leak testing or other purposes. Experimental data have also been reported which indicate the combustibility of this substance in the presence of certain concentrations of chlorine.

Suitable extinguishing media

: Use extinguishing measures that are appropriate to local Circumstances and the surrounding environment.

Firefighting Instructions

: In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment. Wear neoprene gloves during cleaning up work after a fire.  
Cool containers/tanks with water spray. A self-contained breathing apparatus (SCBA) is required if containers rupture and contents are released under fire conditions.  
Water runoff should be contained and neutralized prior to release.

## ACCIDENTAL RELEASE MEASURES

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NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Safeguards (Personnel)

Evacuate personnel to safe areas. Ventilate areas, especially low or enclosed places where heavy vapors might collect.

Accidental Release Measures

Should not be released into the environment.  
Avoid open flames and high temperatures. A self-contained breathing apparatus (SCBA) is required if a large release occurs.

## HANDLING AND STORAGE

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Handling (Personnel)

Avoid breathing vapors or mist. Avoid contact with skin, eyes and clothing. Provide sufficient air exchange and/or exhaust in work rooms.

Handling (Physical Aspects)

The product should not be mixed with air for leak testing or used with air for any other purpose above atmospheric pressure. Contact with chlorine or other strong oxidizing agents should also be avoided.

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**Storage**

Valve protection caps and valve cutlet threaded plugs must remain in place unless the container is secured with a valve outlet piped to the use point. Do not drag, slide, or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure-reducing regulator when connecting the cylinder to lower-pressure (>3000 PSIG) piping or systems. Never attempt to lift the cylinder by its cap. Use a check valve or trap in the discharge line to prevent hazardous backflow into the cylinder. Cylinders should be stored upright and firmly secured to prevent falling or being knocked over.

Separate full containers from empty containers. Keep at a temperature not exceeding 52°C. Do not store near combustible materials. Avoid areas where salt or other corrosive materials are present.

Storage temperature  
< 52 °C (< 126 °F)

**EXPOSURE CONTROLS/PERSONAL PROTECTION**

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**Engineering Controls**

Refrigerant concentration monitors may be necessary to determine vapor concentrations in work areas before use of torches or other open flames, or if employees are entering enclosed areas. Use sufficient ventilation to keep employee exposure below recommended limits. Local exhaust should be used when large amounts are released. Mechanical ventilation should be used in low or enclosed places.

**Personal Protective Equipment**

**Respiratory protection**

Under normal manufacturing conditions, no respiratory protection is required when using this Product.

**Hand protection**

Additional protection: Impervious gloves

**Eye protection**

Wear safety glasses or coverall chemical splash goggles. Additionally, wear a face shield where the possibility exists for face contact due to splashing, spraying, or airborne contact with this material.

**Protective measures**

A self-contained breathing apparatus (SCBA) is required if a large release occurs.

**Exposure Guidelines**

**Exposure Limit Values**

Pentafluoro ethane			
AEL *	(DUPONT)	1,000 ppm	8 & 12 hr. TWA
1, 1, 1-Trifluoroethane			
AEL *	(DUPONT)	1,000 ppm	8 & 12 hr. TWA

\* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits lower than the AEL are in effect, such limits shall take precedence.

**PHYSICAL AND CHEMICAL PROPERTIES**

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Form : Liquefied gas  
Color : colorless

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Odor	: slight, ether-like
pH	: neutral
Boiling point/boiling range	: -46.7 °C (-52.1 °F) @ 1,013.25 hPa
% Volatile	: 100 %
Vapor Pressure	: 12,826 hPa @ 25 °C (77 °F)
Specific gravity	: 1.05 @ 25 °C (77 °F)
Water solubility	: not determined
Evaporation rate	: > 1 (CCL4=1.0)

**STABILITY AND REACTIVITY**

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**Stability**

Stable at normal temperatures and storage conditions.

**Conditions to Avoid**

Avoid open flames and high temperatures.

**Incompatibility**

Alkali metals Alkaline earth metals, Powdered metals, Powdered metal salts

**Hazardous decomposition products**

Decomposition products are hazardous. This material can be decomposed by high temperatures (open flames, glowing metal surfaces, etc.) forming hydrofluoric acid and possibly carbonyl fluoride. These materials are toxic and irritating. Avoid contact with decomposition products

**Hazardous reactions**

Polymerization will not occur.

**TOXICOLOGICAL INFORMATION**

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**Pentafluoro ethane (HFC-125)**

**Dermal:**

Not applicable

**Oral:**

Not applicable

**Inhalation 4 h LC50:**

> 800000 ppm, rat

**Inhalation:**

Dog Cardiac sensitization

**Skin irritation:**

No skin irritation, not tested on animals Not expected to cause skin irritation based on an expert review of the properties of the substance.

**Eye irritation:**

No eye irritation, not tested on animals Not expected to cause eye irritation based on an expert review of the properties of the substance.

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**Skin sensitization:**

Does not cause skin sensitization. Not tested on animals Not expected to cause sensitization based on an expert review of the properties of the substance.  
There are no reports of human respiratory sensitization.

**Repeated dose toxicity:**

Inhalation rat No toxicologically significant effects were found.

**Carcinogenicity:**

Overall weight of evidence indicates that the substance is not carcinogenic.

**Mutagenicity:**

Did not cause genetic damage in animals.  
Did not cause genetic damage in cultured mammalian cells.  
Did not cause genetic damage in cultured bacterial cells.

**Reproductive toxicity:**

Evidence suggests the substance is not a reproductive toxin in animals. The information given is based on data obtained from similar substances.

**Teratogenicity:**

Animal testing showed no developmental toxicity.

**Further information:**

Cardiac sensitization threshold limit: 490000 mg/m<sup>3</sup>

**1, 1, 1-Trifluoroethane (HFC-143a)**

**Dermal:**

not applicable.

**Oral:**

not applicable

**Inhalation 4 h LC50:**

> 540000 ppm, rat Anesthetic effects

**Inhalation 4 h LC50:**

591000 ppm, rat

**Inhalation:**

Dog Cardiac Sensitization.

**Skin irritation:**

No skin irritation, not tested on animals Not expected to cause skin irritation based on an expert review of the properties of the substance.

**Eye irritation:**

No eye irritation, not tested on animals Not expected to cause eye irritation based on an expert review of the properties of the substance.

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Skin sensitization:

Not tested on animals Not expected to cause sensitization based on an expert review of the properties of the substance. There are no reports of human respiratory sensitization.

Repeated dose toxicity:

Inhalation rat No toxicologically significant effects were found.

Carcinogenicity:

Animal testing did not show any carcinogenic effects.

Mutagenicity:

Did not cause genetic damage in animals.  
Did not cause genetic damage in cultured mammalian cells.  
Did not cause genetic damage in cultured bacterial cells.

Teratogenicity:

Animal testing showed no developmental toxicity.

Further information

Cardiac sensitization threshold limit: 1040000 mg/m<sup>3</sup>

ECOLOGICAL INFORMATION

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Aquatic Toxicity

Pentafluoroethane (HFC-125)

96 h LC50:

Oncorhynchus mykiss (rainbow trout) > 81.8 mg/l The Information given is based on data obtained from similar substances.

96 h LC50:

Danio rerio (zebra fish) > 200 mg/l The information given is based on data obtained from similar substances.

96 h LC50:

Oncorhynchus mykiss (rainbow trout) 450 mg/l the information given is based on data obtained from similar substances.

72 h EC50:

Pseudokirchneriella subcapitata (green algae) > 118 mg/l the information given is based on data obtained from similar substances.

72 h EC50:

Pseudokirchneriella subcapitata (green algae) > 114 mg/l the information given is based on data obtained from similar substances.

96 h EC50:

Algae 142 mg/l the information given is based on data obtained from similar substances.

48 h EC50:

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Daphnia magna (Water flea) > 200 mg/l the information given is based on data obtained from similar substances.

48 h EC50:

Daphnia magna (Water flea) > 97.9 mg/l the information given is based on data obtained from similar substances.

1,1,1-Trifluoroethane (HFC-143a)

96 h LC50:

Oncorhynchus mykiss (rainbow trout) > 100 mg/l not applicable

48 h EC50:

Daphnia 300 mg/l

Environmental Fate

1, 1, 1-Trifluoroethane (HFC-143a)

Biodegradability: Not readily biodegradable.

DISPOSAL CONSIDERATIONS

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Waste Disposal:

Can be used after re-conditioning. Recover by distillation or remove to a permitted waste disposal facility. Comply with applicable Federal, State/Provincial, and Local Regulations.

Environmental Hazards:

Empty pressure vessels should be returned to the supplier.

TRANSPORTATION INFORMATION

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TDG_ROAD	UN number	: 3163
	Proper shipping name	: Liquefied gas, n.o.s. (Pentafluoroethane, 1, 1, 1-Trifluoroethane)
	Class	: 2.2
	Labeling No.	: 2.2
TDG_RAIL	UN number	: 3163
	Proper shipping name	: Liquefied gas, n.o.s. (Pentafluoro ethane, 1, 1, 1-Trifluoroethane)
	Class	: 2.2
	Labeling No.	: 2.2
IATA_C	UN number	: 3163
	Proper shipping name	: Liquefied gas, n.o.s. (Pentafluoro ethane, 1, 1, 1-Trifluoroethane)
	Class	: 2.2
	Labeling No.	: 2.2
IMDG	UN number	: 3163
	Proper shipping name	: Liquefied gas, n.o.s. (Pentafluoro ethane, 1, 1, 1-Trifluoroethane)

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Class: : 2.2  
Labeling No. : 2.2

**REGULATORY INFORMATION**

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**DSL Status:**

On the inventory, or in compliance with the inventory

**WHMIS Classification:**

A - Compressed Gas

**Remarks:**

One or more components of this product are subject to a Significant New Activity (SNAC) restriction under the Canadian Environmental Protection Act (CEPA).

This product has been classified under the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

End of MSDS  
(Version August 2024)

