

Revised date 01.08.2024

MATERIAL SAFETY DATA SHEET

HFO 515B

CHEMICAL PRODUCT

Corporate MSDS Number	:TAB-005007
Composition	: HFO 515B (100.0%)
Formula	: $C_3H_2F_4 + C_3HF_7$
Chemical Name	: trans-1,3,3,3-tetrafluoro-1-propene + 1,1,1,2,3,3,3-Heptafluoropropane
Composition	: HFO 1234ze (91.1%) + HFC 227ea (8.9%)
CAS #	: 29118-24-9 + 431-89-0
UN #	: 3163
HS Code	: 290351
Hazard	: 2.2

COMPANY IDENTIFICATION

TABRIGAS Egypt
Port Said Free Zone area - Egypt
Sunday - Thursday (9:00 - 17:00)
00 202 2734 22 77 / 78 / 79
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PRODUCT USE

Refrigerant

TRADE NAMES & SYNONYMS

R 515B
HFO 515B

HAZARDS IDENTIFICATION

Form	: Liquefied gas
Color	: Colorless
Color	: Slight ether - like
Classification of the substance or mixture	: GASES UNDER PRESSURE - Liquefied gas simple asphyxiate.
GHS label elements	: Hazard pictograms

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Signal word	: Warning
Hazard statements	: Contains gas under pressure; may explode if heated May cause frostbite. It may displace oxygen and cause rapid suffocation
Precautionary statements	
General	: Read and follow all Safety Data Sheets (SDS) before use. Read the label before use. Keep out of reach of children. If medical advice is needed, have a product container, and label at hand. Close the valve after each use and when empty. Use equipment rated for cylinder pressure. Do not open the valve until connected to equipment prepared for use. Use a backflow preventative device in the piping. Use only equipment of compatible materials for construction. Always keep the container in an upright position.
Prevention	: Use personal protective equipment as required.
Storage	: Protect from sunlight. Store in a well-ventilated place.
Carcinogenicity	: No component of this product at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP, IARC, or OSHA.

FIRST-AID MEASURES

Inhalation

If inhaled, immediately remove to fresh air. Keep the person calm. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Skin Contact

In case of contact, flush the area with lukewarm water. Do not use hot water. If frostbite has occurred, call a physician.

Eye Contact

In case of contact, immediately flush your eyes with plenty of water for at least 15 minutes. Call a physician.

Ingestion

Ingestion is not considered a potential route of exposure.

Notes to Physicians

THIS MATERIAL MAY MAKE THE HEART MORE SUSCEPTIBLE TO ARRHYTHMIAS. Catecholamine such as adrenaline, and other compounds having similar effects, should be reserved for emergencies and then used only with special caution.

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FIRE FIGHTING MEASURES

Suitable extinguishing media : Use extinguishing measures appropriate to local circumstances and the surrounding environment. Water mist Dry Powder Foam Carbon dioxide (CO₂)

Specific hazards during firefighting : Contents under pressure. Heating will cause pressure rise with risk of bursting Cool closed containers exposed to fire with water spray. The product is not combustible under normal conditions. However, this material can ignite when mixed with air under pressure and exposed to strong ignition sources. Do not allow run-off from firefighting to enter drains or water courses. Vapors are heavier than air and can cause suffocation by reducing oxygen available for breathing. Some risk may be expected of corrosive and toxic decomposition products. Fire may cause the evolution of:

- Hydrogen fluoride
- Carbon oxides
- Carbonyl halides

special protective equipment for firefighters : In the event of fire and explosion do not breathe fumes. Wear a self-contained breathing apparatus and protective suit. No unprotected exposed skin areas. Exposure to decomposition products may be a health hazard.

ACCIDENTAL RELEASE MEASURES

Safeguards (Personnel)
Immediately evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Wear personal protective equipment. Unprotected persons must be kept away.
Remove all sources of ignition. Avoid skin contact with leaking liquid (danger of frostbite). Ventilate the area. After release, disperses into the air.
Vapors are heavier than air and can cause suffocation by reducing oxygen available for breathing. Avoid accumulation of vapors in low areas.
Unprotected personnel should not return until air has been tested and determined safe.

Environmental precautions
Prevent further leakage or spillage if safe to do so.
The product evaporates readily. Prevent spreading over a wide area (e.g. by containment or oil barriers).

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Methods and materials for containment and cleaning up
Do not direct water spray at the point of leakage.
Allow to evaporate.

HANDLING AND STORAGE

Handling (Personnel)

Handle with care.
Avoid inhalation of vapor or mist.
Do not get in the eyes, on the skin, or clothing.
Wear personal protective equipment.
Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50 °C.
Follow all standard safety precautions for handling and use of compressed gas cylinders.
Use authorized cylinders only.
Protect cylinders from physical damage.
Do not puncture or drop cylinders, or expose them to open flame or excessive heat.
Do not pierce or burn, even after use. Do not spray on a naked flame or any incandescent material.
Do not remove the screw cap until immediately ready for use.
Always replace the cap after use.

Advice on protection against fire and explosion

Do not spray on a naked flame or any incandescent material.
Keep away from direct sunlight.
Fire or intense heat may cause violent rupture of packages.
Vapors may form explosive mixtures with air.
The product is not easily combustible.

STORAGE

Keep containers tightly closed in a cool, well-ventilated place.
Keep away from direct sunlight.
Protect cylinders from physical damage.
Store away from incompatible substances.
Keep only in the original container at a temperature not exceeding 50°C

EXPOSURE CONTROLS/PERSONAL PROTECTION

Protective measures

Do not breathe vapor.
Avoid contact with skin, eyes, and clothing.
Ensure that eyewash stations and safety showers are close to the workstation location.

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Engineering measures

Local exhaust

Eye protection

Goggles

Hand protection

Protective gloves

Skin and body protection

Impervious clothing Wear cold insulating gloves/ face shield/ eye protection

Respiratory protection

In case of insufficient ventilation wear suitable respiratory equipment. Wear a positive-pressure-supplied air respirator.

PHYSICAL AND CHEMICAL PROPERTIES

Form	: Liquefied gas
Color	: Colorless
Odor	: Slight, ether-like
PH	: Note Neutral
Melting point	: No data available
Boiling Point	: No data available
Flash Point	: Not applicable
Evaporation rate	: Not applicable
Lower explosion limit	: No data available
Upper explosion limit	: No data available
Vapor Pressure	: 440 kPa@ 21 ° C (70 °F)
Partition coefficient nocturnal/water	: No data available

STABILITY AND REACTIVITY

Chemical Stability

Stable under normal conditions.

Possibility of hazardous reactions

Hazardous polymerization does not occur.

Conditions to avoid

Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50 °C.

Can form a combustible mixture with air at pressures above atmospheric pressure. Do not mix with oxygen or air above atmospheric pressure.

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Incompatible materials

Reactions with alkali metals.

Hazardous decomposition products

Carbon oxides

Carbonyl halides

Hydrogen fluoride

Halogenated compounds

TOXICOLOGICAL INFORMATION

Acute oral toxicity

Note: Not applicable study technically not feasible

Acute inhalation toxicity trans-1,3,3,3-Tetrafluoroprop-1-ene

100000 ppm

Species : Mouse

Note : Acute (4-Hour) Inhalation Toxicity Screening Study (mouse): No lethality at >100,000 ppm.

LC50 : > 207000 ppm

Exposure time: 4 h

Species : Rat

Acute dermal toxicity

Note: no data available study technically not feasible

Skin irritation trans-1,3,3,3-Tetrafluoroprop-1-ene

Species : Rabbit

Result : No skin irritation

Method : OECD Test Guideline 404

Eye irritation

Cardiac sensitization

Species : dogs

Note : Did not cause sensitization on laboratory animals.

Repeated dose toxicity

Trans-1,3,3,3-Tetrafluoroprop-1-ene

Species : Rat

Geno toxicity in vitro trans-1,3,3,3-Tetrafluoroprop-1-ene

Test Method : Chromosome aberration test in vitro

Cell type : Human lymphocytes

Result : negative

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Geno toxicity in vivo trans-1,3,3,3-Tetrafluoroprop-1-ene

Test Method : Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)
Species : Mouse
Cell type : Micronucleus
Application
Route : Inhalation
Result : negative

Teratogenicity trans-1,3,3,3-Tetrafluoroprop-1-ene

Species : Rabbit
Method : Prenatal Developmental Inhalation Toxicity Study
Note : Did not show teratogenic effects in animal experiments.

Further information

Note: Excessive exposure may cause central nervous system effects including drowsiness and dizziness. Excessive exposure may also cause cardiac arrhythmia. Rapid evaporation of the liquid may cause frostbite

ECOLOGICAL INFORMATION

Trans-1,3,3,3-Tetrafluoroprop-1-ene

NOEC : > 117 mg/l
Exposure time : 96 h
Species : Cyprians carpi (Carp)

Toxicity to daphnia and other aquatic invertebrates

Trans-1,3,3,3-Tetrafluoroprop-1-ene
EC50 : > 160 mg/l
Exposure time : 48 h
Species : Daphnia magna (Water flea)

Toxicity to algae trans-1,3,3,3-Tetrafluoroprop-1-ene

Growth inhibition
NOEC : > 170 mg/l
Exposure time : 72 h
Species : Algae

Biodegradability trans-1,3,3,3-Tetrafluoroprop-1-ene

aerobic Result: Not readily biodegradable.

DISPOSAL CONSIDERATIONS

Disposal methods

Observe all Federal, State, and Local Environmental regulations.

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TRANSPORTATION INFORMATION

DOT

UN/ID No. : UN 3163
Proper Shipping Name : (trans-1,3,3,3-Tetrafluoroprop-1-ene, 1,1,1,2,3,3,3-Heptafluoropropane)
Hazard Class : 2.2
Packing group : 2.2

IATA

UN/ID No. : UN 3163
Proper Shipping Name : (trans-1,3,3,3-Tetrafluoroprop-1-ene, 1,1,1,2,3,3,3-Heptafluoropropane)
Hazard Class : 2.2
Packing group (cargo aircraft) : 200

IMDG

UN/ID No. : UN 3163
Proper Shipping Name : (trans-1,3,3,3-Tetrafluoroprop-1-ene, 1,1,1,2,3,3,3-Heptafluoropropane)
Hazard Class : 2.2
EmS Number : F-C, S-V
Marine pollutant : No

REGULATORY INFORMATION

Inventories US. Toxic Substances Control Act on TSCA Inventory

Australia. Industrial Chemical (Notification and Assessment) Act On the inventory, or in compliance with the inventory

Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL) All components of this product are on the Canadian DSL

Japan. Kashin-Hou Law List Not in compliance with the inventory

Korea. Existing Chemicals Inventory (KECI) On the inventory, or in compliance with the inventory

China. Inventory of Existing Chemical Substances (IECSC) On the inventory, or in compliance with the inventory

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OTHER INFORMATION

	HMIS	HMIS
Health hazard	1	2
Flammability	1	1
Physical Hazard	0	0
Instability		

Hazard rating and rating systems (e.g. HMIS® III, NFPA): This information is intended solely for the use of individuals trained in the particular system.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information, and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal, and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process unless specified in the text. The final determination of suitability of any material is the sole responsibility of the user. This information should not constitute a guarantee for any specific product properties

End of MSDS
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HFO