

Revised date 01.08.2024

MATERIAL SAFETY DATA SHEET

HFC 227ea

CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Corporate MSDS Number : TAB-003007
 Composition : HFC 227ea (100%)
 Chemical Formula : C₃HF₇
 Chemical Name : 1,1,1,2,3,3,3 - Heptafluoropropane
 CAS# : 431-89-0
 UN# : 3296
 HS Code : 290346
 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
info@tabrigas.com
www.tabrigas.com

PRODUCT USE

Refrigerant
 Propellant/Blowing Agent
 Fire Extinguishing Agent

TRADE NAMES & SYNONYMS

R227ea
 HFC-227ea
 FM-200

PHYSICAL AND CHEMICAL PROPERTIES

GENERAL	The colorless, odorless gas
BOILING POINT	-16.4 °C / 3 °F
VAPOR PRESSURE (@ 21 °C / 70 °F)	58.80 PSIG
VAPOUR DENSITY (AIR =1)	6.04
WATER-REACTIVE	NO
SPECIFIC GRAVITY (H ₂ O=1)	1.46
PERCENT VOLATILE (by volume)	N/A
EVAPORATION RATE (Butyl acetate=1)	N/A
VISCOSITY (@ 20 °C / 68 °F)	N/A
MELTING POINT	-131 °C / -204 °F

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WATER SOLUBILITY (V/V @ 20 °C / 68 °F)	260 mg/L
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FIRE & EXPLSION HAZARDS

FLASH POINT	N/A
FLAMMABLE LIMIT (in air, % by volume)	N/A
AUTO - IGNITION TEMPRETURE	N/A
EXTINGISHING MEDIA	All are suitable. While product is non - flammable and extinguishes fires at sufficient concentration, can undergo thermal decomposition if involved in fires where quantity of product is insufficient to extinguish. Thermal decomposition products may be toxic or corrosive.
UNUSUAL FIRE AND EXPLOSION HAZARDS	Container rupture possible if pressure and temperature relief valves should fail
SPECIAL FIRE FIGHTING PROCEDURES	Employer water spray from a safe distance to prevent container rupture. If containers should rupture, use self-contained breathing apparatus. Product is non - flammable, but denser than air, posing asphyxiation risk. Thoroughly ventilate affected area to remove product and any decomposition products before allowing re - entry

REACTIVITY DATA

STABILITY	Stable
CONDITIONS TO AVOID	N/A
HAZARDS POLYMERIZATION	N/A
INCOMPLETE MATERIALS	Powered metals such as aluminum, magnesium or zinc, strong alkaline agents, oxidizing agents is reducing agents
HAZARDOUS DECOMPOSITION PRODUCTS	Thermal decomposition products may include hydrogen fluoride, carbon monoxide and carbon dioxide

HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE	N/A
POTENTIAL EXPOSURE ROUTES	Inhalation Yes Eye contact Yes Skin contacts Yes Ingestion Yes
SIGNS AND SYPTOMS OF OVEREXPOSURE	Inhalation of excessive concentrations in air may induce symptoms of hypoxia (headache, nausea, dizziness, loss of consciousness) or cardiac sensitization (irregular pulse or arrhythmia). Product is a cryogenic gas. Direct skin contact at point of release may cause symptoms of frostbite due to evaporative cooling (cold, white, discolored skin that in severe cases may exhibit blistering)
MEDICAL CONDITIONS POTENTIALLY AGGRAVATED BY EXPOSURE	Pre - existing cardiac, respiratory or CNS disorders may be exacerbated by overexposure. Epinephrine or

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	sympathomimetic drugs may increase susceptibility to cardiac irregularities upon overexposure
CARCINOGENICITY	NTP Program No IARC Monographs No OSHA No ACGIH No Other No
MUTAGENICITY	S. typhimurium assay No Mouse lymphoma assay No Mouse micronuclei assay No
LC ₅₀	>C. 800,000 ppm
EMERGENCY & FIRST AID PROCEDURES	Inhalation "Move to fresh air, artificial respiration if not breathing. Administer oxygen if breathing is labored. Seek medical attention. Eye contact "Flush / irrigate with fresh water. Seek medical attention Skin contact "Flush / irrigate (spray) with water. Apply sterile dressing as necessary. Seek medical attention for symptoms of frostbite Ingestion "N/A

SPILL / LEAK PROCEDURES & SPECIAL PRECAUTIONS

HANDLING & STORAGE PRECAUTIONS	Store in a cool, dry, well-ventilated area separates from incompatible materials. Protect containers from mechanical damage. Follow fire equipment manufacturers' instructions for the operation, inspection, maintenance, and repair of portable extinguishers and fixed extinguishing systems
OTHER PRECAUTIONS	Prohibit back feed into containers,
RELEASE OR SPILL PROCEDURES	Evacuate and ventilate the affected area. Prohibit general entry into areas where high concentrations may exist, particularly confined or poorly ventilated areas. Keep in mind that this product is denser than air and that concentrations will be higher at lower levels (sewers, basements, or pits). Trained personnel should use self-contained breathing apparatus when entering areas where high concentrations may exist
WASTE DISPOSABLE	The product can be reclaimed unless contaminated. Contact the distributor to arrange reclamation, otherwise, disposable should be under applicable law, generally incineration at a qualified facility with an appropriate scrubber and other emission control technology

SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION	NIOSH/MSHA-approved self-contained breathing apparatus for entry into areas where high concentrations may exist
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VENTILATION	Passive ventilation (windows, doors, etc.) is generally adequate for small areas. Mechanical ventilation for control of large areas and storage or filling facilities
DERMAL PROTECTION	Lined, neoprene gloves for handling liquid products
EYE PROTECTION	Shatterproof chemical splash goggles when handling liquid or working on pressurized containers
OTHER PROTECTIVE EQUIPMENT	Clothing to minimize contact with liquid products or at potential points of release
OTHER PROTECTIVE PRACTICES	Employ prudent confined space entry and related procedures (confirm equipment is free of product and has been ventilated, etc.) As with all chemical products, wash thoroughly after handling and wash contaminated clothing before re-use

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM RATING

HEALTH = 1	FLAMMABILITY = 0	REACTIVITY = 0
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HAZRD INDEX:

0 = MINIMAL HAZARD, 1 = SLIGHT HAZARD, 2 = MODERATE HAZARD,
3 = SERIOUS HAZARD & 4 = SEVERE HAZARD

SHIPPING INFORMATION "U.S. DOT GENERAL"

DOT SHIPPING NAME	HEPTAFLUOROPROPANE
DOT ID NUMBER	UN 3296
DOT HAZARD CLASS	2.2 NON - FLAMMABLE, COMPRESSED GAS
PACKING GROUP	N/A
PACKING INSTRUCTIONS	200
SPECIAL PROVISIONS	T50
NON - BULK PACKING	304
PASSENGER AIR / RAIL LIMIT	75 KG / Package
AIR CARGO LIMIT	150 KG / Package
VESSEL STOWAGE	A
REPORTABLE QUANTITY	None specified
LABEL	NON - FLAMMABLE GAS
PACKAGING EXCEPTIONS	306
BULK PACKING	314 / 315
OTHER STOWAGE	N/A

AIR TRANSPORT "ICAO OR IATA"

PROPER SHIPPING NAME	HEPTAFLUOROPROPANE
ID NUMBER	UN 3296
HAZARD CLASS	2.2 NON - FLAMMABLE, COMPRESSED GAS
SUBSIDIARY RISK	N/A
PACKING GROUP	N/A
PACKING INSTRUCTIONS	200
PACKING INSTRUCTIONS CARGO	200

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SPECIAL PROVISIONS	N/A
AIR PASSANGER LIMIT	75 KG / Package
AIR CARGO LIMIT	150 KG / Package
LABEL	NON - FLAMMABLE GAS

WATER - IMDG

PROPER SHIPPING NAME	HEPTAFLUOROPROPANE
ID NUMBER	UN 3296
HAZARD CLASS	2.2 NON - FLAMMABLE, COMPRESSED GAS
SUBSIDIARY RISK	N/A
PACKING GROUP	N/A
MEDICAL / FIRST AID GUIDE	N/A

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End of MSDS
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