



## Refrigerant 508B

### 1. PRODUCT AND COMPANY IDENTIFICATION

#### Company

Arkema Inc.  
900 First Avenue  
King of Prussia, Pennsylvania 19406

#### Fluorochemicals

Customer Service Telephone Number: (800) 245-5858  
(Monday through Friday, 8:30 AM to 5:30 PM EST)

#### Emergency Information

Transportation: CHEMTREC: (800) 424-9300  
(24 hrs., 7 days a week)  
Medical: Rocky Mountain Poison Center: (866) 767-5089  
(24 hrs., 7 days a week)

#### Product Information

Product name: Refrigerant 508B  
Synonyms: Not available  
Molecular formula: Mixture  
Chemical family: Hydrofluorocarbon  
Product use: Refrigerant fluid

### 2. HAZARDS IDENTIFICATION

#### Emergency Overview

Color: Clear - colourless  
Physical state: gas  
Form: Liquefied gas  
Odor: Ether-like (slightly)

**WARNING!**  
**HIGH PRESSURE GAS.**  
**LIQUID AND GAS UNDER PRESSURE.**  
**OVERHEATING OR OVERPRESSURIZING MAY CAUSE GAS RELEASE OR VIOLENT CYLINDER BURSTING.**  
**MAY DECOMPOSE ON CONTACT WITH FLAMES OR EXTREMELY HOT METAL SURFACES TO PRODUCE TOXIC AND CORROSIVE PRODUCTS.**  
**VAPOR REDUCES OXYGEN AVAILABLE FOR BREATHING AND IS HEAVIER THAN AIR.**  
**MAY CAUSE EYE AND RESPIRATORY TRACT IRRITATION.**  
**MAY CAUSE FROSTBITE.**  
**MAY CAUSE HEADACHE, NAUSEA, DIZZINESS, DROWSINESS, LOSS OF CONSCIOUSNESS.**  
**MAY CAUSE EFFECTS ON:**  
**HEART**

#### Potential Health Effects

Primary routes of exposure:  
Inhalation and skin contact.



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**Signs and symptoms of acute exposure:**

Liquid : Rapid evaporation of the liquid may cause frostbite. Vapor: May cause eye irritation. May cause irritation of respiratory tract. Vapor is heavier than air and can cause suffocation by reducing oxygen available for breathing. Central nervous system effects: headache, nausea, dizziness, drowsiness, loss of consciousness. Stress induced heart effects: irregular heart beat, rapid heart beat, (extent of injury depends on severity of exposure).

**Skin:**

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

**Inhalation:**

Practically nontoxic. (based on components)

**Eyes:**

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

**Medical conditions aggravated by overexposure:**

Heart disease or compromised heart function.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No.	Wt/Wt	OSHA Hazardous
Ethane, hexafluoro-	76-16-4	> 50 - < 70 %	Y
Methane, trifluoro-	75-46-7	> 30 - < 50 %	Y

The substance(s) marked with a "Y" in the Hazard column above, are those identified as hazardous chemicals under the criteria of the OSHA Hazard Communication Standard (29 CFR 1910.1200).

This material is classified as hazardous under Federal OSHA regulation.

### 4. FIRST AID MEASURES

**Inhalation:**

If inhaled, remove victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**Skin:**

If on skin, flush exposed skin with lukewarm water (not hot), or use other means to warm skin slowly. Get medical attention if frostbitten by liquid or if irritation occurs. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse.

**Eyes:**

Immediately flush eye(s) with plenty of water. Get medical attention if irritation persists.

**Ingestion:**

Ingestion is not applicable - product is a gas at ambient temperatures.

**Notes to physician:**

Do not give drugs from adrenaline-ephedrine group.



**5. FIRE-FIGHTING MEASURES**

**Flash point** Not applicable

**Auto-ignition temperature:** Not determined

**Lower flammable limit (LFL):** not applicable

**Upper flammable limit (UFL):** not applicable

**Extinguishing media (suitable):**

Use extinguishing measures to suit surroundings.

**Protective equipment:**

Fire fighters and others who may be exposed to products of combustion should wear full fire fighting turn out gear (full Bunker Gear) and self-contained breathing apparatus (pressure demand / NIOSH approved or equivalent). Fire fighting equipment should be thoroughly decontaminated after use.

**Further firefighting advice:**

Cool closed containers exposed to fire with water spray.

Water mist should be used to reduce vapor concentrations in air.

Closed containers of this material may explode when subjected to heat from surrounding fire.

**Fire and explosion hazards:**

May decompose on contact with flames or extremely hot metal surfaces to produce toxic and corrosive products. Liquid and gas under pressure, overheating or overpressurizing may cause gas release and/or violent cylinder bursting.

Container may explode if heated due to resulting pressure rise.

Some mixtures of HCFCs and/or HFCs, and air or oxygen may be combustible if pressurized and exposed to extreme heat or flame.

When burned, the following hazardous products of combustion can occur:

Carbon oxides

Carbonyl halides

hydrofluoric acid

**6. ACCIDENTAL RELEASE MEASURES**

**In case of spill or leak:**

Eliminate all ignition sources. Evacuate area of all unnecessary personnel. Use Halogen leak detector or other suitable means to locate leaks or check atmosphere. Prevent further leakage or spillage if you can do so without risk. Keep upwind. Evacuate enclosed spaces and disperse gas with floor-level forced-air ventilation. Avoid breathing leaked material. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits.





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### Engineering controls:

Investigate engineering techniques to reduce exposures below airborne exposure limits or to otherwise reduce exposures. Provide ventilation if necessary to minimize exposures or to control exposure levels to below airborne exposure limits (if applicable see above). If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment.

### Respiratory protection:

Avoid breathing gas. Where airborne exposure is likely or airborne exposure limits are exceeded (if applicable, see above), use NIOSH approved respiratory protection equipment appropriate to the material and/or its components (full facepiece recommended). Consult respirator manufacturer to determine appropriate type equipment for a given application. Observe respirator use limitations specified by NIOSH or the manufacturer. For emergency and other conditions where there may be a potential for significant exposure or where exposure limit may be significantly exceeded, use an approved full face positive-pressure, self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. Respiratory protection programs must comply with 29 CFR § 1910.134.

### Skin protection:

Wear appropriate chemical resistant protective clothing and chemical resistant gloves to prevent skin contact. Consult glove manufacturer to determine appropriate type glove material for given application. Rinse immediately if skin is contaminated. Wash contaminated clothing and clean protective equipment before reuse. Wash thoroughly after handling.

### Eye protection:

Where eye contact may be likely, wear chemical goggles and have eye flushing equipment available.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Color:</b>	Clear - colourless
<b>Physical state:</b>	gas
<b>Form:</b>	Liquefied gas
<b>Odor:</b>	Ether-like (slightly)
<b>pH:</b>	not determined
<b>Density:</b>	1.15 g/cm <sup>3</sup> (77 °F (25 °C))
<b>Vapor pressure:</b>	27,428 mmHg (50 °F (10 °C))
<b>Vapor density:</b>	3.2 kg/m <sup>3</sup> (77 °F (25 °C)) 760 mmHg (Air = 1.0)
<b>Boiling point/boiling range:</b>	-126 °F (-88 °C)
<b>Solubility in water:</b>	Slightly soluble
<b>% Volatiles:</b>	100 %

**10. STABILITY AND REACTIVITY****Stability:**

This material is chemically stable under normal and anticipated storage, handling and processing conditions.

**Materials to avoid:**

Finely divided metals (aluminium, magnesium, zinc...)  
Strong oxidizing agents  
Alkali metals  
Alkaline earth metals  
Strong bases

**Conditions / hazards to avoid:**

Heat.

**Hazardous decomposition products:**

Thermal decomposition giving toxic and corrosive products :  
hydrofluoric acid  
Carbon monoxide  
Carbon dioxide (CO<sub>2</sub>)  
Carbonyl halides

**11. TOXICOLOGICAL INFORMATION**

Data on this material and/or its components are summarized below.

**Data for Ethane, hexafluoro- (76-16-4)****Acute toxicity****Inhalation:**

Practically nontoxic. (rat) 4 h LC<sub>50</sub> > 4,520 mg/l (800000 ppm).

**Sensitization:**

Cardiac sensitization not observed. Inhalation. (dog) (20 %)

**Repeated dose toxicity**

Repeated inhalation administration to rat / No adverse systemic effects reported.

**Genotoxicity****Assessment in Vitro:**

No genetic changes were observed in laboratory tests using: bacteria

**Human experience****Skin contact:**

Frostbite. (liquid or aerosol)

**Human experience****Eye contact:**

Frostbite. (liquid or aerosol)

**Data for Methane, trifluoro- (75-46-7)**

**Acute toxicity****Inhalation:**

Practically nontoxic. (rat) 2 h LC0 > 573 mg/l.

Practically nontoxic. (rat) 4 h ALC > 1,898 mg/l.

**Sensitization:**

Causes cardiac sensitization. (cat) irregular heart beat, rapid heart beat, in some cases, sudden death

**Repeated dose toxicity**

Repeated exposure by inhalation administration to rat and guinea pig / No adverse effects reported.

Repeated exposure by inhalation administration to dog / No adverse effects reported.

**Genotoxicity****Assessment in Vitro:**

No genetic changes were observed in laboratory tests using: bacteria

Both positive and negative responses for genetic changes were observed in laboratory tests using: animal cells

**Genotoxicity****Assessment in Vivo:**

No genetic changes were observed in laboratory tests using: mice

**Developmental toxicity**

Exposure during pregnancy. inhalation (rat) / No birth defects were observed.

**Human experience****Inhalation:**

Central nervous system: Loss of reflexes, central nervous system depression, narcosis. (studied using human volunteers)

**12. ECOLOGICAL INFORMATION****Chemical Fate and Pathway**

Data on this material and/or its components are summarized below.

**Data for Methane, trifluoro- (75-46-7)****Octanol Water Partition Coefficient:**

log Pow = 0.64 (measured)

**Ecotoxicology**

Data on this material and/or its components are summarized below.

**Data for Methane, trifluoro- (75-46-7)****Aquatic toxicity data:**



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Practically nontoxic. semi-static test / Oncorhynchus mykiss 96 h LC50 = 450 mg/l

### 13. DISPOSAL CONSIDERATIONS

#### Waste disposal:

Do not vent the container contents, or product residuals, to the atmosphere. Recover and reclaim unused contents or residuals as appropriate. Recovered/reclaimed product can be returned to an approved certified reclaimer or back to the seller depending on the material. Completely emptied disposable containers can be disposed of as recyclable steel. Returnable cylinders must be returned to seller. Dispose of in accordance with federal, state and local regulations. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits. Note: Chemical additions to, processing of, or otherwise altering this material may make this waste management information incomplete, inaccurate, or otherwise inappropriate. Furthermore, state and local waste disposal requirements may be more restrictive or otherwise different from federal laws and regulations.

### 14. TRANSPORT INFORMATION

#### US Department of Transportation (DOT)

UN Number : 1078  
Proper shipping name : Refrigerant gases, n.o.s.  
Technical name : (Hexafluoroethane, Trifluoromethane)  
Class : 2.2  
Marine pollutant : no

#### International Maritime Dangerous Goods Code (IMDG)

UN Number : 1078  
Proper shipping name : REFRIGERANT GAS, N.O.S.  
Technical name : (HEXAFLUOROETHANE, TRIFLUOROMETHANE)  
Class : 2.2  
Marine pollutant : no

### 15. REGULATORY INFORMATION

#### Chemical Inventory Status

EU. EINECS	EINECS	Conforms to
US. Toxic Substances Control Act	TSCA	The components of this product are all on the TSCA Inventory.
Australia. Industrial Chemical (Notification and Assessment) Act	AICS	Conforms to
Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL). (Can. Gaz. Part II, Vol. 144)	DSL	All components of this product are on the Canadian DSL list.
Japan. Kashin-Hou Law List	ENCS (JP)	Conforms to





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Korea. Existing Chemicals Inventory (KECI)	KECI (KR)	Conforms to
Philippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act	PICCS (PH)	Conforms to
China. Inventory of Existing Chemical Substances	IECSC (CN)	Conforms to
New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand	NZIOC	Conforms to

**United States – Federal Regulations**

**SARA Title III – Section 302 Extremely Hazardous Chemicals:**

The components in this product are either not SARA Section 302 regulated or regulated but present in negligible concentrations.

**SARA Title III - Section 311/312 Hazard Categories:**

Acute Health Hazard, Sudden Release of Pressure Hazard

**SARA Title III – Section 313 Toxic Chemicals:**

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) - Reportable Quantity (RQ):**

The components in this product are either not CERCLA regulated, regulated but present in negligible concentrations, or regulated with no assigned reportable quantity.

**OSHA Regulated Carcinogens (NTP, IARC, OSHA Listed):**

**NTP:**

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

**IARC:**

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**OSHA:**

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**United States – State Regulations**



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**New Jersey Right to Know**

<u>Chemical Name</u>	<u>CAS-No.</u>
Methane, trifluoro-	75-46-7

**Pennsylvania Right to Know**

<u>Chemical Name</u>	<u>CAS-No.</u>
Methane, trifluoro-	75-46-7

Ethane, hexafluoro-	76-16-4
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**Pennsylvania Right to Know – Environmentally Hazardous Substance(s)**

<u>Chemical Name</u>	<u>CAS-No.</u>
Methane, trifluoro-	75-46-7

**California Prop. 65**

This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive defects.

**16. OTHER INFORMATION**

**Latest Revision(s):**

Revised Section(s):	Initial entry
Reference number:	000000063255
Date of Revision:	09/27/2011
Date Printed:	09/27/2011

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