



MATERIAL SAFETY DATA SHEET
HOT SHOT,™ R-414B

CHEMICAL PRODUCT / COMPANY IDENTIFICATION

Material Identification

Product Use: Refrigerant

Chemical Name: Chemical Family - Halogenated Hydrocarbons

ASHRAE Designation: R-414B

Other Identifying Data: This product is a direct replacement for CFC-12, HFC-134a, and R-500. No modification of stationary equipment design is necessary. Follow EPA regulations for use in mobile air conditioning systems.

Company Identification

MANUFACTURER/DISTRIBUTOR

ICOR, International, Inc.
10640 East 59th Street, P.O. Box 36626
Indianapolis, IN 46236

PHONE NUMBERS

Product Information: 800-497-6805
Emergency: 800-457-4280

COMPOSITION / INFORMATION ON INGREDIENTS

Components

Material	CAS Number	%
* CHLORODIFLUOROMETHANE	75-45-6	50
* 1-CHLORO-1,1-DIFLUOROETHANE	75-68-3	9.5
* 1-CHLORO-1,2,2,2-TETRAFLUOROETHANE	2837-89-0	39
* ISOBUTANE	68476-85-7	1.5

* Regulated as a Toxic Chemical under Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.

HAZARDS IDENTIFICATION

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***** EMERGENCY OVERVIEW *****
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* Overexposure may cause dizziness and loss of concentration. At higher levels, central
* nervous system depression and cardiac arrhythmia may result. Vapors displace air and
* may cause asphyxiation in confined spaces. Volatile liquid with faint sweetish odor.
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Potential Health Effects:

EYE: Liquid contact may cause frostbite. Mist may irritate.

SKIN: Irritation can result from a defatting action on tissue. Liquid contact may cause frostbite

INGESTION: Unlikely route of exposure. Should it result, discomfort in the gastrointestinal tract would occur.

INHALATION: Overexposure may cause dizziness and loss of concentration. At higher levels, central nervous system depression and cardiac arrhythmia may result.

CHRONIC (CANCER) INFORMATION: None of the components are designated as carcinogens by IARC, NTP, OSHA, or ACGIH.

TERATOLOGY (BIRTH DEFECT) INFORMATION: Mixture not expected to be teratogenic based on components.

REPRODUCTIVE INFORMATION: No hazard expected.

FIRST AID MEASURES

First Aid

INHALATION: Remove to fresh air. If not breathing, give artificial respiration, administer oxygen and call a physician. DO NOT give epinephrine or similar drugs.

SKIN CONTACT: Warm the area gradually by flushing with plenty of water. Get medical attention if there is evidence of tissue damage.

EYE CONTACT: Irrigate eyes with running water for at least 15 minutes. Get medical attention.

INGESTION: Do not induce vomiting. Get medical attention.

FIRE FIGHTING MEASURES

Flammable Properties

Not flammable.

Fire and Explosion Hazards: Sealed containers exposed to elevated temperatures may rupture explosively.

Extinguishing Media: The choice of extinguishing media depends on the surrounding materials.

Fire Fighting Instructions: Keep personnel removed and upwind of fire. Wear self-contained breathing apparatus. Wear full protective equipment. Cool tank/container with water spray. Fight fire from a distance, heat may rupture containers.

ACCIDENTAL RELEASE MEASURES

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

Remove or extinguish ignition or combustion sources. Evacuate enclosed spaces until gas is dispersed. Keep upwind. Stop the release of gas, if possible without risk. Disperse the gas with floor level forced-air ventilation. Exhaust vapors outdoors. Contain the spill by building a dike using absorbent material. Collect the remainder of the spill with absorbent material and place into a drum approved for waste disposal or recovery. Wash contaminated clothing before use.

HANDLING AND STORAGE

Handling (Personnel): Use insulated or lined butyl gloves, face shield or goggles, and impervious clothing.

Handling (Physical Aspects): Good general ventilation is usually adequate, but local ventilation may be needed if gas is vented to the atmosphere.

Storage: DO not store cylinders in direct sun or expose to heat above 120 deg. F. Keep the cylinder valve tightly closed when not in use and store in a well ventilated area.

CONTROL MEASURES: PERSONAL PROTECTION

Engineering Controls

Keep container tightly closed.

Observe label precautions.

Personal Protective Equipment

EYE/FACE PROTECTION: Goggles or face shield

RESPIRATORS: Use if exposure level is above PEL.

PROTECTIVE CLOTHING: Impervious

Exposure Guidelines

Exposure Limits

CHLORIDOFLUOROMETHANE

PEL (OSHA): 1,000 ppm

TLV (ACGIH): 1,000 ppm

ISOBUTANE

PEL (OSHA): 1,000 ppm

TLV (ACGIH): 1,000 ppm

1-CHLORO-1,2,2,2-TETRAFLUOROETHANE

WEEL (AIHA): 1,000 ppm

1-CHLORO-1,1-DIFLUOROETHANE

WEEL (AIHA): 1,000 ppm

PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: -29.8 deg. F

Vapor Density (Air = 1): >1

Solubility in Water: Very slight

Specific Gravity: 1.1

Ignition Temperature: 1170 deg. F

Physical Form: Volatile liquid with faint, sweet odor

STABILITY AND REACTIVITY

Chemical Stability

Stability: Normally stable.

Incompatibility with Other Materials: Strong oxidants and freshly scraped aluminum, alkali metals, and alkali earth metals (sodium, magnesium, etc.) may cause exothermic reaction. The aluminum in refrigeration systems contains an oxide/chloride coating to prevent reaction with metal.

Conditions to avoid: Intense heat and open flame.

Polymerization: Will not occur.

Hazardous decomposition products: Hydrochloric acid, hydrofluoric acid, chlorine, fluorine, possibly phosgene, carbon dioxide, and carbon monoxide.

Other Hazards: Cylinders of used product may contain oil as well as refrigerant. A liquid leak or venting during a fire will produce a cloud of oil mist that is very flammable.

PHYSICAL AND CHEMICAL INFORMATION

No information for mixture but toxicity based on that of components.

Immediate Health Hazard: Greatest hazard is contact with escaping liquid which can cause frostbite and damage to exposed tissue. Gas may displace oxygen and cause light headedness, eye irritation and suffocation.

Long Term Health Hazard: Exposure to high concentrations may lead to cardiac irregularities, unconsciousness or death.

Carcinogenicity: None of the components are designated as carcinogens by IARC, NTP, OSHA , or ACGIH.

ECOLOGICAL INFORMATION

Ozone Depletion Potential: 0.034

ENVIRONMENTAL INFORMATION

Waste Disposal

Recycle or reclaim if possible. Reclaimed material may be incinerated, if the toxic and corrosive combustion products (HF and HCl) are handled appropriately. Incinerate material in accordance with Federal, State/Provincial and Local requirements. Do not incinerate in closed containers.

TRANSPORTATION INFORMATION

Shipping Information

DOT

Proper Shipping Name: LIQUEFIED GAS, N.O.S.
Hazard Class: 2.2
DOT Identification: UN3163
Hazard Label: 2.2

PRODUCT PREPARATION

U.S. Federal Regulations

TSCA Inventory Status : Reported/Included.

GENERAL INFORMATION

STATE RIGHT-TO-KNOW LAWS

WARNING: SUBSTANCES KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER: None known.

WARNING: SUBSTANCES KNOWN TO THE STATE OF CALIFORNIA TO CAUSE BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM: None known.

DISCLAIMER

These data are offered in good faith as typical values and not as a product specification. No warranty, either expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate. These recommendations are not intended to supersede state, local of use safety codes and procedures. In the event of any question please call Product Information, phone number 1-800-497-6805.