	SPECIFICATION	Rev :	000
	ORAFON R 507A	Date :	02-09-2011

Product Name : ORAFON R 507A

Packaging Size : 11.3 kgs/Dac, 50 kgs/Cylinder, 740 and 790 kgs/Ton Tank

TEST ITEM	REPORTING UNITS	SPECIFICATION
Purity	% by weight	99.5 % min.
Nominal Weight / Composition	% by weight	R125 : 50.0 - 0.5 / +1.5 % R125 : 50.0 - 1.5 / +0.5%
Non-Condensable Gases	% by volume	1.5 % max.
Water Content	ppm by weight	10 ppm max.
Acidity	ppm by weight	1.0 ppm max.
Evaporating Residue	ppm by weight / % by volume	100 ppm. / 0.01 % max
Particulars / Solids	Visually clean to pass	pass
Chloride	ppm by weight	pass

Reference Material : GB/T 7375-87, GB/T 7376-87, GB/T 7373-87, GB/T 18826-2002, ARI 700-2004, ANSI/ASHARE Standard 34-1997

ORANOSS CO.,LTD.

Rosemarie Penaso

ORANOSS CO.,LTD.
127/24 Panjathani Tower, 19th Floorl, Non-si Rd., Chong Non-si, Yannawa, Bangkok 10120 Thailand
Tel : +66 (0) 2105 0499 (Auto) Fax : +66 (0) 2105 0490

MATERIAL SAFETY DATA SHEET

ORAFON R 507A

1. PRODUCT AND COMPANY INDENTIFICATION

Product Name:	Refrigerant Gas (R507A)
Synonyms:	HFC-507A
Supplier:	ORANOSS CO.,LTD.
Address:	127/24 Panjathani Tower, 19th Fl.Non-si Rd.,Chong non-si, Yannawa, Bangkok 10120 Thailand.
Emergency Phone:	Tel: +66 (0) 2105 0499 Fax : +66 2105 0490 (Office hours)
Chemical Name:	Pentafluoroethane, 1,1,1-Trifluoroethane
Chemical Family:	Hydrofluorocarbons
Chemical Formula:	CHF_2CF_3/CH_2F_2

2. COMPOSITION/INFORMATION ON INGREDIENTS

Material Name	CAS No.	Typical Wt %
Pentafluoroethane	354-33-6	50
1,1,1-Trifluoroethane	420-46-2	50

3. HAZARDS IDENTIFICATION

Potential Health Effects

Eyes: Eye contact with liquid may include eye irritation with discomfort, tearing, or blurring of vision.

Skin: Skin contact with liquid can cause frostbite. Prolonged overexposure may cause de-fatting or dryness ofthe skin.

Inhalation: Inhalation of high concentration of vapour is harmful and may cause heart irregularities, unconsciousness or death. Intentional misuse of deliberate in halation may cause death without warning. Vapour reduces oxygen available for breathing and is heavier than air. Higher exposures may lead to temporary alteration of the heart's electrical activity with irregular pulse, palpitations, or inadequate circulation. Gross exposure may be fatal.

Individuals with pre-existing diseases of the central nervous of cardiovascularsystem may have increased susceptibility to the toxicity of excessive exposures.

Inhalation may include temporary nervous systems depression, with anesthetic effects such as dizziness, headache, confusion, incordination and loss of consciousness.

4. FIRST AID MEASURES

Eyes:	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.
Skin:	In case of contact, flush area with lukewarm water. Do not use hot water. Call a physician.
Inhalation:	If inhaled, immediately remove to fresh air. Keep person clam. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
Ingestion:	Not a probable rout, however in case of accidental ingestion, call a physician.

Notes to Physicians: This material may make heart more susceptible to Arrhythmias. Catecholamine such as adrenaline and other compounds having similar effects should be reserved for emergencies and use only with special caution.

5. FIRE-FIGHTING MEASURES

Flammable Properties:

Upper, Flammable Limits in Air (% by volume):	Not applicable
Lower, Flammable Limits in Air (% by volume):	Not applicable
Flash point:	No flash point
Auto-ignition Temperature:	Not Determined

Contact of welding or soldering torch flame with high concentrations of refrigerant can result in visible changes in the size and colour of torch flames. This flame effect will only occur in concentrations of product well above the recommended exposure limit, therefore stop all work and ventilate to disperse refrigerant vapour from work area before using any open flame.

R-507A is not flammable at temperatures up to 100°C (212°F) at atmospheric pressure. However, mixtures of R-507A with high concentrations of air at elevated pressure can become combustible at ambient temperature. As the temperature of the mixture is increased, lower pressure (but still greater than atmospheric pressure) can create the same effect. Therefore, R507A should not be mixed with air under pressure for leak testing or other purposes. In general, R-507A should not be used or allowed to exist with high concentrations of air above atmospheric pressure.

Unusual Fire and Explosion Hazards:
Containers may rupture under fire conditions. Decomposition may occur.

Extinguishing Media:
Use extinguishing media appropriate to surrounding fire conditions.

Fire Fighting Instructions:
Use water spray or fog to cool containers. Self -contained breathing apparatus (SCBA) is required if cylinders rupture or contents are released under fire conditions. Water runoff should be contained and neutralized prior to release.

6. ACCIDENTAL RELEASE MEASURES

Safeguards (Personnel):
Review fire fighting measures and handling (personnel) sections before proceeding with clean up. Use appropriate personal protective equipment during clean up.

Accidental Release Measures:
Ventilate area, especially low or enclosed places where heavy vapours might collect. Remove open flames. Use self-contained breathing apparatus (SCBA) for large spills or releases.

7. HANDLING AND STORAGE

Handling (Personnel):
Avoid breathing vapors. Avoid liquid contact with eyes and skin. Use sufficient ventilation to keep employee exposure below recommended limits. R404A should not be mixed with air for leak testing. In general it should not be allowed to for material to be present with high concentrations of air above atmospheric pressure. Contact with chlorine or other strong oxidizing agents should also be avoided.

Storage:
Keep in a clean, dry area. Do not heat above 52°C (125°F).

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls:
Avoid breathing vapours. Avoid contact with skin or eyes. Use with sufficient ventilation to keep employee exposure below recommended exposure limit. Local exhaust should be used if large amounts are released. Mechanical ventilation should be used in low or enclosed places.

Personal Protective Equipment: Impervious gloves should be used to avoid prolonged or repeated exposure. Chemical splash goggles should be available for use as needed to prevent eye contact. Under normal manufacturing conditions, no respiratory protection is required when using this product. Self contained breathing apparatus (SCBA) is required if large release occurs.

Exposures Guidelines:

Pentafluoroethane	ACGIH (TLV)	None Established
	OSHA (PEL)	None Established
	AIHA (WEEL)	1000 ppm, 4900mg/m^3, 8 hour TWA
1,1,1-trifluoroethane	AIHA (WEEL)	1000 ppm, 3400mg/m^3, 8 hour TWA

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Data

Appearance	Clear, Colourless liquid and vapour
Odor	Slightly ethereal
pH	N/A
Boiling Point	-46.736°C ~ -46.735°C @ 760mmHg
Freezing Point	Not Established
Vapour Pressure	184.9psia @ 25°C (77°F), Saturated
Vapour Density	3.50 @ 25°C (77°F) (Air=1)
Specific Gravity	1.079 @ 25°C (77°F) (H_2O=1)
Solubility in Water	Unknown
Molecular Weight	98.86

10. STABILITY AND REACTIVITY

Chemical Stability:
This material is chemically stable under specific conditions, storage shipment and/or use. However avoid open flames and high temperatures.

Incompatibility with other materials:
In compatible with alkali or alkaline earth metals - powdered Al, Zn. Be, etc

Decomposition:
This material can be decomposed in high temperatures (open flames, glowing metal surfaces, etc) thus, forming hydrochloric and hydrofluoric acids, and possibly carbonyl halides. These materials are toxic and irritating. Contact should be avoided.

Polymerization: Will not occur

11. TOXICOLOGICAL INFORMATION

Pentafluoroethane:
Inhalation, follow by intravenous injection of epinephrine to simulate stress reactions, resulted in cardiac sensitization in dogs. Following repeated inhalation exposure, no adverse effects were observed in rats. No birth defects were noted in the offspring of rats or rabbits exposed by inhalation during pregnancy. No genetic changes were observed in standard tests using animal cells, whole animals or bacteria. Single exposure (acute) studies indicate:
Inhalation - Practically non-toxic to rats (4-hr LC50 > 800,000ppm)

1,1,1-trifluoroethane:
Inhalation, follow by intravenous injection of epinephrine to simulate stress reactions, resulted in cardiac sensitization in dogs. Following repeated inhalation exposure, lung irritant effects including mild bronchitis and pneumonia were observed in rats and guinea pigs. No adverse effects were observed in long-term oral studies with rats. No birth defects were noted in the offspring of rats or rabbits exposed by inhalation during pregnancy. No genetic changes were observed in standard tests using animal cells or whole animals. Both positive and negative results have been reported in tests using bacteria. Single exposure (acute) studies indicate:

Inhalation - Practically non-toxic to rats (4-hr LC50 > 540,000ppm)

12. ECOLOGICAL INFORMATION

Eco toxicological Information
Aquatic toxicity: 1, 1, 1-trifluoroethane – the compound is very low to slightly toxic. 96 hr. LC50, rainbow trout :> 40mg/l

13. DISPOSABLE CONSIDERATIONS

Waste Disposal
Comply with local regulations. Reclaim by distillation or remove to a permitted waste facility.

14. TRANSPORTATION INFORMATION

Shipping Information
DOT/IMO

Proper Shipping Name	:	Liquefied Gas, NOS (1, 1, 1-trifluoroethane, Pentafluoroethane)
DOT Name	:	Liquefied Gas NOS
IMO Class (Hazard Class)	:	2.2
UN Number	:	3163
DOT/IMO Label	:	Non-Flammable Gas

15. REGULATORY INFORMATION

Hazard Categories under SARA Title III Rules (40CFR Part 370)

Acute	: Yes
Chronic	: No
Fire	: No
Reactivity	: No
Pressure	: Yes

16. OTHER INFORMATION

The information in this Material Safety Data Sheet only concerns the above-mentioned product and does not relate to use with other product(s) or in any process. This information is to our best present knowledge correct and complete and is given in good faith but without warranty. It remains the user's own responsibility to ensure that the information is appropriate and correct for his special use of this product.

ORANOSS CO., LTD.

Rosemari. Canelas

.....

ORANOSS CO.,LTD.
127/24 Panjathani Tower, 19th Floor, Non-si Rd., Chong Non-si, Yannawa, Bangkok 10120 Thailand
Tel : +66 (0) 2105 0499 (Auto) Fax : +66 (0) 2105 0490