



Material Safety Data Sheet

R -417A

CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Material Identification

Corporate MSDS Number : TAB-00127

Product Use

Refrigerant

Trade names and Synonyms

R-417A
ISCEON® MO59

Company Identification

TABRIGAS EGYPT – PACKAGER / DISTRIBUTOR

COMPOSITION/INFORMATION ON INGREDIENTS

Components

Material	CAS Number	%
1, 1, 1, 2-Tetrafluoroethane (HFC-134a)	811-97-2	50
Pentafluoroethane	354-33-6	46, 6
Butane	106-97-8	3.4

HAZARDS IDENTIFICATION

Rapid evaporation of the liquid may cause frostbite.

Vapors are heavier than air and can cause suffocation by reducing oxygen available for breathing.

FIRST AID MEASURES

General advice:

Never give anything by mouth to an unconscious person when symptoms persist or in all cases of doubt seek medical advice.

Inhalation

Remove from exposure, lie down. Artificial respiration and/or oxygen may be necessary. Consult a physician.

Skin contact

Take off all contaminated clothing immediately. Flush area with lukewarm water.
Do not use hot water. If frostbite has occurred, call a physician.

Eye contact

Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Get medical attention.

Ingestion

Is not considered a potential route of exposure.

Notes to physician

Treatment: Do not give adrenaline or similar drugs.

FIRE FIGHTING MEASURES

Specific hazards during firefighting:

Pressure build-up

Special protective equipment for fire-fighters:

In the event of fire, wear self-contained breathing apparatus.

Further information:

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Cool containers / tanks with water spray.

ACCIDENTAL RELEASE MEASURES

Personal precautions:

Evacuate personnel to safe areas. Ventilate the area.

Environmental precautions:

Should not be released into the environment.

Methods for cleaning up:

Evaporates.

HANDLING AND STORAGE

Handling**Advice on safe handling:**

Avoid breathing vapors or mist. Avoid contact with skin, eyes and clothing.

Provide sufficient air exchange and/or exhaust in work rooms.

Advice on protection against fire and explosion:

No special protective measures against fire required.

Storage**Requirements for storage areas and containers:**

Keep container tightly closed in a dry and well-ventilated place. Store in original container.

Advice on common storage:

No materials to be especially mentioned.

Storage temperature:

< 52 °C2A

 EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Type Form of exposure	Control Parameters	Update	Basis
1,1,1,2-Tetrafluoroethane	811-97-2	TWA	4 240 mg/m ³ 1 000 ppm	2007	EH40 WEL
Butane	106-97-8	TWA	1 450 mg/m ³ 600 ppm	2007	EH40 WEL
		STEL	1 810 mg/m ³ 750 ppm	2007	EH40 WEL

Engineering measures

Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

Respiratory protection

For rescue and maintenance work in storage tanks use self-contained breathing apparatus. Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.

Hand protection

Heat insulating gloves

Eye protection

Safety glasses additionally wear a face shield where the possibility exists for face contact due to splashing, spraying or airborne contact with this material.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice.

 PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL AND CHEMICAL PROPERTIES

Form	: Liquefied gas,
Color	: colorless,
Odor	: slight, ether-like,
pH	: neutral
Boiling point/boiling range	: -41, 8 °C at 1 013 hPa
Flash point	: does not flash
Vapor pressure	: 9 720 hPa at 25 °C
Density	: 1, 2 g/cm ³ at 20 °C, (as liquid)
Density	: 0, 0044 g/cm ³ at 25 °C (1 013 hPa)
Water solubility	: 1, 2 g/l at 25 °C
Relative vapor density	: 3, 92

STABILITY AND REACTIVITY

Conditions to Avoid

The product is not flammable in air under ambient conditions of temperature and pressure. When pressurized with air or oxygen the mixture may become flammable. Certain mixtures of HCFCs or HFCs with chlorine may become flammable or reactive under certain conditions.

Incompatibility

Alkali metals Alkaline earth metals, Powdered metals, Powdered metal salts

Hazardous decomposition products

Hydrogen halides, carbon dioxide (CO₂), Carbon monoxide, fluorocarbons, carbonyl halides

Hazardous reactions

Stable under recommended storage conditions.

TOXICOLOGICAL INFORMATION

Acute inhalation toxicity

Pentafluoroethane :

LC₅₀/ 4 h/ rat :

> 769 000 ppm

Skin irritation:

Rapid evaporation of the liquid may cause frostbite.

Repeated dose toxicity

Pentafluoroethane :

Inhalation rat

No toxicologically significant effects were found.

Mutagenicity assessment

Pentafluoroethane:

Did not cause genetic damage in cultured bacterial cells. Did not cause genetic damage in cultured mammalian cells. Did not cause genetic damage in animals.

Carcinogenicity assessment:

Did not show carcinogenic effects in animal experiments.

Toxicity to reproduction assessment:

Did not show mutagenic or teratogenic effects in animal experiments.

Human experience:

Excessive exposures may affect human health, as follows:

Inhalation

Severe shortness of breath, Irregular cardiac activity, narcosis

ECOLOGICAL INFORMATION

Toxicity to fish

1, 1, 1, 2-Tetrafluoroethane (R134a) :

LC50 / 96 h/ Oncorhynchus mykiss (rainbow trout): 450 mg/l

Aquatic toxicity

1, 1, 1, 2-Tetrafluoroethane (R134a) :

/ EC50/ 48 h/ Daphnia: 980 mg/l

Ozone depletion potential: 0

Global warming potential (GWP): 2 235

DISPOSAL CONSIDERATIONS

Product:

Can be used after re-conditioning.

Contaminated packaging:

Empty pressure vessels should be returned to the supplier.

TRANSPORTATION INFORMATION

ADR	Class	: 2
	Classification Code	: 2A
	HI No:	: 20
	UN-No	: 1078
	Labeling No.	: 2.2
	Proper shipping name	: Refrigerant gas, n.o.s. (1, 1, 1, 2 Tetrafluoroethane, Pentafluoroethane)
IATA_C	Class	: 2.2
	UN-No	: 1078
	Labeling No.	: 2.2
	Proper shipping name	: Refrigerant gas, n.o.s. (1, 1, 1, 2 Tetrafluoroethane, Pentafluoroethane)
IMDG	Class	: 2.2
	UN-No	: 1078
	Labeling No.	: 2.2
	Proper shipping name	: Refrigerant gas, n.o.s. (1, 1, 1, 2 Tetrafluoroethane, Pentafluoroethane)

REGULATORY INFORMATION

Labeling according to EC Directives

Special labeling of certain Mixtures :



Safety data sheet available for professional user on request. Contains fluorinated greenhouse gas covered by the Kyoto Protocol. 1, 1, 1, 2- TetrafluoroethanePentafluoroethane

Not a hazardous substance or mixture according to EC-directives 67/548/EEC or 1999/45/EC.

End of MSDS