Revised date 01.08.2024

MATERIAL SAFETY DATA SHEET
HCFC 406A

CHEMICAL PRODUCT

Corporate MSDS Number	: TAB-002006
Composition	: HCFC 406A (100%)
Formula	: $CHClF_2$ + CH_3CClF_2 + C_4H_{10}
Chemical Name	: Chlorodifluoromethane + 1-Chloro-1,1-Difluoroethane + ISO Butane
CAS#	: 75-45-6 + 75-68-3 + 75-28-5
UN#	: 1078
HS Code	: 382474
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

TRADE NAMES & SYNONYMS

R-406A
HCFC 406A

HAZARDS IDENTIFICATION

Presents an insignificant hazard to human health.
In case of decomposition, releases dangerous products

FIRST-AID MEASURES

Eye contact

On the advice of the ophthalmologist

Skin contact

Usual treatment of burns

Ingestion

None

FIRE FIGHTING MEASURES

Common extinguishing methods

In case of fire in close proximity, all means of extinguishing are acceptable. Inappropriate extinguishing methods No restriction.

Specific hazards

Non-flammable. Formation of dangerous gas/vapors in case of decomposition. Gas/vapor combustion is possible in the presence of air in very particular conditions.

Protective measures in case of intervention

Evacuate all non-essential personnel

In all cases wear a self-contained breathing apparatus when near or intervention and wear acid resistant suit

After intervention proceed to clean the equipment (take a shower, remove clothing carefully, clean and check).

Intervention only by capable personnel who are trained and aware of the hazards of the product.

Other precautions

If safe to do so, remove the exposed containers, or cool with large quantities of water.

After the fire, ventilate and clean the rooms before re-entry.

ACCIDENTAL RELEASE MEASURES

Precautions

Respect the protection measures given in Section (firefighting measures) Local ventilation. If safe to do so, without exposing the personnel, try to stop the spillage. Avoid materials and products that are incompatible with the product.

Clean up methods

Let the product evaporate. Prevent the product from entering sewers or confined places.

Precautions for the protection of the environment

Avoid discharges into the environment (atmosphere, etc.)

HANDLING AND STORAGE

Handling

Operate in a well-ventilated area.
Prevent any product decomposition vapors from contacting hot spots.
Prevent any product decomposition vapors from electric arc action (post-welding).
Use only containers that are compatible with the substance.
Keep away from sources of ignition and heat.
Keep away from reactive substances.

Storage

In a ventilated, cool area.
Keep away from heat sources.
Keep away from reactive substances

PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: Pressurized liquefied gas
Color	: Colorless
Odor	: Odorless
Freezing point	: No data
Boiling point/range (1013mbars)	: Between -32 to -23 °C
Flash point	: No data
Flammability	: No flammability limit in air.
Remark	: Nonflammable mixture, but in case of leak of liquefied gas, the liquid phase can ignite if the concentration is> 60% in weight of R142b.
Auto-flammability	: - 632 to 635 °C.
Vapor Pressure	: 5.62 bar temperature 20 °C. - 12.45 bar temperature 50 °C.
Specific gravity	: (D25/4) = 1.13
Vapor Density (air = 1)	: > 3 temperature 20 °C.
Solubility Water	: 4.9 g/l. - Soluble in most organic solvents
pH	: Neutral
Partition coefficient P (n-octanol/water)	: 1.08 Test Substance: Data relative to R22
Decomposition temperature	: 96 °C. Test Substance: Data relative to R22
Oxidizing properties	: Not applicable
Critical temperature	: 114 °C.
Critical pressure	: 45.8 bar.

STABILITY AND REACTIVITY

Stability

Stable under certain conditions (see below). Decomposition produces dangerous gases, upon contact with flames or hot metallic surfaces.

Conditions to Avoid

Heat/sources of heat.

Materials to avoid

Metallic powders.
Alkaline-earth metals.
Alkaline metals and their alloys

Hazardous decomposition products

Hydrogen fluoride.
Hydrochloric acid.
Phosgene.
Fluor phosgene.

Other Information Contact with strong bases or alkaline materials may provoke violent reactions or explosions. The vapor is heavier than air and disperses at ground level.

TOXICOLOGICAL INFORMATION

Acute Toxicity

The oral route, LD50,	: is not applicable.
Dermal route, LD50	: not applicable.
Inhalation, LC50, 4 hour(s), rat	: >= 21.9% v/v air.
Test Substance	: Data relative to R22 / R142b

Irritation

Rabbit, slightly irritant (skin).
Test Substance Data relative to R22.
Rabbit, slightly irritant (eyes).
Test Substance Data relative to R22.

Sensitization

Guinea Pig, non-sensitizing (skin).
Test Substance Data relative to R22.

Chronic toxicity

Inhalation, after a single exposure, dog, cardiac sensitization following adrenergic stimulation. Test Substance: Data relative to R22 / R142b. Inhalation, after prolonged exposure, rat, no toxic effect. Test Substance: Data relative to R142b.

Inhalation, after prolonged exposure, rat, target organ: salivary glands, 5% v/v air, carcinogenic

Effect.
Test Substance: Data relative to R22.

Inhalation, after prolonged exposure, mouse, no carcinogenic effect. Test Substance: Data relative to R22

No carcinogenic, or teratogenic effects. Test Substance: Data relative to R142b.

Inhalation, rat, Target organ: eyes, 5% v/v air, teratogenic effect Test Substance: Data relative to R22.

In vitro, ambiguous mutagenic effect. Test Substance: Data relative to R142b.

In vivo, no mutagenic effect. Test Substance: Data relative to R142b.

No mutagenic effect. Test Substance:
Data relative to R22
Data relative to R22 / R142b.

Comments

Not hazardous in normal conditions of handling and use

ECOLOGICAL INFORMATION

Acute Eco toxicity

Fishes, peculiar reticulate, LC50, 96 hour(s), 220 mg/l Test substance: Data relative to R142b

Crustaceans, daphnia magna, EC 50 48 hour(s), 160 mg/l Test substance: Data relative to R142b

Chronic Eco toxicity

Result: no data

Mobility

Air, Henry's law constant (H) between 15 to 26 kPa.m3/mol
Result: considerable volatility.
Conditions: 20 °C / calculated value.
Test Substance: Data relative to the mixture R22 / R142b

Water, evaporation, t (100%) = 3 days (s)
Conditions: 20° C/saturated solution
Test Substance: Data relative to R22
Water, evaporation, t 1/2 = 3 hour(s)
Conditions: calculated value from mathematical model/river
Test Substance: Data relative to R142b.
Soil / sediments, absorption, log KOC between 1.25 to 2
Conditions: calculated value.
Test Substance: Data relative to R22/R42b.

Abiotic degradation

Air, indirect photo-oxidation, t 1/2 between 10 to 15 years (s).
Conditions: sensitizer, OH radical.
Degradation's products: carbon dioxide/hydrochloric acid/hydrogen fluoride.
Test Substance: Data relative to the mixture R22/R142b
Air, photolysis, ODP between 0.055 to 0.065.
Result: limited effect on stratospheric ozone.
Reference value for CFC 11: ODP = 1.
Test Substance: Data relative to the mixture R22/R142b.
Air, greenhouse effect, GWP between 0.36 and 0.42.
Reference value for CFC 11: GWP = 1
Test Substance: Data relative to the mixture R22/R142b.
Water/soil, hydrolysis, t 1/2 between 25 to 40 years (s).
Result: non-significant hydrolysis.
Conditions: pH 8/25 °C.
Test Substance: Data relative to R22
Water/soil, hydrolysis, t 1/2 > 10000 year(s).
Result: non-significant hydrolysis.
Conditions: calculated value
Test Substance: Data relative to R142b.

Biotic degradation

Aerobic, test: ready biodegradability/closed bottle, degradation = 0% 28 day (s).
Result: non-readily biodegradable.
Test Substance: Data relative to R22
Aerobic, test: ready biodegradability/modified STURM, degradation = 5% 28 day(s).
Result: non-readily biodegradable.
Test Substance: Data relative to R142b

Potential for bioaccumulation

Bio concentration: log Po/w - 1.08.
Result: non-bio accumulable.
Test Substance: Data relative to R22

Bio concentration: Aquatic organisms, BCF = 42
Result: non-bio accumulable.
Conditions: calculated value.
Test Substance: Data relative to R142b

Comments

The product is persistent in the air (atmospheric lifetime: 14 years).
The product is not significantly hazardous for the aquatic environment as: considerable volatility no bioaccumulation

DISPOSAL CONSIDERATIONS

Waste treatment:

Comply with local and national regulations.
Contact A-Gas Australia for recycling information.

Packaging treatment:

To avoid treatments, as far as possible, use dedicated containers.

REGULATORY INFORMATION

UN Number	: 1078
Dangerous Goods Class & Subsidiary Risk	: 2.2 NON-FLAMMABLE GAS
Hazchem Code	: 2RE
Poisons Schedule	: None allocated
Transport EPG Card	: 2C2 Emergency Guide

End of MSDS
(Version August 2024)


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