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| Octafluorocyclobutane (RC318) | | MTG095 |

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

| | |
|----------------------|-------------------------------|
| Trade name | Octafluorocyclobutane (RC318) |
| Chemical description | Octafluorocyclobutane |
| CAS N° | 115-25-3 |
| CE N° | 204-075-2 |
| Index N° | - |
| Registration n° | Unavailable |
| Chemical formula | C ₄ F ₈ |

1.2. Relevant identified uses of the substance or mixture and uses advised against

| | |
|--------------------------|--|
| Relevant identified uses | Industrial and professional Test gas/Calibration gas Use as refrigerant Laboratory use Contact supplier for more information on uses |
| Uses advised against | Consumer use not recommended |

1.3. Details of the supplier of the safety data sheet

| | |
|------------------------|---|
| Company identification | MULTIGAS Route de l'Industrie 102 CH-1564 Domdidier |
| Phone number | +41 (0) 26 676 94 94 |
| E-mail address | info@multigas.ch |

1.4. Emergency telephone numbers

145 (Toxicology Centre Zurich) or +41 (0) 44 251 51 51
 +41 (0) 26 676 94 94 (Multigas)

SECTION 2: Hazards identification


2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Physical hazards Gases under pressure : Liquefied gas

H280

For the complete H-sentences texts mentioned in that chapter, refer to Section 16

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2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms



GHS04

Signal word

Warning

Hazard statements

H280

Contains gas under pressure; may explode if heated

Precautionary statements

P410+403

Protect from sunlight. Store in a well-ventilated place

2.3. Other hazards

None

SECTION 3: Composition/information on ingredients

3.1. Substances

| Name | Product identifier | Concentration | Classification |
|-------------------------------|---|---------------|-------------------------|
| Octafluorocyclobutane (RC318) | (CAS-No.) 115-25-3 (EC-No.) 204-075-2 (EC Index-No.) --- (Registration-No.) -- | ≤ 100% | Press. Gas (Liq.), H280 |

For the complete H-sentences texts mentioned in that chapter, refer to Section 16

Contains no other components or impurities which will influence the classification of the product

3.2. Mixtures

Not established

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice

See a doctor. Show this safety data sheet to the attending physician

In case of inhalation

In case of inhalation, remove the person from the contaminated area. In case of respiratory arrest, give artificial respiration. See a doctor

In case of skin contact

No adverse effects expected

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In case of eyes contact

No adverse effects expected

In case of ingestion

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. See a doctor

4.2. Most important symptoms and effects, both acute and delayed

In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. Refer to section 11

4.3. Indication of any immediate medical attention and special treatment needed

None

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Water spray or water mist. Dry powder. Carbon dioxide. Foam

Unsuitable extinguishing media

Do not use water jet to extinguish

5.2. Special hazards arising from the substance or mixture

Specific hazards

In case of fire or excessive heat, hazardous combustion products may be produced
 Exposure to fire may cause containers to rupture/explode

Hazardous combustion products

In case of fire or excessive heat, hazardous combustion products may be produced such as : carbon monoxide, hydrogen fluoride, carbonyl fluoride

5.3. Additional information

Cool endangered receptacles with water spray jet from a protected position

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures


Avoid breathing vapours, spray mists or gases
 Provide adequate ventilation
 Evacuate personnel to a safe place
 Personal protective equipment, see section 8

6.2. Environmental precautions

-

6.3. Methods and material for containment and cleaning up

Provide effective ventilation

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6.4. Reference to other sections

See also sections 8 and 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

For precautions, see section 2.2

7.2. Conditions for safe storage, including any incompatibilities

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

Content under pressure

7.3. Specific end use(s)

None

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Components with occupational exposure limits

| Component | CAS N° | Exposure value type | Control parameter | Source |
|-------------------------------|----------|---------------------|-------------------|--------------------------------------|
| Octafluorocyclobutane (RC318) | 115-25-3 | TWA | - | No occupational exposure limit value |
| | | | - | |
| | | OEL | - | |
| | | | - | |

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Provide adequate general and local exhaust ventilation

Gas detectors should be used when asphyxiating gases may be released

8.2.2. Individual protection measures, e.g. personal protective equipment

Eye/face protection

Wear goggles and a face shield when transfilling or breaking transfer connections. Standard EN 166

Skin / hand protection

Wear protective gloves when handling gas cylinders. Standard EN 388- Protective gloves against mechanical hazards

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Respiratory protection

Self-contained breathing apparatus (SCBA) or positive pressure air mask must be used in oxygenated atmospheres. Standard EN 137 - Self-contained compressed air device with a full face mask

8.2.3. Environmental exposure controls

-

SECTION 9: Physical and chemical properties
9.1. Information on basic physical and chemical properties
Appearance

- **Physical state at 20°C / 101.3kPa** Gas
- **Colour** Colourless

Odour No data available

Odour threshold No data available

pH No data available

Melting point / Freezing point -40.2°C

Boiling point -6.4°C

Flash point No data available

Evaporation rate No data available

Flammability (solid, gas) No data available

Explosive limits No data available

Vapour pressure [20°C] 2.7 bar

Vapour pressure [50°C] 6.6 bar

Vapour density No data available

Relative density, liquid (water=1) 1.6

Relative density, gas (air=1) 6.9

Water solubility 140 mg/l

Partition coefficient No data available

n-octanol/water (Log Kow)
Auto-ignition temperature No data available

Decomposition temperature No data available


Viscosity No data available

Explosive properties No data available

Oxidising properties No data available

9.2. Other information
Molar mass 200 g/mole

Critical temperature [°C] 115°C

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Relative density, gas

Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level

SECTION 10: Stability and reactivity

10.1. Reactivity

No reactivity hazard other than the effects described in sub-sections below

10.2. Chemical stability

Stable under recommended storage conditions

10.3. Possibility of hazardous reactions

No data available

10.4. Conditions to avoid

No data available

10.5. Incompatible materials

No reaction with any common materials in dry or wet conditions
For additional information on compatibility refer to ISO 11114

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced

SECTION 11: Toxicological information

11.1. Chemical safety assessment

| | |
|---|-------------------|
| Acute toxicity | No data available |
| Skin corrosion/irritation | No data available |
| Serious eye damage/irritation | No data available |
| Respiratory or skin sensitisation | No data available |
| Germ cell mutagenicity | No data available |
| Carcinogenicity | No data available |
| Reproductive toxicity | No data available |
| STOT-single exposure – Target organ(s) | No data available |
| STOT-repeated exposure | No data available |
| Ingestion hazard | No data available |

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SECTION 12: Ecological information

12.1. Toxicity

Assessment No data available

12.2. Persistence and degradability

No data available

12.3. Bioaccumulative potential

No data available

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

PBT / vPvB assessment is not available because the chemical safety assessment is not required / is not conducted

12.6. Other adverse effects

Contains fluorinated greenhouse gases
 When discharged in large quantities may contribute to the greenhouse effect

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product Must not be released into the atmosphere
 Burn in a chemical incinerator equipped with an afterburner and scrubber
 Return to the supplier the product not consumed in its original container


Contaminated container Return to the supplier the product not consumed in its original container

OMoD Code 14 06 01
 Solvent, refrigerant and aerosol propellant or organic foam wastes:
 Chlorofluorocarbons, HCFCs, HFCs

SECTION 14: Transport information

14.1. UN number

| Transport par road/rail ADR / RID | Transport by sea IMDG | Transport by air IATA |
|--------------------------------------|--------------------------|--------------------------|
| 1976 | 1976 | 1976 |

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14.2. UN proper shipping name

| Transport par road/rail ADR / RID | Transport by sea IMDG | Transport by air IATA |
|---|---|---|
| Octafluorocyclobutane (Refrigerant gas RC 318) | Octafluorocyclobutane (Refrigerant gas RC 318) | Octafluorocyclobutane (Refrigerant gas RC 318) |

14.3. Transport hazard class(es)

Labelling



ADR/RID
IMDG
IATA

2.2 : Non-flammable, non-toxic gases

14.4. Packing group

ADR/RID
IMDG
IATA

Not established

14.5. Environmental hazards

ADR/RID

None

IMDG

None

ICAO-TI / IATA-DGR

None

14.6. Special precautions for user

No data available

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable


SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of Regulation (CE) No. 1907/2006

15.2. Chemical safety assessment

A CSA has not yet been carried out

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SECTION 16: Other information

| | |
|-----------------------------------|--|
| Indication of changes | Revised safety data sheet in accordance with commission regulation (EU) No 2015/830 |
| Abbreviations and acronyms | <p>ADR : European Agreement concerning the International Carriage of Dangerous Goods by Road</p> <p>CAS : Chemical Abstract Service number (USA)</p> <p>CLP : Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008</p> <p>CSA : Chemical Safety Assessment</p> <p>EIGA : European Industrial Gases Association</p> <p>EINECS : European Inventory of Existing Commercial Chemical Substances</p> <p>EN : European Standard</p> <p>ATE : Acute Toxicity Estimate</p> <p>IATA : International Air Transport Association</p> <p>IMDG Code : International Maritime Dangerous Goods Code</p> <p>LC50 : Lethal Concentration to 50 % of a test population</p> <p>OMoD : Swiss Ordinance on the movement of waste</p> <p>PBT : Persistent, Bioaccumulative and Toxic</p> <p>PPE: Personal Protection Equipment</p> <p>REACH : Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006</p> <p>RID : Regulations concerning the international carriage of dangerous goods by rail</p> <p>RMM : Risk Management Measures</p> <p>STOT-SE : Specific Target Organ Toxicity - Single Exposure</p> <p>UN : United Nations</p> <p>vPvB : Very Persistent and Very Bioaccumulative</p> <p>WGK: Water Hazards Class</p> |

Full text of H, EUH and P statements used in sections 2 and 3

Hazard statements

H280 Contains gas under pressure; may explode if heated

Precautionary statements

P410+403 Protect from sunlight. Store in a well-ventilated place

Disclaimer of liability

Details given in this document have been prepared based on the most available reliable documents and are believed to be correct at the time of going to press

They do not claim to be exhaustive and should be considered as a guide