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

1.1. Product identifier

Trade name	Octafluorocyclopentene
Chemical description	Octafluorocyclopentene /Perfluorocyclopentene
CAS N°	559-40-0
CE N°	209-203-0
Index N°	--
Registration n°	-
Chemical formula	C_5F_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 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]

Hazards	Acute toxicity - Skin Category 3	H311
	Skin Irritation - Category 2	H315
	Eye irritation. - Category 2	H319

Acute toxicity - Inhalation Category 3 H331

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

2.2. Label elements

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

Hazard pictograms

GHS06 GHS07

Signal word Danger

Hazard statements

H311	Toxic in contact with skin
H315	Causes skin irritation
H319	Causes serious eye irritation
H331	Toxic if inhaled

Precautionary statements

P260	Do not breathe dust/fume/gas/mist/vapours/spray
P271	Use only outdoors or in a well-ventilated area
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P302+P352	IF ON SKIN: Wash with plenty of soap and water
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P410+403	Protect from sunlight. Store in a well-ventilated place
P405	Store locked up

2.3. Other hazards

Asphyxiant in high concentrations

Contact with liquid may cause cold burns/frostbite

SECTION 3: Composition/information on ingredients

3.1. Substances

Name	Product identifier	Concentration	Classification
Octafluorocyclopentene	(CAS-No.) 559-40-0 (EC-No.) 209-203-0 (EC Index-No.) --- (Registration-No.) --	<= 100%	Acute Tox. Inha 3 ;H331 Eye Dam/Irrit 2A ;H315 STOT SE Inha 3 ;H335 Skin Corr/Irrit 2 ;H319

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 — Sprinkle with large amounts of water until medical help arrives

In case of eyes contact — In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Keep the eye open during rinsing

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

No data available

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

No data available

6.3. Methods and material for containment and cleaning up

Ventilate the area

Keep area evacuated and free from ignition sources until any spilled liquid has evaporated (ground free from frost)

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
Octafluorocyclopentene	559-40-0	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 flammable / toxic gases / vapours are likely to 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 Wear cold insulating gloves when transferring or disconnecting transfer lines Standard EN 511 - Insulating gloves against cold Wearing chemical resistant gloves Standard EN 374-Protective gloves against chemicals

For short-term use

Material: Fluoroelastomer

Penetration time:> 480 min

Glove thickness: 0.7 mm

For long-term use

Material: Fluoroelastomer

Penetration time:> 480 min

Glove thickness: 0.7 mm

Have appropriate, chemical-resistant protective clothing ready for use in emergencies

Respiratory protection

Self-contained breathing apparatus (SCBA) or mask with positive pressure air supply must be used in oxygenated atmospheres. Standard EN 137 - Self-contained open-circuit compressed air unit with 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**: Liquid
- **Colour**: Colourless

Odour: No data available

Odour threshold: No data available

pH	No data available
Melting point / Freezing point	< -70°C
Boiling point	27°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]	0.8 bar
Vapour pressure [50°C]	No data available
Vapour density	No data available
Relative density, liquid (water=1)	1.58
Relative density, gas (air=1)	No data available
Water solubility	No data available
Partition coefficient n-octanol/water (Log Kow)	No data available
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	212.4 g/mol
Critical temperature [°C]	No data available
Relative vapour density	No data available

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

Avoid moisture in installation systems

10.5. Incompatible materials

No data available

For additional information on compatibility refer to ISO 11114

10.6. Hazardous decomposition products

No data available

SECTION 11: Toxicological information

11.1. Chemical safety assessment

Acute toxicity	There is no information available for the product itself
Skin corrosion/irritation	Causes skin irritation
Serious eye damage/irritation	Causes severe eye irritation
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)	Kidneys. Respiratory system. Central nervous system. Heart
STOT-repeated exposure	May cause damage to organs (liver, lung, skin) through prolonged or repeated exposure
Ingestion hazard	Central nervous system depression, headache, dizziness, drowsiness, loss of coordination, nausea

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

May cause pH changes in aqueous ecological systems

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

Eliminate as unused product
Contact the supplier if instructions are needed

OMoD Code

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

SECTION 14: Transport information

14.1. UN number

Transport par road/rail ADR / RID	Transport by sea IMDG	Transport by air IATA
2810	2810	2810

14.2. UN proper shipping name

Transport par road/rail ADR / RID	Transport by sea IMDG	Transport by air IATA
TOXIC LIQUID, ORGANIC, N.O.S., (Octafluorocyclopentene)	TOXIC LIQUID, ORGANIC, N.O.S., (Octafluorocyclopentene)	TOXIC LIQUID, ORGANIC, N.O.S., (Octafluorocyclopentene)

14.3. Transport hazard class(es)

Labelling

ADR/RID
IMDG
IATA

6.1 : Toxic liquids

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

SECTION 16: Other information

Indication of changes

Revised safety data sheet in accordance with commission regulation (EU) No 2015/830

Abbreviations and acronyms

ADR :	European Agreement concerning the International Carriage of Dangerous Goods by Road
CAS :	Chemical Abstract Service number (USA)
CLP :	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
CSA :	Chemical Safety Assessment
EIGA :	European Industrial Gases Association
EINECS :	European Inventory of Existing Commercial Chemical Substances
EN :	European Standard
ATE :	Acute Toxicity Estimate
IATA :	International Air Transport Association
IMDG Code :	International Maritime Dangerous Goods Code
LC50 :	Lethal Concentration to 50 % of a test population
OMoD :	Swiss Ordinance on the movement of waste

PBT :	Persistent, Bioaccumulative and Toxic
PPE:	Personal Protection Equipment
REACH :	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID :	Regulations concerning the international carriage of dangerous goods by rail
RMM :	Risk Management Measures
STOT-SE :	Specific Target Organ Toxicity - Single Exposure
UN :	United Nations
vPvB :	Very Persistent and Very Bioaccumulative
WGK:	Water Hazards Class

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

Hazard statements

H311	Toxic in contact with skin
H315	Causes skin irritation
H319	Causes serious eye irritation
H331	Toxic if inhaled

Precautionary statements

P260	Do not breathe dust/fume/gas/mist/vapours/spray
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P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P410+403	Protect from sunlight. Store in a well-ventilated place
P405	Store locked up

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