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Tetrafluoromethane (R14)		MTG116

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

1.1. Product identifier

Trade name	Tetrafluoromethane (R14)
Chemical description	Tetrafluoromethane, Carbon tetrafluoride
CAS N°	75-73-0
CE N°	200-896-5
Index N°	--
Registration n°	Registration deadline not expired
Chemical formula	CF ₄

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 for manufacture of electronic/photovoltaic components 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

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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



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
Tetrafluoromethane (R14)	(CAS-No.) 75-73-0 (EC-No.) 200-896-5 (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

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In case of skin contact	No adverse effects expected
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 : carbonyl fluoride, carbon monoxide, hydrogen 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

Provide adequate ventilation
 Evacuate personnel to a safe place
 Personal protective equipment, see section 8

6.2. Environmental precautions

-

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6.3. Methods and material for containment and cleaning up

Ensure adequate air ventilation

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)

-

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Components with occupational exposure limits

Component	CAS N°	Exposure value type	Control parameter	Source
Tetrafluoromethane (R14)	75-73-0	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 toxic gases may be released

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

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Eye/face protection	Wear goggles and a face shield when transfilling or breaking transfer connections. Standard EN 166
Skin / hand protection	<p>Wear protective gloves when handling gas cylinders. Standard EN 388- Protective gloves against mechanical hazards</p> <p>The selected protective gloves have to satisfy the specifications of EU Directive 89/686 / EEC and the standard EN 374 derived from it</p> <p>For short-term use</p> <p>Material: Fluoroelastomer Penetration time:> 30 min Glove thickness: 0.4 mm</p> <p>For long-term use</p> <p>Material: Fluoroelastomer Penetration time:> 480 min Glove thickness: 0.7 mm</p> <p>Have appropriate, chemical-resistant protective clothing ready for use in emergencies. Standard EN943-1</p>
Respiratory protection	Self-contained breathing apparatus (SCBA) or positive pressure airline with mask are to be used in oxygen-deficient atmospheres. Standard EN 137

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	-184°C
Boiling point	-130°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]	No data available
Vapour pressure [50°C]	No data available
Vapour density	No data available
Relative density, liquid (water=1)	No data available

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Relative density, gas (air=1)	3.04
Water solubility	20 mg/l
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	88 g/ mole
Critical temperature [°C]	-45°C
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

Aluminium and its alloys
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

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SECTION 11: Toxicological information

11.1. Chemical safety assessment

Acute toxicity	No known toxicological effects from this product
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

SECTION 12: Ecological information

12.1. Toxicity

Assessment	No data available
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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

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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: 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
1982	1982	1982

14.2. UN proper shipping name

Transport par road/rail ADR / RID	Transport by sea IMDG	Transport by air IATA
Tetrafluoromethane (Refrigerant gas R14)	Tetrafluoromethane (Refrigerant gas R14)	Tetrafluoromethane (Refrigerant gas R14)

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

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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

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WGK: Water Hazards Class

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