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

1.1. Product identifier

Trade name	Argon 99% - Fluor 1%
Chemical description	Argon 99% - Fluor 1%
CAS N°	-
CE N°	-
Index N°	-
Registration n°	-
Chemical formula	Ar, F ₂

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

Relevant identified uses	Industrial and professional Test gas/Calibration gas Chemical reaction/synthesis Use for manufacture of electronic/photovoltaic components Laboratory use Contact supplier for more information on use
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]

Oxidizing gas. Category 1	H270
Gases under pressure : Compressed gas	H280




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Causes skin irritation. Category 2	H315
Causes severe eyes irritation. Category 2	H319
Acute toxicity (inhalation: gas). Category 4	H332
May irritate the breathing system. Category 3	H335

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	  																
	GHS03 GHS04 GHS07																
Signal word	Danger																
Hazard statements	<table> <tr> <td>H270</td> <td>May cause or intensify fire; oxidiser</td> </tr> <tr> <td>H280</td> <td>Contains gas under pressure; may explode if heated</td> </tr> <tr> <td>H315</td> <td>Causes skin irritation</td> </tr> <tr> <td>H319</td> <td>Causes serious eye irritation</td> </tr> <tr> <td>H332</td> <td>Harmful if inhaled</td> </tr> <tr> <td>H335</td> <td>May cause respiratory irritation</td> </tr> </table>	H270	May cause or intensify fire; oxidiser	H280	Contains gas under pressure; may explode if heated	H315	Causes skin irritation	H319	Causes serious eye irritation	H332	Harmful if inhaled	H335	May cause respiratory irritation				
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Precautionary statements	<table> <tr> <td>P244</td> <td>Keep reduction valves free from grease and oil</td> </tr> <tr> <td>P260</td> <td>Do not breathe dust/fume/gas/mist/vapours/spray</td> </tr> <tr> <td>P280</td> <td>Wear protective gloves/protective clothing/eye protection/face protection</td> </tr> <tr> <td>P304+P340+P315</td> <td>IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get immediate medical advice/attention</td> </tr> <tr> <td>P332+P313</td> <td>If skin irritation occurs: Get medical advice/attention</td> </tr> <tr> <td>P305+P351+P338+P315</td> <td>IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention</td> </tr> <tr> <td>P405</td> <td>Store locked up</td> </tr> <tr> <td>P410+403</td> <td>Protect from solar radiation. Store in a well-ventilated place</td> </tr> </table>	P244	Keep reduction valves free from grease and oil	P260	Do not breathe dust/fume/gas/mist/vapours/spray	P280	Wear protective gloves/protective clothing/eye protection/face protection	P304+P340+P315	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get immediate medical advice/attention	P332+P313	If skin irritation occurs: Get medical advice/attention	P305+P351+P338+P315	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention	P405	Store locked up	P410+403	Protect from solar radiation. Store in a well-ventilated place
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P405	Store locked up																
P410+403	Protect from solar radiation. Store in a well-ventilated place																

2.3. Other hazards

None

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SECTION 3: Composition/information on ingredients

3.1. Substances

Name	Product identifier	Concentration	Classification
Argon	(CAS-No.) 7440-37-1 (EC-No.) 231-147-0 (EC Index-No.) --- (Registration-No.)--	99%	Press. Gas (Comp.), H280
Fluor	(CAS-No.) 7782-41-4 (EC-No.) 231-954-8 (EC Index-No.) - (Registration-No.)--	1%	Oxid. Gas 1, H270 Skin Irr. 2, H315, Eye Dam. 1, H319, Compr. Gas, H280, Acute Tox. 4, H330

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	Immediately rinse with plenty of water for at least 15 minutes and remove contaminated clothing and shoes. Seek immediate medical attention
In case of eyes contact	Take care to remove contact lenses from eyes before rinsing. Rinse thoroughly with water for at least 15 minutes. Seek immediate medical attention. If medical assistance is not immediately available, rinse for an additional 15 minutes
In case of ingestion	Ingestion is not considered as a possible route of exposure

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

Data not available

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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Water spray or water mist. Dry powder. Foam. Carbon dioxide
Unsuitable extinguishing media Do not use water jet to extinguish

5.2. Special hazards arising from the substance or mixture

Specific hazards In the case of fire or excessive heat, hazardous decomposition products may be formed
 Exposure to fire may cause containers to rupture/explode
Hazardous combustion products In the case of fire, thermal decomposition can produce toxic and/or corrosive products

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 the staff to a safe place
 Personal protective equipment, see section 8

6.2. Environmental precautions

Try to stop the leak

6.3. Methods and material for containment and cleaning up

Ventilate the area


6.4. Reference to other sections

See also sections 8 and 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid breathing vapour or mist.
 For precautions, see section 2.2

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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 at temperature below 50°C
Pressurized contents

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
Argon	7440-37-1	TWA	-	No occupational exposure limit value
			-	
		OEL	-	
			-	
Fluor	7782-41-4	TWA	0.1 ppm	SUVA: Exposure limit values at the workplace
			0.15 mg/m ³	
		OEL	0.2 ppm	SUVA: Exposure limit values at the workplace
			0.31 mg/m ³	

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Provide adequate general and local exhaust ventilation
Oxygen 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 safety glasses with side shields. Standard EN 166

Skin / hand protection

Wear protective gloves when handling gas cylinders. Standard EN 388
Wear cold insulating gloves when transferring or disconnecting transfer lines Standard EN 511
Wearing chemical resistant gloves Standard EN 374

For short-term use

Material: Fluororubber
Penetration time:> 120 min
Glove thickness: 0.7 mm

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MTGxxx
For long-term use

Material: Fluorororubber

Penetration time:> 480 min

Glove thickness: 0.7 mm

Have appropriate, chemical-resistant protective clothing ready for use in emergencies. Standard EN943-1

Respiratory protection

Self-contained breathing apparatus (SCBA) or positive pressure airline with mask are to be used in oxygen-deficient atmospheres. Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus 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** Gas
- **Colour** Colourless.

Odour

Mixture containing a component having a pungent odour

Odour threshold

Data not available

pH

Data not available

Melting point / Freezing point

Data not available

Boiling point

Data not available

Flash point

Data not available

Evaporation rate

Data not available

Flammability (solid, gas)

Data not available

Explosive limits

Data not available

Vapour pressure [20°C]

Data not available

Vapour pressure [50°C]

Data not available

Vapour density

Data not available

Relative density, liquid (water=1)

Data not available

Relative density, gas (air=1)

Data not available

Water solubility

Data not available

Partition coefficient

Data not available

n-octanol/water (Log Kow)
Auto-ignition temperature


Data not available

Decomposition temperature

Data not available

Viscosity

Data not available

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Explosive properties Data not available

Oxidising properties Oxidizing

9.2. Other information

Molar mass Data not available

Critical temperature [°C] Data not available

Relative vapour density 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 the sections below

10.2. Chemical stability

Stable under the recommended storage conditions

10.3. Possibility of hazardous reactions

Violently oxidizes organic materials

May react violently with combustible materials

May react violently with reducing agents

10.4. Conditions to avoid

Avoid humidity in the installations

10.5. Incompatible materials

Moisture. Combustible materials. Reducing agents. Oil and grease

For additional information on compatibility refer to ISO 11114 standard

10.6. Hazardous decomposition products

No hazardous decomposition products under normal conditions of use and storage

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity Data not available

Skin corrosion/irritation Causes skin irritation

Serious eye damage/irritation Causes severe eye irritation

Respiratory or skin sensitisation On the basis of the available data, the classification criteria are not met

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Germ cell mutagenicity	On the basis of the available data, the classification criteria are not met
Carcinogenicity	On the basis of the available data, the classification criteria are not met
Reproductive toxicity	On the basis of the available data, the classification criteria are not met
STOT-single exposure – Target organ(s)	May irritate the respiratory system
STOT-repeated exposure	On the basis of the available data, the classification criteria are not met
Ingestion hazard	Data not available

SECTION 12: Ecological information

12.1. Toxicity

Assessment No ecological damage caused by this product

12.2. Persistence and degradability

Data not available

12.3. Bioaccumulative potential

Data not available

12.4. Mobility in soil

Data not available

12.5. Results of PBT and vPvB assessment

Not classified as PBT or vPvB


12.6. Other adverse effects

Data not available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product	Must not be released into the atmosphere Burning in a chemical incinerator equipped with an afterburner and purification system Return unused product to the supplier in its original container
Contaminated container	Return unused product in original cylinder to supplier
OMoD Code	16 05 04 Gases in pressure containers (including halons) containing dangerous substances

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SECTION 14: Transport information

14.1. UN number

Transport by road/rail ADR / RID	Transport by sea IMDG	Transport by air IATA
3156	3156	3156

14.2. UN proper shipping name

Transport by road/rail ADR / RID	Transport by sea IMDG	Transport by air IATA
Compressed gas oxidizing, N.O.S. (Fluorine, Argon)	COMPRESSED GAS OXIDIZING, N.O.S. (Fluorine, Argon)	COMPRESSED GAS OXIDIZING, N.O.S. (Fluorine, Argon)

14.3. Transport hazard class(es)

Labelling



ADR/RID
IMDG
IATA

2.2 : Non-flammable, non-toxic gases
5.1 : Flammable gases

14.4. Packing group

ADR/RID
IMDG
IATA

Not determined

14.5. Environmental hazards

ADR/RID

None

IMDG

None

ICAO-TI / IATA-DGR


None

14.6. Special precautions for user

-

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

Not applicable

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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 does not need to be carried out for this product

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

H270 May cause or intensify fire; oxidiser

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- H280 Contains gas under pressure; may explode if heated
- H315 Causes skin irritation
- H319 Causes serious eye irritation
- H332 Harmful if inhaled
- H335 May cause respiratory irritation

Precautionary statements

- P244 Keep reduction valves free from grease and oil
- P260 Do not breathe dust/fume/gas/mist/vapours/spray
- P280 Wear protective gloves/protective clothing/eye protection/face protection
- P304+P340+P315 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get immediate medical advice/attention
- P332+P313 If skin irritation occurs: Get medical advice/attention
- P305+P351+P338+P315 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention
- P405 Store locked up
- P410+403 Protect from solar radiation. 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