Aero-Duster

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

1.1 - Product identifier

Trade name/designation Aero-Duster
Chemical name
Product-type Mixture
Product code MS.222L

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

Relevant identified uses - Aerosols

1.3 - Details of the supplier of the safety data sheet

ECS AG
Roosstr. 53
8832 Wollerau Switzerland
Telephone : +41 (0)44 / 787 53 53
info@ecsag.ch

1.4 - Emergency telephone number

Verwenden Sie Ihrenationale oder lokale Notrufnummer (Deutschland)
Tel. No.: +49(0)30-19240.
Schweizerisches Toxikologisches Informationszentrum (Schweiz)/ Centro svizzero di informazione tossicologica (Svizzera)/ Centre Suisse d'Information Toxicologique (Suisse)
Tel. No.: +41 44 251 51 51
Tox Info Suisse Notrufnummer: 145 (24 Stunden)/ Numero di emergenza Tox Info Suisse: 145 (24 ore)/ Tox Info Suisse Numéro d'urgence: 145 (24h)
Giftnotrufzentrale (Österreich)
Tel. No.: +43 1 406 4343

SECTION 2: Hazards identification

2.1 - Classification of the substance or mixture

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

Press. Gas (Liq.)	Liquefied gas

2.2 - Label elements

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

Signal word : Warning
Hazard pictograms



Hazard statements

H280	Contains gas under pressure; may explode if heated

Precautionary statements

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.

P103	Read carefully and follow all instructions.
P280	Wear protective gloves/eye protection/Face protection shield.
P410+P403	Protect from sunlight. Store in a well-ventilated place.
EUH-phrases	: None

2.3 - Other hazards

PBT-substance.	- This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.
vPvB-substance.	- This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.
Other hazards which do not result in classification	- May displace oxygen and cause rapid suffocation.

SECTION 3: Composition / information on ingredients

3.1 - Substances

Not applicable

3.2 - Mixtures

Chemical name	No	%	Class(es)	Specific concentration limit
Trans-1,3,3,3-Tetrafluoroprop-1-ene INCI: TETRAFLUOROPROPENE	CAS No. : 29118-24-9 Index No. : EC No. :	100	Press. Gas	Not applicable

SECTION 4: First aid measures

4.1 - Description of first aid measures

Following inhalation	- Provide fresh air. - If breathing is irregular or stopped, administer artificial respiration. - When in doubt or if symptoms are observed, get medical advice.
Following skin contact	- In case of frostbite, wash with plenty of water; do not remove clothing. - When in doubt or if symptoms are observed, get medical advice.
After eye contact	- Rinse immediately carefully and thoroughly with eye-bath or water. - In case of eye irritation consult an ophthalmologist.
After ingestion	- Do NOT induce vomiting. - When in doubt or if symptoms are observed, get medical advice.

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

Symptoms and effects - Following inhalation	- No information available.
Symptoms and effects - Following skin contact	- The following symptoms may occur: Frostbite
Symptoms and effects - After eye contact	- No information available.
Symptoms and effects - After ingestion	- No information available.

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

- Treat symptomatically.
- In case an intoxication is suspected, National Poisons Information Centre should be addressed immediately, number of Emergency telephone see in section 1.4.

SECTION 5: Firefighting measures

5.1 - Extinguishing media

Suitable extinguishing media	- ABC-powder - Carbon dioxide (CO_2) - Foam - Extinguishing powder
Unsuitable extinguishing media	- Full water jet

5.2 - Special hazards arising from the substance or mixture

Special hazards arising from the substance or mixture	- Contains gas under pressure; may explode if heated. - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. - The vapour is heavier than air and may travel along the ground; distant ignition possible.
Hazardous decomposition products	- Carbon dioxide (CO_2) - Carbon monoxide - Hydrogen fluoride - Carbonyl dichloride (phosgene) - Gases/vapours, harmful

5.3 - Advice for firefighters

- Co-ordinate fire-fighting measures to the fire surroundings.
- In case of fire and/or explosion do not breathe fumes.

SECTION 6: Accidental release measures

6.1 - Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	- Avoid breathing dust/fume/gas/mist/vapours/spray. - Remove all sources of ignition. - Remove persons to safety. - Use appropriate respiratory protection. - Ventilate affected area. - Wear breathing apparatus if exposed to vapours/dusts/aerosols.
For emergency responders	- Wear breathing apparatus if exposed to vapours/dusts/aerosols.

6.2 - Environmental precautions

- Do not allow uncontrolled discharge of product into the environment.

6.3 - Methods and material for containment and cleaning up

Methods and material for containment	- No information available.
Methods and material for cleaning up	- Ventilate affected area.
Inappropriate techniques	- No information available.

6.4 - Reference to other sections

- Safe handling: see section 7
- Personal protection equipment: see section 8
- Disposal: see section 13

SECTION 7: Handling and storage

7.1 - Precautions for safe handling

Recommendation	- Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50 °C. Do not pierce or burn, even after use. - Do not breathe gas/fumes/vapour/spray. - Heating causes rise in pressure with risk of bursting. - Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. - Use only in well-ventilated areas. - Use personal protective equipment as required.
Advices on general occupational hygiene	- Avoid contact with skin, eyes and clothes. - Wash hands before breaks and after work. - When using do not eat, drink, smoke, sniff.

7.2 - Conditions for safe storage, including any incompatibilities

- Ensure adequate ventilation of the storage area.
- Store in a dry place. Store in a closed container.
- Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50 °C. Do not pierce or burn, even after use.

7.3 - Specific end use(s)

- Aerosols

SECTION 8: Exposure controls/personal protection

8.1 - Control parameters

DNEL / PNEC

Trans-1,3,3,3-Tetrafluroprop-1-ene (29118-24-9)			
Type	**Value**	**User**	**Effect**
DNEL long-term inhalative	3902 mg/m³	Workers	Systemic
DNEL long-term inhalative	830 mg/m³	Consumers	Systemic
PNEC aquatic, freshwater	0.1 mg/l		

8.2 - Exposure controls

Appropriate engineering controls	- If local exhaust ventilation is not possible or not sufficient, the entire working area should be ventilated by technical means.
Individual protection measures, such as personal protective equipment	- Suitable eye protection: goggles  - Wear cold insulating gloves and either face shield or eye protection. - In case of prolonged or frequently repeated skin contact: - Protective gloves according to EN374 - The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. - When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. - Breakthrough time: > 480 min. - Suitable material: NBR (Nitrile rubber)
Environmental exposure controls	- Do not allow to enter into surface water or drains.

SECTION 9: Physical and chemical properties

9.1 - Information on basic physical and chemical properties

Physical state	gaseous	Appearance	Liquefied gas
Colour	colourless	Odour	characteristic

Odour threshold	No data available
pH	7
Melting point	No data available
Freezing point	No data available
Boiling point	-19 °C
Flash point	No data available
Evaporation rate	No data available
flammability	No data available
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapour pressure	4274.75 hPa
Vapour density	4
Relative density	No data available
Density	1.17 g/cm³
Solubility (Water)	0.373 g/ml
Solubility (Ethanol)	No data available

Solubility (Acetone)	No data available
Solubility (Organic solvents)	No data available
Log KOC	<= 4
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Kinematic viscosity	No data available
Dynamic viscosity	No data available

Particle characteristics

Particle size	No data available
Dustiness	No data available
Specific surface area	No data available
Shape	No data available

9.2 - Other information

VOC content	No data available
Minimum ignition energy	No data available
Conductivity	No data available

SECTION 10: Stability and reactivity

10.1 - Reactivity

- This material is considered to be non-reactive under normal use conditions.

10.2 - Chemical stability

- The product is chemically stable under recommended conditions of storage, use and temperature.

10.3 - Possibility of hazardous reactions

- No hazardous reaction when handled and stored according to provisions.

10.4 - Conditions to avoid

- Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.

10.5 - Incompatible materials

- Alkaline earth metal

10.6 - Hazardous decomposition products

- Carbon dioxide
- Carbon monoxide
- Carbonyl difluoride
- Gases/vapours, harmful

SECTION 11: Toxicological information

11.1 - Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity - Not classified

Toxicity : Mixture

LD50 oral (rat)	No data available
LD50 dermal (rat)	No data available
LD50 dermal (rabbit)	No data available
LC50 inhalation (rat)	> 207000 ppmV
LC50 inhalation dusts and mists (rat)	No data available
LC50 inhalation vapours (rat)	No data available

- Based on available data, the classification criteria are not met.

Toxicity : Substances

Trans-1,3,3,3-Tetrafluroprop-1-ene (29118-24-9)	
LC50 inhalation (rat)	> 207000 ppmV

Skin corrosion/irritation - Not classified

- Can cause frostbite.

Serious eye damage/eye irritation - Not classified

Respiratory or skin sensitisation - Not classified

Germ cell mutagenicity - Not classified

Carcinogenicity - Not classified

Reproductive toxicity - Not classified

STOT-single exposure - Not classified

STOT-repeated exposure - Not classified

- NOEL 5,000 ppm
- May cause damage to heart through prolonged or repeated exposure if inhaled.
- Cardiac arrhythmias
- Vapours may cause drowsiness and dizziness.

Aspiration hazard - Not classified

11.2 - Information on other hazards

- This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

SECTION 12: Ecological information

12.1 - Toxicity

Toxicity : Mixture

EC50 48 hr crustacea	No data available
LC50 96 hr fish	No data available
ErC50 algae	No data available
ErC50 other aquatic plants	No data available
NOEC chronic fish	No data available
NOEC chronic crustacea	No data available
NOEC chronic algae	No data available

NOEC chronic other aquatic plants	No data available

Toxicity : Substances

Trans-1,3,3,3-Tetrafluroprop-1-ene (29118-24-9)	
EC50 48 hr crustacea	> 160 mg/l
LC50 96 hr fish	> 117 mg/l
ErC50 algae	> 170 mg/l
NOEC chronic fish	> 117 mg/l
NOEC chronic algae	> 170 mg/l

- The substance/mixture does not fullfill the criteria of the acute aquatic toxicity according to Regulation (EC) No 1272/2008 [CLP], Annex I.

12.2 - Persistence and degradability

Biochemical oxygen demand (BOD)	No data available
Chemical oxygen demand (COD)	No data available
% of biodegradation in 28 days	No data available

- No information available.

12.3 - Bioaccumulative potential

Bioconcentration factor (BCF)	No data available
Log KOC	<= 4

- No indication of bioaccumulation potential.

12.4 - Mobility in soil

- No information available.

12.5 - Results of PBT and vPvB assessment

- This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.

- This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.

12.6 - Endocrine disrupting properties

- This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

12.7 - Other adverse effects

- No information available.

SECTION 13: Disposal considerations

13.1 - Waste treatment methods

Waste treatment methods
- Dispose of waste according to applicable legislation.
- Dispose of empty or partially emptied packaging/container/can after appropriate use of the product to municipal waste.
- Handle contaminated packages in the same way as the substance itself.

Sewage disposal
- No information available.

Special precautions for waste treatment	- No information available.
Community or national or regional provisions	- No information available.

SECTION 14: Transport information

14.1 - UN number or ID number

UN number (ADR)	:	UN3163
UN number (RID)	:	Not applicable
UN number (ADN)	:	Not applicable
UN number (IMDG)	:	UN3163
UN number (IATA)	:	UN3163

14.2 - UN proper shipping name

UN proper shipping name (ADR)	:	LIQUEFIED GAS, N.O.S.
UN proper shipping name (IMDG)	:	LIQUEFIED GAS, N.O.S.
UN proper shipping name (IATA)	:	LIQUEFIED GAS, N.O.S.

14.3 - Transport hazard class(es)

ADR Transport hazard class(es)	:	2
ADR Classification code:	:	2A

Pictograms



Pictograms

Transport hazard class(es) (IMDG)	:	2.2

Pictograms



Transport hazard class(es) (IATA)	:	2.2

Pictograms



14.4 - Packing group

Packing group	:	
Packing group (IMDG)	:	
Packing group (IATA)	:	

14.5 - Environmental hazards

Environmental hazards	:	No
Marine pollutant	:	No

14.6 - Special precautions for user

ADR

ADR Classification code:	:	2A
ADR Special provisions	:	274+660+662
ADR Limited quantity (LQ)	:	120ml
ADR Excepted quantities	:	E1
ADR Packing instructions	:	P200
ADR Special packing provisions	:	
ADR Mixed packing provisions	:	MP9
Instructions for portable tanks and bulk containers	:	(M) T
Special provisions for portable tanks and bulk containers	:	
ADR tank code	:	PxBN(M)
ADR tanks special provisions	:	TA4 TT9
Vehicle for tank carriage	:	AT
ADR Transport category	:	3
ADR Tunnel restriction code	:	C/E
ADR Special provisions loading, unloading and handling	:	CV9 CV10 CV36
Special provisions - Packages	:	
Special provisions - Bulk	:	
Special provisions - Operation	:	
ADR Hazard identification number (Kemler No.)	:	20

IMDG

Special provisions	:	274
Limited quantity (LQ)	:	120 ml
Excepted quantities	:	E1
Packing instructions	:	P200
Special packing provisions	:	
IBC instruction(s)	:	
IBC provisions	:	
Instructions for portable tanks and bulk containers	:	T50
Special provisions for portable tanks and bulk containers	:	
EmS codes	:	F-C, S-V
Stowage and handling	:	Category A
Segregation	:	
Properties and observations	:	

IATA		
PCA - Excepted quantities	:	E1
PCA - Limited Quantity - Packing Instructions	:	Forbidden
PCA - Limited Quantity - Maximum Net Quantity per Package	:	Forbidden
PCA - Packing Instructions	:	200
PCA - Maximum Net Quantity per Package	:	75kg
CAO - Packing Instructions	:	200
CAO - Maximum Net Quantity per Package	:	150kg
Special Provisions	:	
ERG Code	:	2L

14.7 - Maritime transport in bulk according to IMO instruments

SECTION 15: Regulatory information

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

Substances REACH candidates	None
Substances Annex XIV	None
Substances Annex XVII	None

VOC content	No data available

- – COMMISSION REGULATION (EU) 2016/918 of 19 May 2016 amending, for the purposes of its adaptation to technical and scientific progress, Regulation (EC) No 1272/2008 of the European Parliament and of the Council on classification, labelling and packaging of substances and mixtures. The Regulation has been published in the Official Journal of the European Union No. L 156, on 14 June, 2016;
- – COMMISSION REGULATION (EU) 2020/878 of 18 June 2020 amending Regulation (EC) No. 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (OJ L 203, 26.6.2020, p. 28–58);
- – COUNCIL DIRECTIVE of 20 May 1975 on the approximation of the laws of the Member States relating to aerosol dispensers (75/324/EEC) (OJ L 147, 9.6.1975, p. 40)
- – On 16 December 2008 the Regulation (EC) No. 1272/2008 of the European Parliament and of the Council on classification, labelling and packaging of chemical substances and mixtures was undersigned. The said Regulation amended and repealed the directives 67/548/EEC and 1999/45/EC and Regulation (EC) No. 1907/2006 (the REACH Regulation). The Regulation has been published in the Official Journal of the European Union No. L 353, volume 51 on 31 December, 2008;
- – Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No.793/93, Commission Regulation (EC) No. 1488/94, Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC (Official Journal of the European Union No. L 396, 30-12-2006, error correction – No. L 136/3, 2007-5-29);
- Directive 98/24/EC of 7 April 1998 on the protection of the health and safety of workers from the risks related to chemical agents at work
- Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC).
- Swiss Regulations: Article 4 para. 4 of the Ordinance on the protection of young people in the workplace (SR 822.115) and Article 1 lit. f of the EAER regulation on hazardous work and young people (SR 822.115.2).

15.2 - Chemical Safety Assessment

Chemical safety assessment carried out for the product	- No information available.

SECTION 16: Other information

SDS versions

Version	Issue date	Author	Description of the amendments
1	23/02/2024		

Abbreviations and acronyms

- ACGIH – Association advancing occupational and environmental health.
- ADN – European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.
- ADR – European Agreement concerning the International Carriage of Dangerous Goods by Road.
- CAS – Chemical Abstracts Service number.
- CEN – European Committee for Standardisation.
- EC50 – Effective concentration to 50% of a test population (half maximal effective concentration).
- IC50 – Inhibitory concentration to 50% of a test population (half maximal inhibitory concentration).
- IMDG – International Maritime Dangerous Goods.
- IMO – International Maritime Organization.
- LC50 – Lethal Concentration to 50 % of a test population.
- LD50 – Lethal Dose to 50% of a test population (Median Lethal Dose).
- MSDS – Material Safety Data Sheet.
- NIOSH – National Institute of Occupational Safety and Health.
- NOEC – No effect concentration.
- PBT – Persistent, Bioaccumulative and Toxic substance.
- PNEC(s) – Predicted No Effect Concentration(s).
- RID – Regulations concerning the International Carriage of Dangerous Goods by Rail.
- STOT – Specific Target Organ Toxicity.
- vPvB – Very Persistent and Very Bioaccumulative.

Data sources:

European Chemicals Agency (ECHA)
European Chemicals Bureau (ECB)
International Laboratories Organization (ILO)

Texts of the regulatory sentences

H280	Contains gas under pressure; may explode if heated
Press. Gas	Gases under pressure
Press. Gas (Liq.)	Liquefied gas

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

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