Date of issue: 2019/04/17
Last revised date: 2021/08/12

Product name / chemical name: R422A / C_2HF_5 85,1 %; $C_2H_2F_4$ 11,5 %; C_4H_{10} 3,4 % (% by weight)

SDS according to setting: EU 2015/830 SAFETY DATA SHEET

(*) oncly chemical-announcement
(**) to be filled either 3.1 or 3.2

SECTION 1: IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product / Trade name	R422A
Chemical name, formula	C_2HF_5 85,1 %; $C_2H_2F_4$ 11,5 %; C_4H_{10} 3,4 % (% by weight)
CAS No, EC No, REACH-reg.no	Pentafluoroethane C_2HF_5, R125, CAS 354-33-6, EC 206-557-8, REACH 01-2119485636-25 1,1,1,2-Tetrafluoroethane $C_2H_2F_4$, R134a, CAS 811-97-2, EC 212-377-0, REACH 01-2119459374-33 Isobutane C_4H_{10}, R600a, CAS 75-28-5, EC No 200-857-2, REACH 01-2119485395-27

1.2 Relevant identified uses of the substance

Identified uses	Industrial and professional use. Perform risk assessment prior to use. Refrigerant.
Use advised against	Consumer use.

1.3 Details of the supplier of the safety data sheet

Darment Oy

VAT	FI09368266
Address	Ruosilantie 18
Postal code and city	FI-00390 HELSINKI
Telephone	+358 20 5588 250
E-mail	info@darment.fi
www-site, www-shop site	www.darment.fi | www.kauppa.darment.fi (www-shop)

Emergency telephone numbers in Finland **Your country_____**

tel. **112**
tel. **0800 147 111,** HUS Poison Information Center (free calls)**,** tel. **09 471 977**, open 24 h/day.

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification accordint to Regulation (EU) N:o 1272/2008 as amended.

Physical Hazards

Gases under pressure	Liquefied gas	H280: Contains gas under pressure; may explode if heated.

2.2 Label Elements

GHS Hazard Pictogram(s)

Signal Word: Warning

Hazard Statement(s):

H280 Contains gas under pressure; may explode if heated.

Precautionary Statements

Prevention None

Response None

Storage P410 + P403 Protect from sunlight. Store in a well-ventilated place.

Disposal None

Supplemental label information:

Asphyxiant in high concentrations.

2.3 Other hazards

High concentrations may cause suffocation. Vapors are heavier than air and may accumulate in wells and cause asphyxiation.Contact with evaporating liquid may cause frostbite or freezing of skin.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.2 Mixtures

Chemical name, trade name	CAS No, EC-No, REACH Reg. No	Concentration (% by weight)	Classification CLP
Pentafluoroethane, C_2HF_5, R125	CAS No 354-33-6 EC No 206-557-8 REACH 01-2119485636-25	85,1 %	Gas under pressure; Liquefied gas; H280
1,1,1,2-Tetrafluoroethane, $C_2H_2F_4$, R134a	CAS No 811-97-2 EC No 212-377-0 REACH 01-2119459374-33	11,5 %	Gas under pressure; Liquefied gas; H280
Isobutane, C_4H_{10}, R600a	CAS No 75-28-5 EC No 200-857-2 REACH 01-2119485395-27	3,4 %	Gas under pressure; Liquefied gas; H280, Flammable gas category 1; H220

All concentrations are nominal. Classification, CLP Regulation No. 1272/2008.

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

Inhalation: In high concentrations may cause asphyxiation. Symptoms may include loss of mobility or consciousness. Victim may not be aware of asphyxiation. Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor or 112. Apply artificial respiration if breathing stopped.

Skin contact: Contact with evaporating liquid may cause frostbite or freezing of skin. Thaw frosted parts with lukewarm water. Do not rub affected area. Get immediate medical advice/attention.

Eye contact: Rinse the eye with water immediately. Remove contact lenses, if present and easy to do. Continue rinsing. Flush thoroughly with water for at least 15 minutes. Get immediate medical assistance.

Ingestion: Ingestion is not considered a potential route of exposure. But In case of ingestion, seek medical advice immediately and show the safety data sheet for this product.

4.2 Most important symptoms an effects, acute and delayed

May cause cardiac arrhythmia and cardiac sensitization.
Gas is heavier than air and reduces oxygen available for breathing.
Contact with liquefied gas can cause damage (frostbite) due to rapid evaporative cooling.

4.3 Indication of any immediate medical attention and special treatment needed

Hazards: Respiratory arrest. Cardiatic sensitization, anaesthetif effects, light-headedness, dizziness, confusion, lack of coordination, drowsinesss, unconsciousness.

Skin contact with liquefied gas can cause damage (frostbite) due to rapid evaporative cooling,
Eye contact may cause redness and discomfort. Get medical attention immediately.

Treatment: Epinephrine and similar drugs, that may be used in situations of emergency life support should be used with special caution due to possible cardiac arrhymia.

SECTION 5: FIREFIGHTING MEASURES

Heat may cause the containers to explode. Matrial will not burn.

5.1 Extinguishing media

Suitable extinguishing media: In case of fire in the surroundings use appropriate extinguishing agent.

Unsuitable Extinguishing media: None.

5.2 Special hazards arising from the substance or mixture

Fire or exessive heat may produce hazardous decomposition products.

Hazardous Combustion Products: If involved in a fire the following toxic and/or corrosive fumes may be produced by thermal decomposition: Carbon oxides, Carbonyl fluoride, Fluorine combounds, Hydrogen fluoride.

5.3 Advice for firefighters

Special fire fighting procedures: In case of fire stop leak if safe to do so. Move undamaged containers from the fire area if safe to do so. Continue spraying water from protected position until container stays cool. Use extinguishant. Isolate the source of the fire or let it burn out.

Follow the internal emergency plan and general accident and emergency guidelines.

Depending on the intensity of the fire, it may be necessary to wear full protective clothing and self-contained breathing apparatus. Safety equipment and first aid equipment must be available at the minimum level.

Firefighters must wear standard protective equipment: a fire-resistant jacket, a helmet with a face shield, gloves and rubber boots even in an enclosed area with an oxygen device.

Instructions: EN 469 Protective clothing for firefighters. Requirements and test methods for fire rating. EN 15090 Safety footwear for firefighters. EN 659 Protective gloves for firefighters. EN 443 Helmets for fire fighting in houses and others constructions. Standard EN 137 Compressed air breathing apparatus - Portable open circuit compressed air devices - Requirements, testing, marking.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipments and emergency procedures

- Evacuate area. Provide adequate ventilation.
- Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.
- Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe.
- Standard EN 137 Respiratory protective devices – Self-contained open-circuit compressed air breathing apparatus with full face mask – Requirements, testing, marking.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so.

6.3 Methods and material for containment and cleaning up

Provide adequate ventilation.

6.4 References to other sections

Refer to sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

- Only experienced and properly instructed persons should handle gases under pressure.
- Use only properly specified equipment which is suitable for this product, its supply pressure and temperature.
- Refer to supplier's handling instructions.
- The substance must be handled in accordance with good industrial hygiene and safety procedures.
- Protect containers from physical damage; do not drag, roll, slide or drop.
- Do not remove or deface labels provided by the supplier for the identification of the container contents.
- When moving containers, even for short distances, use appropriate equipment eg. trolley, hand truck, fork truck etc.
- Secure cylinders in an upright position at all times, close all valves when not in use.
- Provide adequate ventilation.
- Suck back of water into the container must be prevented.
- Do not allow backfeed into the container.
- Avoid suckback of water, acid and alkalis.
- Keep container below 50°C in a well ventilated place.
- Observe all regulations and local requirements regarding storage of containers.
- When using do not eat, drink or smoke.
- Observe all legal and local requirements for the storage of cylinders / containers.
- Never use direct flame or electrical heating devices to raise the pressure of a container.
- Leave valve protection caps in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use.
- Damaged valves should be reported immediately to the supplier Close container valve after each use and when empty, even if still connected to equipment.
- Never attempt to repair or modify container valves or safety relief devices.
- Replace valve outlet caps or plugs and container caps where supplied as soon as container is disconnected from equipment.
- Keep container valve outlets clean and free from contaminates particularly oil and water.
- If user experiences any difficulty operating container valve discontinue use and contact supplier.
- Never attempt to transfer gases from one container to another.
- Container valve guards or caps should be in place.

7.2 Conditions for safe storage including any incompatibilities

- Containers should not be stored in conditions likely to encourage corrosion.
- Stored containers should be periodically checked for general conditions and leakage.
- Container valve guards or caps should be in place.
- Store containers in location free from fire risk and away from sources of heat and ignition.
- Keep away from:
    - self-rective substances and mixtures
    - organic peroxides
    - oxidizing agents
    - flammable liquids and solids
    - pyrophoric liquids and solids
    - self-heating substances and mixtures
    - Substances and mixtures which in contact with water emit flammable gases

- explosives
- acutely toxic substances and mixtures
- substances and mixtures with chronic toxicity

7.3 Specific end use(s)

None.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Occupational exposure limit values

Critical ingredient	STM 09/2018 htp-values	ppm	mg/m³
Isobutane	15 min	1000	2400
	8 h	800	1900

DNEL Values

Critical component	Type	Value	Remarks
1,1,1,2-Tetrafluoroethane	Worker – inhalation, longterm – systemic	13936 mg/m³	Repeated dose toxicity.
	General population – inhalation, longterm – systemic	2476 mg/m³	Repeated dose toxicity.
Pentafluoroethane	Worker – inhalation, longterm – systemic	16444 mg/m³	Repeated dose toxicity.
	General population – inhalation, longterm – systemic	1753 mg/m³	Repeated dose toxicity.

PNEC Values

Critical component	Type	Value	Remarks
1,1,1,2-Tetrafluoroethane	Aquatic (freshwater)	100 µg/l	-
	Aquatic (intermittent releases)	1 mg/l	-
	Aquatic (marine water)	10 µg/l	-
	Sewage treatment plant	73 mg/l	-
	Sediment (freshwater)	750 µg/kg	-
Pentafluoroethane	Aquatic (freshwater)	100 µg/l	-
	Aquatic (intermittent releases)	1 mg/l	-
	Sediment (freshwater)	600 µg/kg	-

8.2 Exposure controls

Appropriate engineering controls

- Consider a work permit system e.g. for maintenance activities.
- Ensure adequate ventilation including exhaust ventilation to ensure that the specified exposure limit value is not exceeded.
- Systems under pressure should be regularly checked for leakages.
- Preferably use permanent leak tight connections (eg. welded pipes).
- Do not eat, drink or smoke when using the product.

Individual protection measures like personal protective equipment

General information: A risk assessment should be conducted and documented in each work area to assess the risks related to the use of the product and to select the PPE that matches the relevant risk. The following recommendations should be considered. Keep self contained breathing apparatus readily available for emergency use. Personal protective equipment for the body should be selected based on the task being performed and the risks involved.

Eye and face protection
To avoid exposure to liquid splashes, safety glasses, eye protection or face shields should be used in accordance with EN 166.
(Instructions: EN 166 Personal Eye Protection.)

Skin protection

Hand protection: Wear working gloves while handling containers. (Guidelines: EN 388 Protective gloves against mechanical risks)

Body protection: No special precautions.

Other: Wear safety shoes while handling containers.
Guideline: ISO 20345 Personal protective equipment – safety footwear.

Respiratory protection: Not required.

Thermal hazards: No precautionary measures are necessary.

Hygiene measures: Specific risk management measures are not required beyond good industrial hygiene and safety procedures. Do not eat, drink or smoke when using the product.

Environmental exposure controls: Waste disposal, see sec. 13.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance, physical state, form and color	Gas, liquefied gas, colorless
Odor	No data available
Odor threshold	No data available
pH	Not applicable
Melting point	No data available
Boiling point (°C)	- 46,2 … -41,5
Flash point	Not applicable to gases and gas mixtures
Evaporation rate	Not applicable to gases and gas mixtures
Flammability (solid, gas)	This product is not flammable
Flammability limit upper / lower	Not applicable
Vapor pressure	1276 kPa (25°C)
Vapor density (air=1)	No data available
Relative density	1,14 (15°C)
Solubility (ies), 25°C	partly miscible
Partition coefficient, n-oktanol/water	Not known
Autoignition temperature (°C)	No data available
Decomposition temperature	Not known
Viscosity, kinematich / dynamic	No data available
Explosive properties	Not applicable
Oxidizing properties	The substance or mixture is not classified as oxidizing

9.2 Other information

Gas/vapour is 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-section below.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Can react with strong oxidizing agents.

10.4 Conditions to avoid

Open flames and high energy ignition sources. The product is not flammable in air under ambient conditions of temperature and pressure. When pressurised with air or oxygen, the mixture may become flammable. Certain mixtures of HFCs with chlorine may become flammable or reactive under certain conditions.

10.5 Incompatible materials

Oxidizing agents.

10.6 Hazardous decomposition products

No hazardous decomposition products are known.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

General information: None.

Acute toxicity / Oral

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

Acute toxicity /Dermal

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

Acute toxicity / Inhalation

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

Component information

Isobutane:	LC_{50} (15 min)	(Rat)	1442,738 – 1443 mg/l air
	LC_{50} (15 min)	(Rat)	800000 ppm
	LC_{50} (2 h)	(Mouse)	1237 mg/l air
	LC_{50} (2 h)	(Mouse)	520400 - 539600 ppm
1,1,1,2-Tetrafluoroethane	LC_{Lo} (4 h)	(Rat)	567000 ppm
Pentafluoroethane:	LC_{Lo} (4 h)	(Rat)	800000 ppm

Repeated dose toxicity / Inhalation

Component information

Isobutane:	NOAEC	(Rat)	7,214 – 21,394 mg/l air
	NOAEC	(Rat)	4000 - 16000 ppm
	LOAEC	(Rat)	21,641 mg/l air
	LOAEC	(Rat)	12000 ppm
1,1,1,2-Tetrafluoroethane	NOAEC	(Rat)	50000 ppm
Pentafluoroethane:	NOAEL	(Rat)	50000 ppm

Skin corrosion / irritation

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

Serious eye damage / eye irritation

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

Respiratory or skin sensitization

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

Germ cell mutagenicity

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

Carcinogenicity

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

Reproductive toxicity

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

Specific target organ toxicity – single exposure

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

Specific target organ toxicity – repeated exposure

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

Aspiration hazard

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

Other relevant toxicity information

- Light hydrocarbons have been associated with cardiac sensitization in abuse situations.
- Hypoxia or the injection of adrenaline-like substances enhances effects.
- May produce irregular heart beat and nervous symptoms.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Acute toxicity, product: No ecological damage caused by this product.

Component information

Acute toxicity – Fish:

Isobutane:	LC_{50} (4 d):	24,11 – 147,54 mg/l
1,1,1,2-Tetrafluoroethane	LC_{50} (4 d):	450 mg/l
	LC_{50} (72 h):	450 mg/l
	LC_{50} (48 h):	450 mg/l
	LC_{50} (24 h):	560 mg/l
Pentafluoroethane:	LC_{50} (4 d):	81,8 mg/l
	LC_{50} (72 h):	450 mg/l
	LC_{50} (48 h):	450 mg/l
	LC_{50} (24 h):	560 mg/l
	LC_0 (4 d):	200 mg/l

Acute toxicity – Aquatic invertebrates:

Isobutane:	LC_{50} (48 h):	14,22 – 69,43 mg/l
1,1,1,2-Tetrafluoroethane	EC_{50} (24 h):	960 mg/l
Pentafluoroethane:	EC_{50} (48 h):	97,9 – 200 mg/l
	EC_{50} (24 h):	960 mg/l
	NOEC (48 h)	97,9 – 200 mg/l

Toxicity to Aquatic Plants

Isobutane:	EC_{50} (4 d):	7,71 – 19,37 mg/l
1,1,1,2-Tetrafluoroethane	EC_{50} (4 d)	142 mg/l
	EC_{50} (4 d)	100 mg/l (fresh water algae)
	EC_{50} (72 h)	114 – 118 mg/l
	NOEC (72 h)	13,2 mg/l
Pentafluoroethane:	EC_{50} (4 d):	142 mg/l
	EC_{50} (72 h):	114 – 118 mg/l
	NOEC (72 h)	13,2 mg/l

Toxicity to Microorganisms

1,1,1,2-Tetrafluoroethane	EC_{50} (6 h):	730 mg/l
	EC_{10} (6 h):	730 mg/l

12.2 Persistence and degradability

None of the compinents are not readily biodegradable.

12.3 Bioaccumulative potential

Components:	log Pow
Isobutane	2,8
1,1,1,2-Tetrafluoroethane	1,06 (bioaccumulation is unlikely)
Pentafluoroethane:	1,48

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

This product is not identified as a PBT/vPvB substance.

12.6 Other adverse effects

Global Warming Potential: 3143
Ozone Depletion Potential: 0
Contains fluorinated greenhouse gases When discharged in large quantities may contribute to the greenhouse effect. For GWP value of mixture and quantities, refer to container label.

Component Information

Isobutane
EU. Regulation 517/2014/EU on FGGs- Global warming potential: 3, Annex IV: Method of calculating the total GWP of a mixture: The GWP of the following non-fluorinated substances are used to calculate the GWP of mixtures.

Pentafluoroethane
EU. F-Gases Subject to Emission Limits/Reporting (Annexes I, II), Regulation 517/2014/EU on FGGs- Global warming potential: 3500 Annex 1: Fluorinated greenhouse gases referred to in Point 1 of Article 2; Section 1:Hydrofluorocarbons (HFCs) and its mixtures.

1,1,1,2-Tetrafluoroethane
EU. F-Gases Subject to Emission Limits/Reporting (Annexes I, II), Regulation 517/2014/EU on FGGs- Global warming potential: 1430 Annex 1: Fluorinated greenhouse gases referred to in Point 1 of Article 2; Section 1:Hydrofluorocarbons (HFCs) and its mixtures

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

General information:
Avoid discharges to atmosphere. Do not discharge into any place where its accumulation could be dangerous. Refer to manufacturer or supplier for information on recovery or recycling.

Disposal methods
Refer to the EIGA code of practice (Doc.30 "Disposal of Gases", http://www.eiga.org) for more guidance on suitable disposal methods. Dispose of container via supplier only. Discharge, treatment, or disposal may be subject to national, state, or local laws.

European Waste Codes:
Container: 14 06 01*: chlorofluorocarbons, HCFC, HFC

EU legistlation: Directive 2008/98/ETY, 2014/955/EU, EU Comission Regulation nr 1357/2014.

National legistlation (FI): Waste Act, 646/2011, 1104/2011, 195/2012, 1178/2013, 25/2014, 410/2014, 528/2014, 1062/2015, 1518/2015, 328/2016, 996/2016, 626/2017, 834/2017, 321/2018, 445/2018, 686/2018, 757/2018, 967/2018, 247/2019, 438/2019, 1421/2019.

SECTION 14: TRANSPORT INFORMATION, *ADR 2015 ja RID 2015, IMDG 37-14, IATA/ICAO 2015*

14.1 UN Number

ADR

14.1 UN Number	UN 1078
14.2 UN Proper Shipping Name	REFRIGERANT GAS N.O.S. (Pentafluoroethane, 1,1,1,2-Tetrafluoroethane)
14.3 Transport Hazard Classes	
Class	2
Labels	2.2
Hazard No. (ADR)	20
Tunnel restriction code	(C/E)
14.4 Packing Group	–
14.5 Environmental Hazards	Not applicable
14.6 Special precautions for users	–

RID

14.1 UN Number	UN 1078
14.2 UN Proper Shipping Name	REFRIGERANT GAS N.O.S. (Pentafluoroethane, 1,1,1,2-Tetrafluoroethane)
14.3 Transport Hazard Classes	
Class	2
Labels	2.2
14.4 Packing Group	–
14.5 Environmental Hazards	Not applicalble
14.6 Special precautions for user:	–

IMDG

14.1 UN Number	UN 1078
14.2 UN Proper Shipping Name	REFRIGERANT GAS N.O.S. (Pentafluoroethane, 1,1,1,2-Tetrafluoroethane)
14.3 Transport Hazard Classes	
Class	2.2
Labels	2.2
EmS No.	F-C, S-V
14.3 Packing Group	–
14.5 Environmental Hazards	Not applicable
14.6 Special precautions for user	–

IATA

14.1 UN Number	UN 1078
14.2 UN Proper Shipping Name	REFRIGERANT GAS N.O.S. (Pentafluoroethane, 1,1,1,2-Tetrafluoroethane)
14.3 Transport Hazard Classes	
Class	2.2
Labels	2.2
14.4 Packing Group	–
Passenger and cargo aircraft:	200
Cargo aircraft only:	200
14.5 Environmental Hazards	Not applicable
14.6 Special precautions for user	–

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

Not applicable.

Additional identification:

- Avoid transport on vehicles where the load space is not separated from the driver's compartment.
- Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency.
- Before transporting product containers ensure that they are firmly secured.
- Ensure that the container valve is closed and not leaking.
- Container valve guards or caps should be in place.
- Ensure adequate air ventilation

SECTION 15: REGULATORY INFORMATION

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

EU Regulations

- Regulation (EC) No 517/2014 on fluorinated greenhouse gases
- Regulation (EC) No 1907/2006 – Annex XVII – Restrictions on manufacture, placing on the market and use of certain dangerous substances, mixtures and articles.
- Council Directive 89/391/EEC on the introduction of measures to encourage improvements in the safety and health of workers at work.
- Regulation (EU) 2016/425 on personal protective equipment.
- Directive 2014/34/EU on equipment and protective systems intended for use in potentially explosive atmospheres (ATEX).
- Only products that comply with the food regulations (EC) No. 1333/2008 and (EU) No. 231/2012 and are labelled as such may be used as food additives.
- This Safety Data Sheet has been produced to comply with Regulation (EU) 2015/830.

National regulations:

- Chemicals Act 599/2013
- Act amending the Chemicals Act 554/2014, 746/2016, 199/2017, 656/2018, 756/2018, 711/2020.
- Classification and Labeling of Chemicals 807/2001: amendment 687/2005, 206/2007, 655/2008,6/2010

- Government Decree on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain paints and varnishes and vehicle refinishing products 837/2005.
- Government Decree on the limitation of emissions to air from certain activities and Installations using organic solvents 64/2015
- Waste Act, 646/2011, 1104/2011, 195/2012, 1178/2013, 25/2014, 410/2014, 528/2014, 1062/2015, 1518/2015, 328/2016, 996/2016, 626/2017, 834/2017, 321/2018, 445/2018, 686/2018, 757/2018, 967/2018, 247/2019, 438/2019, 1421/2019.

Concentrations known as harmful 268/2014

15.2 Chemical safety assessment

Chemical Safety Assessment has been carried out for these substances.

SECTION 16: OTHER INFORMATION

Revision information: Not relevant.

Data sources of this SDS

Safety Data Sheet provided by the manufacturer.
Legislation on hazardous chemicals valid at the time of writing.
European Chemicals Agency, Guidance on the compilation of safety data sheets / REACH Regulation (EU) 1907/2006, ARTICLE 31: Requirements for safety data sheets.
European Chemicals Agency, Information on registered substances.
International Programme on Chemical Safety.

WWW-SOURCES

echa.europa.eu
eiga.org
esis.jrc.ec.europa.eu
eur-lex.europa.eu
atsdr.cc.gov
www.lvm.fi/en/home
http://toxnet.nlm.nih.gov/
http://www.who.int/ipcs/en/
www.ericards.net

Rating methods of classification

Regulation (EU) No 1272/2008 (CLP), Regulation on classification, labeling and packaging of substances and mixtures. Regulation (EU) 1999/45 (DPD)

Precautionary, Wording of the H-statements in section 2 and 3

H220 Extremely flammable gas
H280 Contains gas under pressure; may explode on heated.

Classification according to Regulation (EC) N:o 1272/2008 as amended

Press. Gas Liquefied Gas; H280

Training information

It is recommended that persons handling the product have minimum training in the prevention and protection of work-related hazards. This makes it easier to understand and interpret the safety data sheet and product labels. Users of breathing apparatus must be trained. Ensure all operators understand the flammability hazard.

Other information

Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out. Ensure adequate air ventilation. Ensure all national/local regulations are observed. Ensure equipment is adequately earthed. Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted.

Disclaimer:

This information is provided without warranty. The data is trusted to be flawless. This information should be used to make an independent determination of the practices that protect workers and the environment.
The information contained in this MSDS is based on sources, scientific and technical knowledge, existing national and EU legislation. The release is intended to serve the safe use of the product. We do not know or control the working methods or conditions of the users of the product. The user is always ultimately responsible for taking measures to ensure compliance with the regulations in force in the handling, storage, use and disposal of chemicals. In this context, it is noted that the information provided in the SDS also helps employers to fulfill their obligations under Directive 98/24 / EU10 on the protection of the health and safety of workers from the risks related to chemical agents at work. On the basis of the safety data sheet, users should be able to take the necessary measures in the field of health and safety to ensure safety and protect the environment.

The Safety Data Sheet is provided for in Article 31 of REACH Regulation (EU) No 1907/2006 and in Annex II to the Regulation.