Date of issue: 2019/02/18
Last revised date: 2021/01/14 SAFETY DATA SHEET

Product name / chemical name: R434A / C_2HF_5 63,2 %; $C_2H_3F_3$ 18 %; $C_2H_2F_4$ 16 %; C_4H_{10} 2,8 % (% by weight)

SDS according to setting: EU 2015/830

(*) only 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 name	R434A
Chemical name, formula	C_2HF_5 63,2 %; $C_2H_3F_3$ 18 %; $C_2H_2F_4$ 16 %; C_4H_{10} 2,8 %
CAS No, EC No, REACH-reg.no	Pentafluoroethane C_2HF_5, CAS 354-33-6, EC 206-557-8, REACH 01-2119485636-25 (63,2 % w/w) 1,1,1-Trifluoroethane $C_2H_3F_3$, CAS 420-46-2, EC 206-996-5, REACH 01-2119492869-13 (18 % w/w) 1,1,1,2-Tetrafluoroethane $C_2H_2F_4$, CAS 811-97-2, EC 212-377-0, REACH 01-2119459374-33 (16 % w/w) Isobutane C_4H_{10}, CAS nr 75-28-5, EC 200-857-2, REACH 01-2119485395-27 (2,8 % w/w)

1.2 Relevant identified uses of the substance

Identified uses	Industrial and professional use. Perform risk assessment prior to use. Refrigerant. Transfilling gas or liquid. Using gas alone or in mixtures for the calibration of analysis equipment.
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	00390 HELSINKI, FINLAND
Telephone	+358 20 5588 250
E-mail	info@darment.fi
www-site, www-shop site	darment.fi, kauppa.darment.fi

Emergency telephone numbers in Finland
tel. **112, Your country:_____**
tel. **0800 147 111,** HUS Poison Information Center of Helsinki, free calls fi, 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.
H280: Contains gas under pressure; may explode if heated.

2.2 Label Elements

Warning label **Signal Words:** **Warning**

Hazard Statement/-s:

H280 – Contains gas under pressure; may explode if heated.

Precautionary Statements
Prevention: None.
Response: None.
Storage: P403: Store in a well-ventilated place.
P410: Protect from sunlight
Disposal: None.

Supplemental label information
EIGA-0783: Contains fluorinated greenhouse gases falling within Kyoto Protocol
EIGA-As: Asphyxiant in high concentrations.

2.3 Other hazards

Vapours are heavier than air and can cause rapid suffocation by reducing oxygen available for breathing
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
1,1,1-Trifluoroethane, $C_2H_3F_3$, R143a	420-46-2 206-996-5 01-2119492869-13	18	Gas under pressure; Liquefied gas; H280, Flammable gas category 1; H220
Isobutane, C_4H_{10}, R600a	75-28-5 200-857-2 01-2119485395-27	2,8	Gas under pressure; Liquefied gas; H280, Flammable gas category 1; H220
Pentafluoroethane, C_2HF_5, R125	354-33-6 206-557-8 01-2119485636-25	63,2	Gas under pressure; Liquefied gas; H280
1,1,1,2-Tetrafluoroethane, $C_2H_2F_4$, R134a	811-97-2 212-377-0 01-2119459374-33	16,0	Gas under pressure; Liquefied gas; H280

All concentrations are nominal. Classification according to 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.

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. If medical assistance is not immediately available, flush an additional 15 minutes.
DO NOT ALLOW PATIENT TO RUB THE EYES OR TIGHTLY SHUT THE EYES.

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. Avoid giving milk, oils and alcohol.

4.2 Most important symptoms an effects, acute and delayed

Hazards: Respiratory arrest. May cause permanent eye damage. 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

Treatment: Thaw frosted parts with lukewarm water. Do not rub affected area. Get immediate medical advice/attention. Or call 112 and ask advice.

SECTION 5: FIREFIGHTING MEASURES

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

5.1 Extinguishing media

Suitable extinguishing media:
In case of fire in the surroundings: use appropriate extinguishing agent. Water, CO2.
Unsuitable Extinguishing media: None.
Large fire: Cool cylinder/tank.

5.2 Special hazards arising from the substance or mixture

Fire or exessive heat may produce hazardous decomposition products which are extremely toxic.
Decomposition may produce toxic fumes of: carbon monoxide (CO), carbon dioxide (CO2), hydrogen fluoride other pyrolysis products typical of burning organic material. Contains low boiling substance: Closed containers may rupture due to pressure buildup under fire conditions.

5.3 Advice for firefighters

Special fire fighting procedures: In case of fire stop leak 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 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 combustible material.

7.3 Specific end use(s)

See section 1.2.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure limit values

Chemical name	Type	Exposure limit	Reference
Isobutane, R600a	HTP 15min	1000 ppm 2400 mg/m3	Finland. HTP: values 2018: Concentrations known to be harmful. 07/2018
	HTP 8h	800 ppm 1900 mg/m3	Finland. HTP: values 2018: Concentrations known to be harmful. 07/2018

DNEL-values

Critical ingredient	Type	Value	Comments
1,1,1-Trifluoroethane	Worker – inhalative, longterm – systemic	38800 mg/m3	Repeated dose toxicity.
	General population – inhalative, longterm – systemic	10700 mg/m3	Repeated dose toxicity.
Isobutane	n/a		
Pentafluoroethane	Workers - by inhalation, systemic, long-term	16444 mg/m3	Repeated dose toxicity.
	General population – inhalation, longterm – systemic	1753 mg/m3	Repeated dose toxicity.
1,1,1,2-Tetrafluoroethane	Workers - by inhalation, systemic, long-term	13936 mg/m3	
	General population – inhalation, longterm – systemic	2476 mg/m3	Repeated dose toxicity.

PNEC-values

Critical ingredient	Type	Value	Comments
1,1,1-Trifluoroethane	Aquatic (freshwater)	350 µg/l	-
Isobutane	n/a		
Pentafluoroethane	Aquatic (freshwater)	0,1 mg/l	-
	Aquatic (intermit.releases)	1 mg/l	-
	Sediment (freshwater)	0,6 mg/kg	-
1,1,1,2-Tetrafluoroethane	Aquatic (freshwater)	0,1 mg/l	-
	Aquatic (intermit.releases)	1 mg/l	-
	Aquatic (marine water)	0,01 mg/l	-
	Sewage treatment plant	73 mg/l	-
	Sediment (freshwater)	0,75 mg/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: See Hand protection below.

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 Persona protective equipment – safety footwear.

Respiratory protection: Self-contained breathing apparatus must be available in case of emergency. Vapours are heavier than air and can cause suffocation by reducing the oxygen available for breathing.

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	Slight ethereal.
Odor threshold	Subjective and inadequate to warn of over exposure.
pH	Not applicable.
Melting point	No data available.
Boiling point	-44,9°C (1013 hPa)
Critical temperature (°C)	77,8°C
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.
Vapor pressure at 25°C	11,2 bar
Critical pressure 25°C bar a	39,30
Relative density (water=1)	Liquid 1096 kg/$m^{3,}$ 25°C, Gas 53,1 kg/m^3, 25°C
Solubility (-ies), 25°C	Not soluble in water.
Partition coefficient, n-oktanol/water	Not known.
Autoignition temperature	Not applicable.
Decomposition temperature	Not known.
Viscosity, kinematich / dynamic	Not applicable.
Explosive properties	Not applicable.
Oxidizing properties	Not applicable.

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

Stable under normal conditions. See the effects described in sub-section below.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions will not occur under normal transport or storage conditions. Decomposition may occur on exposure to conditions or materials listed below.

10.4 Conditions to avoid

Avoid open flames and high-energy ignition sources. The product is not flammable in air at ambient temperature and pressure. Pressurized with air or oxygen, the mixture may become flammable.

10.5 Incompatible materials

Strong oxidising agents, strong acids.

10.6 Hazardous decomposition products

Under normal conditions of storage and use hazardous decomposition products should not be produced. In combustion emits toxic fumes.

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

1,1,1- Trifluoroethane:	LC0 (4 h)	(Rat)	591000 ppm
Isobutane	LC50 (2 h)	(Mouse)	520400 ppm
	LC50 (15 min)	(Rat)	800000 ppm
Pentafluoroethane	LCLo (4 h)	(Rat)	800000 ppm
1,1,1,2-Tetrafluoroethane	LCLo (4 h)	(Rat)	567000 ppm

Repeated dose toxicity / Inhalation

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

Component information

1,1,1- Trifluoroethane:	NOEC	(Rat)	40000 ppm
Isobutane	NOAEC	(Rat)	4000 ppm
	LOAEC	(Rat)	12000 ppm
Pentafluoroethane	NOAEL	(Rat)	50000 ppm
1,1,1,2-Tetrafluoroethane	NOAEC	(Rat)	50000 ppm

Skin corrosion / irritation
Slightly irritating. The splashes of the liquid or the pulverizations can cause burns for cold.

Serious eye damage / eye irritation

Slightly irritating. The splashes of the liquid or the pulverizations it can cause burns for cold.

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:

1,1,1- Trifluoroethane:	LC10 (4 d)	40 mg/l
Isobutane	LC50 (4 d)	24,11 mg/l
Pentafluoroethane	LC50 (4 d)	81,8 mg/l
1,1,1,2-Tetrafluoroethane	LC50 (4 d)	450 mg/l

Acute toxicity – Aquatic invertebrates:

1,1,1- Trifluoroethane:	n/a	
Isobutane	LC50 (2 d)	14,22 mg/l
Pentafluoroethane	EC50 (2 d)	97,9 mg/l
1,1,1,2-Tetrafluoroethane	EC50 (1 d)	960 mg/l

Toxicity to aquatic plants:

1,1,1- Trifluoroethane:	EC50 (3 d)	71 mg/l
Isobutane	EC50 (4 d)	7,71 mg/l
Pentafluoroethane	EC50 (4 d)	142 mg/l
1,1,1,2-Tetrafluoroethane	EC50 (4 d)	142 mg/l

Toxicity to Micro-organisms:

1,1,1- Trifluoroethane:	EC0 (6 h)	730 mg/l
Isobutane	n/a	
Pentafluoroethane	n/a	
1,1,1,2-Tetrafluoroethane	EC50 (6 h)	730 mg/l

12.2 Persistence and degradability

Not biodegrable

12.3 Bioaccumulative potential

No bioaccumulation potential

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB

Not classified as PBT or vPvB.

12.6 Other adverse effects

Global Warming Potential: 3245. Contains fluorinated greenhouse gases. Release of large quantities into the atmosphere may contribute to he greenhouse effect.

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

1,1,1- Trifluoroethane, EU. F-Gases Subject to Emission Limits/Reporting (Annexes I, II), Regulation 517/2014/EU on FGGs- Global warming potential: 4470 Annex 1: Fluorinated greenhouse gases referred to in Point 1 of Article 2; Section 1:Hydrofluorocarbons (HFCs) and its mixtures

Isobutane
EU. Regulation 517/2014/EU on FGGs- Global warming potential: 3 Annex 4: 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:
Do not discharge into any place where its accumulation could be dangerous. Consult supplier for specific recommendations.
Do not discharge into areas where there is a risk of forming an explosive mixture with air.
Waste gas should be flared through a suitable burner with flash back arrestor.

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

14.1 UN Number	UN 3163
14.2 UN Proper Shipping Name	LIQUEFIED GAS, N.O.S. (1,1,1-Trifluoroethane, Isobutane)
14.3 Transport Hazard Class(es)	2
14.4 Packing Group	–
Classification code	2A
Hazard No. (ADR)	20
Labels	2.2
Tunnel restriction code	(C/E)
14.5 Environmental Hazards	Not applicable
14.6 Special precautions for users	–

RID

14.1 UN Number	UN 3163
14.2 UN Proper Shipping Name	LIQUEFIED GAS, N.O.S. (1,1,1-Trifluoroethane, Isobutane)
14.3 Transport Hazard Classes	2
14.4 Packing Group	–
Classification code	2A
Labels	2.2
14.5 Environmental Hazards	Not applicalble
14.6 Special precautions for user:	–

IMDG

14.1 UN Number	UN 3163
14.2 UN Proper Shipping Name	LIQUEFIED GAS, N.O.S. (1,1,1-Trifluoroethane, Isobutane)
14.3 Transport Hazard Classes	2.2
14.4 Packing Group	–
Labels	2.2
EmS No.	F-C, S-V
14.5 Environmental Hazards	Not applicable
14.6 Special precautions for user	–

IATA

14.1 UN Number	UN 3163
14.2 UN Proper Shipping Name	LIQUEFIED GAS, N.O.S. (1,1,1-Trifluoroethane, Isobutane)
14.3 Transport Hazard Classes	2.2
14.4 Packing Group	–
Packing instructions (cargo) 200	
Packing instructions (pass.)	200
14.5 Environmental Hazards	Not applicable
14.6 Special precautions for user	–
Other information	

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: Greenhouse fluorinated gas falling within Kyoto Protocol
- 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.
- Directive 89/686/EEC on personal protective equipment.
- 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 legislation:

- Chemicals Act 599/2013
- Chemical Regulation 675/1993
- Classification and Labeling of Chemicals 807/2001: amendment 687/2005, 206/2007, 655/2008,6/2010
- Security seal for the cover and danger symbol for the visually impaired 414/2011
- Regulation on the names of substances 5/2010, amendment 1123/2010
- 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 of volatile organic compounds due to the use of organic solvents in certain activities and installations 435/2001, as amended
- Waste Act 646/2011
- Concentrations known as harmful 268/2014

15.2	Chemical safety assessment

No Chemical Safety Assessment has been carried out.

SECTION 16: OTHER INFORMATION

Revision information: no 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 heating.

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

Press. Gas Liq. 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.ASHRAE: A2L

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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.