



## SAFETY DATA SHEET

### Solstice® YF (R-1234yf)

According to the REACH etc. (Amendment etc.) (EU Exit) Regulations 2020 No. 1577, as amended.  
According to Regulation (EC) No 1907/2006, Annex II, as amended.  
Commission Regulation (EU) 2020/878 of 18 June 2020.

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

##### 1.1. Product identifier

Product name	Solstice® YF (R-1234yf)
Chemical name	2,3,3,3-Tetrafluoropropen
CAS number	754-12-1
EC number	468-710-7

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

Identified uses	Heat transfer fluid. Refrigerant. Formulation of mixtures.
Uses advised against	For professional and industrial installations and use only.

##### 1.3. Details of the supplier of the safety data sheet

Supplier	Cantaş Kimya Sanayi ve Ticaret A.Ş. Demirciler OSB Mevkii, Gebze V (Kimya) htisas OSB, Fatma B r Caddesi No:5/1 41455 Dilovas / Kocaeli Tel: 0212 910 1260 / (Monday - Friday, 8:30-17:30) E-posta: info@cantaskimya.com
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Manufacturer	Honeywell International Inc. 115 Tabor Road Morris Plains, NJ 07950-2546 USA Tel: 800-522-8001 / +1-973-455-6300 (Monday - Friday, 9:00-17:00)
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##### 1.4. Emergency telephone number

Emergency telephone	Cantaş: +90 212 910 12 60
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#### SECTION 2: Hazards identification

##### 2.1. Classification of the substance or mixture

Classification (SI 2019 No. 720) / (EC 1272/2008)

Physical hazards	Flam. Gas 1A - H220 Press. Gas (Liq.) - H280
Health hazards	Not Classified
Environmental hazards	Not Classified

##### 2.2. Label elements

EC number	468-710-7
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Hazard pictograms



Signal word	Danger
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Hazard statements	H220 Extremely flammable gas. H280 Contains gas under pressure; may explode if heated.
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**Precautionary statements**

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
 P381 Eliminate all sources of ignition in case of leakage.  
 P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.  
 P410+P403 Protect from sunlight. Store in a well-ventilated place.

### 2.3. Other hazards

Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing. Misuse or intentional inhalation abuse may cause death without warning symptoms, due to cardiac effects. Rapid evaporation of the product may cause frostbite. It can displace oxygen, causing rapid suffocation.

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

<b>Product name</b>	Solstice® YF (R-1234yf)
<b>Chemical name</b>	2,3,3,3-Tetrafluoropropen
<b>CAS number</b>	754-12-1
<b>EC number</b>	468-710-7
<b>Amount w/w</b>	>99,50 %

### 3.2. Mixtures

<b>Description</b>	Not applicable.
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## SECTION 4: First aid measures

### 4.1. Description of first aid measures

<b>General information</b>	Get medical attention immediately. Show this Safety Data Sheet to the medical personnel.
<b>Inhalation</b>	Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Get medical attention if any discomfort continues.
<b>Ingestion</b>	Remove any dentures. Do not induce vomiting unless under the direction of medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Maintain an open airway. Loosen tight clothing such as collar, tie or belt.
<b>Skin contact</b>	Thaw frosted parts with lukewarm water. Do not rub affected area. Get medical attention immediately.
<b>Eye contact</b>	Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 10 minutes.
<b>Protection of first aiders</b>	First aid personnel should wear appropriate protective equipment during any rescue. It may be dangerous for first aid personnel to carry out mouth-to-mouth resuscitation.

### 4.2. Most important symptoms and effects, both acute and delayed

<b>General information</b>	High vapour concentrations can cause headaches, dizziness, drowsiness, and nausea, and may lead to unconsciousness. May cause cardiac arrhythmia.
<b>Inhalation</b>	No specific symptoms known. May cause respiratory irritation.
<b>Ingestion</b>	Due to the physical nature of this product, it is unlikely that ingestion will occur.
<b>Skin contact</b>	Spray will evaporate and cool rapidly and may cause frostbite or cold burns if in contact with skin.



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**Eye contact** Frostbite.

### 4.3. Indication of any immediate medical attention and special treatment needed

**Notes for the doctor** Treat symptomatically.

**Specific treatments** Due to possible heart rhythm disorders; Catecholamine drugs such as epinephrine should be used with special caution and only in cases of emergency life support.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

**Suitable extinguishing media** Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog.

**Unsuitable extinguishing media** Do not use water jet as an extinguisher, as this will spread the fire.

### 5.2. Special hazards arising from the substance or mixture

**Specific hazards** Containers can burst violently or explode when heated, due to excessive pressure build-up. Vapours may form explosive mixtures with air.

**Hazardous combustion products** Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Hydrogen fluoride (HF). Fluorinated compounds.

### 5.3. Advice for firefighters

**Protective actions during firefighting** Evacuate area. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. If a leak or spill has not ignited, use water spray to disperse vapours and protect men stopping the leak. Control run-off water by containing and keeping it out of sewers and watercourses. If risk of water pollution occurs, notify appropriate authorities. Leaking gas fire: Do not extinguish, unless leak can be stopped safely.

**Special protective equipment for firefighters** Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Firefighter's clothing will provide a basic level of protection for chemical incidents.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

**Personal precautions** No action shall be taken without appropriate training or involving any personal risk. Keep unnecessary and unprotected personnel away from the spillage. Wear protective clothing as described in Section 8 of this safety data sheet. Follow precautions for safe handling described in this safety data sheet. Wash thoroughly after dealing with a spillage. Do not touch or walk into spilled material. Eliminate all sources of ignition.

### 6.2. Environmental precautions

**Environmental precautions** Avoid release to the environment. Stop leak if safe to do so. Contain and collect extinguishing water.

### 6.3. Methods and material for containment and cleaning up

**Methods for cleaning up** Wear protective clothing as described in Section 8 of this safety data sheet. Clear up spills immediately and dispose of waste safely. Flush contaminated area with plenty of water. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority. Ventilate closed spaces before entering them. Use only non-sparking tools.



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### 6.4. Reference to other sections

**Reference to other sections** For safety handling, see section 7. For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

#### Usage precautions

Never attempt to lift cylinder by its cap. Do not drag, slide or roll cylinders. Use equipment defined for cylinder pressure. Use a device that prevents backflow in the piping system. Close the valve after each use and when emptying. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Read and follow manufacturer's recommendations. Take precautionary measures against static discharge. Avoid discharge into drains. Wear protective clothing as described in Section 8 of this safety data sheet. Good personal hygiene procedures should be implemented. Keep away from food, drink and animal feeding stuffs.

Valve protection caps and valve threaded outlet plugs must remain in place as long as the container is securely piped to use with the valve outlet port. Use a control valve or orifice in the discharge path to prevent backflow into the cylinder. Take care that the gas does not flow back into the cylinder. Apply a pressure reducing regulator (< 3000 psig) when connecting the cylinder to reduce pressure (< 3000 psig) piping or systems. Close the valve after each use and when emptying. DO NOT change or force solid connections. Make sure that no water leaks into the gas cylinder. Never try to lift the cylinders by the cover. Do not pull, slide or roll the rollers. Use for proper wheelbarrow roller movement.

#### Advice on general occupational hygiene

Wash promptly if skin becomes contaminated. Do not eat, drink or smoke when using this product. Change work clothing daily before leaving workplace. Take off contaminated clothing. Wash at the end of each work shift and before eating, smoking and using the toilet.

### 7.2. Conditions for safe storage, including any incompatibilities

#### Storage precautions

Keep horizontal design tube/drum/tanks horizontal, vertical design tube/drum/tank upright. Protect containers from damage. Protect from sunlight. Keep away from flammable and combustible materials. Only store in correctly labelled containers. Keep container tightly closed, in a cool, well ventilated place. Store at temperatures not exceeding 52°C. Keep only in the original container. Separate full containers from empty containers. Store away from incompatible materials (see Section 10).

#### Storage class

Do not store together with the following product types: Org. Perox. = Organic peroxide Oxidising agents. Flam. Liq. = Flammable liquid Flam. Sol. = Flammable solid Pyr. Liq. = Pyrophoric liquid Pyr. Sol. = Pyrophoric solid Hazardous substances that develop flammable gases in contact with water Expl. = Explosive

### 7.3. Specific end use(s)

#### Specific end use(s)

The identified uses for this product are detailed in Section 1.2.



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### SECTION 8: Exposure controls/Personal protection

#### 8.1. Control parameters

<b>PNEC</b>	Fresh water; 0.1 mg/l
	Intermittent release; 1 mg/l
	Sediment (Freshwater); 1.77 mg/kg, dry weight
	Soil; 1.54 mg/kg, dry weight
	marine water; 0.01 mg/l
	Sediment (Marinewater); 0.178 mg/kg, dry weight

#### 8.2. Exposure controls

##### Protective equipment



##### Appropriate engineering controls

Provide adequate ventilation. Personal, workplace environment or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Use process enclosures, local exhaust ventilation or other engineering controls as the primary means to minimise worker exposure. Personal protective equipment should only be used if worker exposure cannot be controlled adequately by the engineering control measures. Ensure control measures are regularly inspected and maintained. Ensure operatives are trained to minimise exposure.

##### Eye/face protection

Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Personal protective equipment that provides appropriate eye and face protection should be worn. Unless the assessment indicates a higher degree of protection is required, the following protection should be worn: Tight-fitting safety glasses.

##### Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. To protect hands from chemicals, wear gloves that are proven to be impervious to the chemical and resist degradation. To protect hands against cold burns, gloves must comply with the EN 511 standard. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. Frequent changes are recommended.

##### Other skin and body protection

Appropriate footwear and additional protective clothing complying with an approved standard should be worn if a risk assessment indicates skin contamination is possible. Wear anti-static protective clothing if there is a risk of ignition from static electricity.

##### Hygiene measures

Provide eyewash station and safety shower. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Clean equipment and the work area every day. Good personal hygiene procedures should be implemented. Wash at the end of each work shift and before eating, smoking and using the toilet. When using do not eat, drink or smoke. Preventive industrial medical examinations should be carried out. Warn cleaning personnel of any hazardous properties of the product.



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<b>Respiratory protection</b>	Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Ensure all respiratory protective equipment is suitable for its intended use and is 'UKCA'-marked. Check that the respirator fits tightly and the filter is changed regularly. Gas and combination filter cartridges suitable for intended use should be used. Gas filter, type AX. Full face mask respirators with replaceable filter cartridges suitable for intended use should be used. Half mask and quarter mask respirators with replaceable filter cartridges suitable for intended use should be used.
<b>Environmental exposure controls</b>	Keep container tightly sealed when not in use.

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

<b>Appearance</b>	Liquefied gas
<b>Colour</b>	Colourless
<b>Odour</b>	Mild ethereal odor.
<b>Odour threshold</b>	No information available.
<b>pH</b>	Not applicable.
<b>Melting point</b>	-152,2°C
<b>Initial boiling point and range</b>	-29°C
<b>Flash point</b>	Not applicable.
<b>Evaporation rate</b>	Not applicable.
<b>Flammability (solid, gas)</b>	Flammable.
<b>Upper/lower flammability or explosive limits</b>	Lower flammable/explosive limit: 6,2 % Yöntem: ASTM E681 Upper flammable/explosive limit: 12,3 % Yöntem: ASTM E681 All percentages displayed expressed as volume/volume.
<b>Vapour pressure</b>	5800 hPa @ 20°C
<b>Vapour density</b>	4 (Air = 1.0)
<b>Relative density</b>	No information available.
<b>Density or relative density</b>	0,0048 g/cm <sup>3</sup> (20 °C)
<b>Solubility(ies)</b>	198,2 mg/L water @ 24°C
<b>Partition coefficient</b>	log Pow: 2 (25 °C)
<b>Auto-ignition temperature</b>	405°C
<b>Decomposition Temperature</b>	No information available.
<b>Viscosity</b>	Not applicable.
<b>Explosive properties</b>	Not explosive.
<b>Oxidising properties</b>	Does not meet the criteria for classification as oxidising.
<b>Particle characteristics</b>	No information available.



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### 9.2. Other information

Other information	Minimum ignition energy: 5 - 10 J
Molecular weight	114 g/mol
Combustion rate	15 mm/s

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Reactivity	There is no danger of reaction.
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### 10.2. Chemical stability

Stability	Stable at normal ambient temperatures and when used as recommended. Follow the precautionary recommendation and avoid inappropriate items and conditions.
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### 10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	Vapors may form flammable mixtures with air. May react with strong oxidizing agents. Flammable gas.
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### 10.4. Conditions to avoid

Conditions to avoid	Heat, flames and sparks.
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### 10.5. Incompatible materials

Materials to avoid	Avoid contact with acids and alkalis. Strong oxidising agents. Oxygen. Peroxides. Peroksit bileşikleri Powdered metal. Contaminations (e.g. rust, dust, ash)
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### 10.6. Hazardous decomposition products

Hazardous decomposition products	No known hazardous decomposition products.
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## SECTION 11: Toxicological information

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

#### Acute toxicity - oral

Notes (oral LD <sub>50</sub> )	Based on available data the classification criteria are not met.
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#### Acute toxicity - dermal

Notes (dermal LD <sub>50</sub> )	Based on available data the classification criteria are not met.
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#### Acute toxicity - inhalation



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<b>Notes (inhalation LC<sub>50</sub>)</b>	LC50 >405800 ppm, Inhalation, (OECD Test Guideline 403) NOAEC 120000 ppm., Dog Test atmosphere: gaz Notes: Cardiac sensitivity Upper threshold for heart sensitivity (Dog): > 559,509 mg/m <sup>3</sup> Test atmosphere: gas Notes: Cardiac tenderness
<b>Skin corrosion/irritation</b>	
<b>Skin corrosion/irritation</b>	Based on available data the classification criteria are not met.
<b>Serious eye damage/irritation</b>	
<b>Serious eye damage/irritation</b>	Based on available data the classification criteria are not met.
<b>Respiratory sensitisation</b>	
<b>Respiratory sensitisation</b>	Based on available data the classification criteria are not met.
<b>Skin sensitisation</b>	
<b>Skin sensitisation</b>	Based on available data the classification criteria are not met.
<b>Germ cell mutagenicity</b>	
<b>Summary</b>	Based on available data the classification criteria are not met.
<b>Genotoxicity - in vitro</b>	Bacterial reverse mutation test: Positive. (OECD Guideline 471) Chromosome aberration: Negative. (OECD Guideline 473)
<b>Genotoxicity - in vivo</b>	Mammalian Erythrocyte Micronucleus Test: Negative. Type: Mouse Method of Administration: inhalation (gas) Method: OECD Test Guideline 474 DNA damage and/or repair: Negative. Type: Rat Method of Administration: inhalation (gas) Method: OECD Test Guideline 489 (in vivo sitogene-tik tahlili) Mammalian Erythrocyte Micronucleus Test: Negative. Type: Rat Method of Administration: inhalation (gas) Method: OECD Test Guideline 474
<b>Carcinogenicity</b>	
<b>Carcinogenicity</b>	Based on available data the classification criteria are not met. Negative. Weight of evidence.
<b>IARC carcinogenicity</b>	None of the ingredients are listed or exempt.
<b>Reproductive toxicity</b>	
<b>Summary</b>	Based on available data the classification criteria are not met.
<b>Reproductive toxicity - fertility</b>	Two-generation study - , Inhalation, Rat Metod: OECD Test Rehberi 416 Result: negative
<b>Reproductive toxicity - development</b>	Teratogenicity: - : , Inhalation, Rat Metod: OECD Test Rehberi 414 Result: negative
<b>Specific target organ toxicity - single exposure</b>	





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<b>Summary</b>	Based on available data the classification criteria are not met.
<b>STOT - single exposure</b>	Gaz , Inhalation, No appreciable health effects in animals have been observed at concentrations of 20000 ppm/4 hours or less.
<b>Specific target organ toxicity - repeated exposure</b>	
<b>Summary</b>	Based on available data the classification criteria are not met.
<b>STOT - repeated exposure</b>	Gaz , Inhalation, No appreciable health effects in animals have been observed at concentrations of 250 ppm/6 hours/ day or less.
<b>Aspiration hazard</b>	
<b>Aspiration hazard</b>	Based on available data the classification criteria are not met.
<b>Repeated dose toxicity</b>	
	Species: Rat, male and female NOAEL : 50000 ppm LOAEL : >50000 ppm Application Method : inhalation (gas) Exposure time: 13 weeks. Method : OECD Test Guideline 413

#### 11.2. Information on other hazards

**Information on other hazards** This product does not contain any known or suspected endocrine disruptors.

#### SECTION 12: Ecological information

<b>Ecotoxicity</b>	Not regarded as dangerous for the environment. However, large or frequent spills may have hazardous effects on the environment.
<b>12.1. Toxicity</b>	
<b>Toxicity</b>	Based on available data the classification criteria are not met.
<b>Acute aquatic toxicity</b>	
<b>Acute toxicity - fish</b>	LC <sub>50</sub> , 96 hour: >197 mg/l, Cyprinus carpio (Common carp) (OECD 203)
<b>Acute toxicity - aquatic invertebrates</b>	EC <sub>50</sub> , 48 hour: >100 mg/l, Daphnia magna (Water flea) (OECD 202)
<b>Acute toxicity - aquatic plants</b>	EC <sub>50</sub> , : >100 mg/l, Selenastrum capricornutum (OECD 201) NOEC, : >75 mg/l , Selenastrum capricornutum (OECD 201)



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#### 12.2. Persistence and degradability

**Persistence and degradability** Not readily biodegradable.  
(OECD 301F)

#### 12.3. Bioaccumulative potential

**Bioaccumulative potential** It is unlikely to bioaccumulate.

**Partition coefficient** log Pow: 2 (25 °C)

#### 12.4. Mobility in soil

**Mobility** No data available.

#### 12.5. Results of PBT and vPvB assessment

**Results of PBT and vPvB assessment** This substance is not classified as PBT or vPvB according to current UK criteria.

#### 12.6. Endocrine disrupting properties

**Endocrine disrupting properties** The product does not contain any endocrine disrupting substance.

#### 12.7. Other adverse effects

**Other adverse effects** None known.

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

##### General information

External recovery, treatment, recycling and disposal of waste should comply with all applicable local and/or national regulations.

The waste code classification is to be carried out according to the European Waste Catalogue (EWC). Waste Codes are not specific to the product, they are specific to use.

Waste codes should be determined by the user, preferably in consultation with the waste disposal authorities.

##### Disposal methods

Dispose of surplus products and those that cannot be recycled via a licensed waste disposal contractor. Empty, pressure-resistant containers should be returned to the company.

Do not pressurize, cut, weld, riveted, solder, drill, grind, or expose such containers to heat, flame, sparks or other sources of ignition. They may explode and cause injury and/or death. Unless otherwise stated: Dispose of as unused product.

### SECTION 14: Transport information

#### 14.1. UN number or ID number

UN No. (ADR/RID)	3161
UN No. (IMDG)	3161
UN No. (ICAO)	3161
UN No. (ADN)	3161



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#### 14.2. UN proper shipping name

Proper shipping name (ADR/RID)	LIQUEFIED GAS, FLAMMABLE, N.O.S. (2,3,3,3-Tetrafluoroprop-1-ene)
Proper shipping name (IMDG)	LIQUEFIED GAS, FLAMMABLE, N.O.S. (2,3,3,3-Tetrafluoroprop-1-ene)
Proper shipping name (ICAO)	LIQUEFIED GAS, FLAMMABLE, N.O.S. (2,3,3,3-Tetrafluoroprop-1-ene)
Proper shipping name (ADN)	LIQUEFIED GAS, FLAMMABLE, N.O.S. (2,3,3,3-Tetrafluoroprop-1-ene)

#### 14.3. Transport hazard class(es)

ADR/RID class	2.1
ADR/RID classification code	2F
ADR/RID label	2.1
IMDG class	2.1
ICAO class/division	2.1
ADN class	2.1

#### Transport labels



14.4. Packing group Not applicable.

#### 14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant  
 No.

#### 14.6. Special precautions for user

The transport classifications provided here are for informational purposes only and are based solely on the properties of the unpackaged material described in this Safety Data Sheet. Transport classifications may differ depending on the type of transport, packaging sizes and variations, and regional and national regulations.

EmS	F-D, S-U
ADR transport category	2
Emergency Action Code	2YE
Hazard Identification Number (ADR/RID)	23
Tunnel restriction code	(B/D)

#### 14.7. Maritime transport in bulk according to IMO instruments

Maritime transport in bulk according to IMO instruments Not applicable.



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### SECTION 15: Regulatory information

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

<b>National regulations</b>	Health and Safety at Work etc. Act 1974 (as amended). The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (SI 2009 No. 1348) (as amended) ["CDG 2009"]. EH40/2005 Workplace exposure limits.
<b>EU legislation</b>	Commission Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) Commission Regulation (EU) 2020/878 amending Annex II to Regulation (EC) No 1907/2006 (REACH). Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).
<b>Authorisations (SI 2020 No. 1577 Annex XIV) and REACH 1907/2006, Annex XIV</b>	No specific authorisations are known for this product.
<b>Restrictions (SI 2020 No. 1577 Annex XVII) and REACH 1907/2006, Annex XVII</b>	Entry number: 40
<b>Seveso Directive - Control of major accident hazards</b>	P2 Lower-tier 10 tonnes Upper-tier 50 tonnes.

#### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

### SECTION 16: Other information

<b>Abbreviations and acronyms used in the safety data sheet</b>	ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road. ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways. RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail. IATA: International Air Transport Association. ICAO: Technical Instructions for the Safe Transport of Dangerous Goods by Air. IMDG: International Maritime Dangerous Goods. CAS: Chemical Abstracts Service. ATE: Acute Toxicity Estimate. LC50: Lethal Concentration to 50 % of a test population. LD50: Lethal Dose to 50% of a test population (Median Lethal Dose). EC <sub>50</sub> : 50% of maximal Effective Concentration. PBT: Persistent, Bioaccumulative and Toxic substance. vPvB: Very Persistent and Very Bioaccumulative.
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<b>Classification abbreviations and acronyms</b>	Press. Gas (Liq.) = Gas under pressure: Liquefied gas
<b>Key literature references and sources for data</b>	Source: European Chemicals Agency, <a href="http://echa.europa.eu/">http://echa.europa.eu/</a>
<b>Classification procedures according to SI 2019 No. 720</b>	Press. Gas (Liq.) - H280: : Expert judgement., On basis of test data. Flam. Gas 1 - H220: Expert judgement., On basis of test data.
<b>Training advice</b>	Read and follow manufacturer's recommendations. Only trained personnel should use this material.
<b>Issued by</b>	Büşra TARAKCI / CRAD gbf@crad.com.tr Tel+90 216 3354600
<b>Note to organizer</b>	The certificate information is used exclusively for this SDS. No changes can be made to this SDS without the knowledge and approval of the certificate holder or the certificate information can not be used for another SDS. Otherwise, the certificate will assume no responsibility for the owner SDS.
<b>Revision date</b>	21/03/2023
<b>Revision</b>	1.1
<b>Supersedes date</b>	05/03/2021
<b>SDS number</b>	7884-2
<b>Hazard statements in full</b>	H220 Extremely flammable gas. H280 Contains gas under pressure; may explode if heated.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.