

SAFETY DATA SHEET

R417A



Form No: UGM.SDS-045
Issue Date: 14.01.2024
Revision Date:-
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According to REACH Regulation (EC) No. 1907/2006

1) Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product Name: R417A

Product type and uses: Refrigerant,

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

Relevant identified uses: Refrigerant for Industrial or Professional use

Uses advised against: No specific uses that are not recommended have been identified.

1.3. Details of the supplier of the safety data sheet

Supplier address: Cantaş Kimya Sanayi ve Ticaret A.Ş.

Supplier address: Demirciler OSB Mevkii, Gebze V(Kimya) İhtisas OSB, Fatma Börü Caddesi No:5/1
Dilovası/Kocaeli/Türkiye

Phone Number : 0 (212) 910 12 76

Fax Number : 0 (212) 219 30 61

E-mail address : info@cantaskimya.com

Contact Person : Elif Ekinci

1.4. Emergency telephone number

Cantaş Kimya : 0 (212) 910 12 60

National Poison Consultation Center Turkey: 114

Emergency Health Services Turkey: 112

Fire Brigade Turkey : 112

2) Hazards identification

2.1. Classification of the substance or mixture

Classification in accordance with (EC) Regulation 1272/2008

Press. Gas liq.; H280

2.2. Label Elements

Label In Accordance with (EC) No. 1272/2008

Hazard pictograms:



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Signal Word: Warning

Hazard Statements:

H280 Contains gas under pressure; may explode if heated.

Precautionary Statements:

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

Supplemental Label Elements:

Contains fluorinated greenhouse gases

2.3. Other hazards

Based on the available data, the product does not contain any PBT (Persistent, Bioaccumulative and Toxic substances) or vPvB (very Persistent and very Bioaccumulative substances) at concentrations exceeding 0.1%

Based on the available data, the product does not contain any endocrine disrupting at concentrations exceeding 0.1%

3) Composition/information on ingredients

3.1. Substances

Nonapplicable.

3.2. Mixture

Index No	CAS #	Product Name	Concentration (%)	EC No	Hazard Classes & Category Codes In Accordance with CLP ((EC) No. 1272/2008)	Specific Conc. Limits, M-factors and ATE's (*)
-	811-97-2	Norflurane	40-50%	212-377-0	Press. Gas H280	-
-	354-33-6	Pentafluoroethane	25-50%	206-557-8	Press. Gas H280	-
601-004-00-0	106-97-8	butane	1-10%	203-448-7	Flam. Gas 1 H220 Press. Gas H280	-

4) First aid measures

4.1. Description of first aid measures

After Inhalation:

Remove affected persons from dangerous area by observing suitable respiratory protection measures. Ensure supply fresh air.

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Irregular breathing/no breathing: Artificial respiration. Call a doctor immediately.

After Ingestion:

Not a likely route of exposure. Do not induce vomiting. If conscious, rinse mouth with water and give 200-300 ml (1/2 pint) of water. Seek medical attention immediately.

After Skin contact:

In case of contact with skin wash off immediately with soap and water. Rinse with much water in case of frostbites. Remove clothes only after unfreezing. Cover wounds with sterile dressing. Call a doctor immediately.

After Eye contact:

Remove contact lenses. Rinse eye thoroughly under running water keeping eyelids wide open and protecting the unaffected eye (at least 10 to 15 minutes). Seek medical assistance.

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

See sections 2 and 11.

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

Skin (or hair) Contact:

No additional information is available.

Eye contact:

If eye irritation persists: Get medical advice/attention.

Swallowing:

In case of discomfort, call the NATIONAL POISON CONTROL CENTER ON PHONE 114 or the doctor/...

Breathing:

If you feel unwell, seek medical advice/intervention.

Notes to physician : Apply symptomatic and supportive treatments as needed. Avoid the use of sympathomimetic drugs such as adrenaline, as they may lead to possible arrhythmias and potential subsequent cardiac arrest following exposure.

5) Firefighting measures

5.1. Extinguishing media

Suitable Extinguishing Equipment: Use an extinguishing agent suitable for the surrounding fire.

The extinguishing equipment should be of the conventional kind: CO₂, foam, powder and water mist.

Unsuitable extinguishing media: Water jet

According to REACH Regulation (EC) No. 1907/2006

5.2. Special hazards arising from the substance or mixture

Thermal decomposition will result in the evolution of very toxic and corrosive vapors (hydrogen fluoride).

Containers may explode when overheated.

5.3. Advice for firefighters

Protective measures to be taken during fire extinguishing:

Avoid breathing fire gases or vapors. Clear the area. exposed to heat

Cool containers with water spray and, if there is no risk, remove these containers from the fire area.

Take it somewhere else. Cool containers exposed to flames with water until the fire is extinguished.

If the leak or spill is not ignited, disperse vapors with water spray and clean the leak location.

Protect personnel trying to close. Flowing fire extinguishing water, sewage and water

Take control by limiting and preventing access to roads. Danger of water contamination

If so, notify the relevant authorities.

Special protective equipment for firefighters:

Positive pressure self-contained closed-circuit breathing apparatus and appropriate protective clothing get dressed. Firefighter clothing (helmets, protective boots and protective clothing) conforming to European standard EN469

gloves) will provide a basic level of protection against chemical accidents.

6) Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Any action should not be taken without proper training or involving personal danger.

Keep non-essential and unprotected persons away from spillage. Wear protective clothing as shown in section 8 of this Safety Data Sheet. For safe handling, take the precautions written in the Safety Data Sheet. Cleanse yourself thoroughly after dealing with a rash.

Procedures and emergency training for on-site cleaning and disposal of waste

Make sure it is provided. Do not touch or walk on spilled material.

6.2.Environmental precautions

Exposure to the aquatic environment is unlikely

Prevent liquid from entering sewers, storm drains, basements or work pits because vapor can create a suffocating atmosphere.

Large Spills: If environmental pollution occurs (sewage, water resources, soil or air), notify the relevant authorities.

6.3.Methods and materials for preservation and cleaning

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Wear protective clothing as shown in Section 8 of this Safety Data Sheet. Clean up spills immediately and dispose of waste safely. Have the wind at your back as you approach the debris. Wash the contaminated area with plenty of water. Cleanse yourself thoroughly after dealing with a rash. Dispose of waste at a licensed waste disposal facility in accordance with the requirements of your local Waste Disposal Authority.

6.4. References to other sections

Get information about safe use from chapter 7.

Get information about personal protective equipment from chapter 8.

Get information about liquidation from chapter 13.

7) Handling and storage

7.1. Precautions for safe handling

Usage precautions Read and follow the manufacturer's recommendations. Wear protective clothing as shown in Section 8 of this Safety Data Sheet. Keep away from food, drink and animal feed. Do not handle unless all precautionary statements have been read and understood. Do not handle broken packages without protective equipment.

Advice on general occupational hygiene

If skin becomes dirty, wash immediately. Remove contaminated clothing and wash before reuse. Wash contaminated clothing before reuse. Do not eat, drink or smoke while using this product. Wash your hands at the end of each shift and before eating, smoking and going to the toilet. Change work clothes every day before leaving the workplace.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions

Keep away from incompatible substances (see Section 10). Store according to local regulations.

Store only in its original container. Keep container tightly closed in a cool, well-ventilated area. Hold containers upright. Protect containers from damage. Protect from sunlight. In case of spillage, dam storage facilities to prevent soil and water contamination. The storage area floor must be leak-proof, seamless and non-absorbent.

7.3. Specific end use(s)

See section 1.2.

8) Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits:

norflurane

Limit Value (TWA 8-hour): WEL: Workplace exposure limit 1000 ppm 4240 mg/m³

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Butane

Limit Value (TWA 8-hour): 600 ppm 1450 mg/m³

Limit Value (STEL 15-minute): 750 ppm 1810 mg/m³

Pentafluoroethane

Limit Value (TWA 8-hour): WEL: Workplace Exposure Value. 20 ppm 20 mg/m³

DNEL

Consumer - Inhalation; Long-term systemic effects: 2476 mg/m³

Workers - Inhalation; Long-term systemic effects: 13936 mg/m³

Norflurane (CAS: 811-97-2)

DNEL

Workers - Inhalation; Long-term systemic effects: 13936 mg/m³

Consumer - Inhalation; Long-term systemic effects: 2476 mg/m³

PNEC

Fresh water; 0.1mg/l

Sea water; 0.01mg/l

Sediment (Fresh water); 0.75mg/kg

STP (Wastewater treatment plant); 73 mg/l

Pentafluoroethane (CAS: 354-33-6)

DNEL

Workers - Inhalation; systemic effects: 16 444 mg/m³

Consumer - Inhalation; systemic effects: 1753 mg/m³

PNEC

- Fresh water; 0.1mg/l

- Water, Intermittent release; 1mg/l

- Sediment (Fresh water); 0.6mg/l

8.2. Exposure controls

General protective and sanitary measures: Provide eyewash and safety shower. Do not take contaminated clothing out of the workplace. Wash contaminated clothing before reuse. Clean equipment and work area daily. Good personal hygiene procedures should be followed. Wash your hands at the end of each shift and before eating, smoking and going to the toilet. Do not eat, drink or smoke during use. Preventive industrial medical examinations should be carried out. Warn cleaning personnel about the hazardous properties of the product.

Personal protective equipment:



Respiratory Protection:

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If the risk assessment indicates the possibility of inhaling pollution in the air, respiratory protection complying with an approved standard should be used. All respiratory protective equipment Make sure that it is suitable for its intended use and is 'CE' marked. respirator Make sure it is securely seated and replace the filter regularly. Gas filters and combined filter cartridges must comply with TS/EN 14387 Standard. Full face masks with replaceable filter cartridges must comply with TS/EN 136 Standard. Half or quarter face mask respirators with replaceable filter cartridges must comply with the TS/EN 140 Standard.

Eye/Face protection

If the risk assessment indicates the possibility of contact with eyes, eye protection complying with an approved standard should be used. Personal protective equipment used for eye and face protection must comply with TS/EN 166 Standard. Unless your risk assessment indicates that a higher level of protection is required, the following protection methods should be used: Tightly fitting safety glasses.

Skin Protection:

If the risk assessment shows that contamination of the skin is possible, an approved standard Suitable shoes and additional protective clothing compatible with the

Hand protection:

If the risk assessment indicates that skin contact is possible, contact with an approved standard Compatible, chemically resistant, waterproof gloves should be used. The most suitable gloves, gloves to the glove distributor/manufacturer who can provide information on the penetration time of the material. should be selected in consultation. Gloves to protect hands against chemicals TS/EN 374 It must comply with the standard. According to the data specified by the glove manufacturer, check that the gloves maintain their protective properties throughout use, and if any deterioration is detected, replace the gloves as soon as possible. It is recommended to change gloves frequently.

Thermal risks:

There is no application.

Environmental exposure controls:

Containers should be kept tightly closed when not in use.
See Chapter 7 and Chapter 13.

Appropriate engineering controls:

Provide adequate ventilation. Check the effectiveness of ventilation or other control measures and/or to determine the necessity of use of respiratory protective devices, personal, workplace environmental or biological monitoring may be required. To minimize employee exposure as the main way; process protection methods, local exhaust ventilation and other technical Apply controls. Exposure to workers can be adequately controlled by technical control measures. If it cannot be controlled, personal protective equipment should be used. Control measures should be carried out regularly.
Ensure that it is inspected and maintained properly. To minimize exposure
Ensure operators are trained.

9) Physical and chemical properties

9.1. Information on basic physical and chemical properties

Property	Value
(a) Physical state	Liquefied Gas
(b) Colour	Clear, colorless
(c) Odour	Slight ether like odor
(d) Melting point/freezing point	Information not available
(e) Boiling point or initial boiling point and boiling range	-38 °C
(f) Flammability	Information not available
(g) Lower and upper explosion limit (7)	Information not available
(h) Flash point	Information not available
(i) Auto-ignition temperature	Information not available
(j) Decomposition temperature	Information not available
(k) pH	Information not available
(l) 1) Viscosity	Information not available
(l) 2) Kinematic viscosity	Information not available
(m) Solubility	Information not available
(n) Partition coefficient n-octanol/water (log value)	log Pow=0.21(R32)-log Pow=1.48(R125)-log Pow=1.06(R134a)
(o) Vapour pressure	1.13 (11.3bar) mPa @ 25°C
(p) Density and/or relative density	1133kg/m3
(q) Relative vapour density	4.54kg/m3
(r) Particle characteristics	Information not available

9.2. Other Information

Property	Value
Critical Heat	89°C

9.2.1. Information with regard to physical hazard classes

H280 Contains gas under pressure; may explode if heated

9.2.2. Other safety characteristics

Information not available.

10) Stability and reactivity

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10.1. Reactivity

For more detailed information, please refer to other sections of this part.

10.2. Chemical stability

Stable under normal temperature, conditions and recommended use. Stable under the prescribed storage conditions.

10.3. Possibility of hazardous reactions

There are no known potentially hazardous reactions.

10.4. Conditions to avoid

Avoid excessive heat for long periods of time. Containers may burst violently when heated due to excessive pressure build-up inside.

10.5. Incompatible materials

Avoid contact with strong oxidizing agents.

10.6. Hazardous decomposition products

When used and stored under recommended conditions, there is no decomposition.

Hydrogen fluoride may be released through thermal decomposition and hydrolysis.

Thermal decomposition and combustion products may also include carbon dioxide (CO₂) and carbon monoxide (CO) gases.

11) Toxicological information

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

a) Acute toxicity

Not classified.

Mixture does not meet the criteria for classification in accordance with Regulation (EC) No 1272/2008

Application not available.

b) Skin corrosion/irritation;

Not classified.

Mixture does not meet the criteria for classification in accordance with Regulation (EC) No 1272/2008

Application not available.

c) Serious eye damage/irritation

Not classified.

Mixture does not meet the criteria for classification in accordance with Regulation (EC) No 1272/2008

Application not available.

d) Respiratory or skin sensitisation

Not classified.

Mixture does not meet the criteria for classification in accordance with Regulation (EC) No 1272/2008

Application not available.

e) Germ cell mutagenicity

Not classified.

Mixture does not meet the criteria for classification in accordance with Regulation (EC) No 1272/2008

Application not available.

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f) Carcinogenicity

Not classified.

Mixture does not meet the criteria for classification in accordance with Regulation (EC) No 1272/2008

Application not available.

IARC carcinogenicity: None of the components have been listed or exempted.

g) Reproductive toxicity

Not classified.

Mixture does not meet the criteria for classification in accordance with Regulation (EC) No 1272/2008

Application not available.

h) Single Target Organ Toxicity-Single Exposure

Not classified.

Mixture does not meet the criteria for classification in accordance with Regulation (EC) No 1272/2008

Application not available.

i) Single Target Organ Toxicity- Repeated Exposure

Not classified.

Mixture does not meet the criteria for classification in accordance with Regulation (EC) No 1272/2008

Application not available.

j) Aspiration hazard.

Not classified.

Mixture does not meet the criteria for classification in accordance with Regulation (EC) No 1272/2008

Application not available.

11.2. Information on other hazards:

General information: The severity of the symptoms described may vary depending on the concentration and duration of exposure.

Inhalation: May cause respiratory irritation.

Ingestion: Due to the physical properties of this product, the risk of ingestion is very low.

Skin contact: Frostbite (frostbite).

Eye contact: There are no known specific symptoms.

Routes of contact : Inhalation Skin and/or eye contact.

Target organs: There are no specific target organs known.

Toxicological information on ingredients:

norflurane

Acute toxicity - inhalation

Remarks (inhalation LC₅₀): LC50 >500000 ppm, Inhalation, Rat

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According to REACH Regulation (EC) No. 1907/2006

Respiratory sensitization

Cardiac Sensitivity Threshold Breed: Dogs

Note: No observed effect level: 50000 ppm

Lowest observed effect level: 75000 ppm

Germ cell mutagenicity

Genotoxicity - in vitro Note: In vitro tests did not reveal mutagenic effects.

Repeated dose toxicity Species: Rat

CHRISTMAS: 40000 ppm

Butane

Acute toxicity - inhalation

Notes (inhalation LC₅₀) 15 min, >800000 ppm, Inhalation, Rat

Pentafluoroethane

Acute toxicity - inhalation

Remarks (inhalation LC₅₀) LC₅₀ >769000 ppm, Inhalation, Rat

Respiratory sensitization

Cardiac Sensitivity Threshold Breed: Dogs

Note: Impact level affected: 75000 ppm

Lowest observed effect level: 100 000 ppm

Germ cell mutagenicity

Genotoxicity - in vitro Ames test: Negative. Cell type: Human lymphocytes

Result: Negative

Method: Mutagenicity (in vitro mammalian cytogenetic test)

Test Method: in vitro chromosome aberrations test

Result: Negative

Cell type: Human lymphocytes

Result: Negative

Cell type: Chinese Hamster Ovarian Cells

Result: Negative

Reproductive system toxicity

Reproductive system toxicity fertility

NOAEL 50000 ppm, Inhalation, Rabbit Note: Did not show teratogenic effects in animal experiments.

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NOAEL 50000 ppm, Inhalation, Rat Note: Did not show teratogenic effects in animal experiments.

Developmental reproductive toxicity

Maternal toxicity - NOAEL: 50000 ppm, Inhalation, Rabbit Note: Did not show teratogenic effects in animal experiments.

Maternal toxicity - NOAEL: 50000 ppm, Inhalation, Rabbit Note: Did not show teratogenic effects in animal experiments.

Repeated dose toxicity

Species: Rat

Route of Administration: Inhalation

Exposure time: (4 Weeks)

CHRISTMAS: 50000 ppm

Subchronic toxicity

12) Ecological information

Ecotoxicity: Not considered hazardous to the environment. However, large or frequent spills may have harmful effects on the environment.

12.1. Toxicity

Not classified.

Mixture does not meet the criteria for classification in accordance with Regulation (EC) No 1272/2008
Application not available.

Ecological information about ingredients

Pentafluoroethane

Acute aquatic toxicity

Acute toxicity - fish LC₅₀, 96 hours: 109 mg/l, *Oncorhynchus mykiss*

Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: 100 mg/l, *Daphnia magna*

Acute toxicity - aquatic plants EC₅₀, 72 hours: 142 mg/l, Seaweed

12.2. Persistence and degradability

There is no application for the product.

Ecological information about ingredients

Pentafluoroethane

Persistence and degradability: Not easily biodegradable. 5% OECD 301D

12.3. Bioaccumulative potential

Partition coefficient: log Pow=0.21(R32)-log Pow=1.48(R125)-log Pow=1.06(R134a)

Ecological information about ingredients

norflurane

Distribution coefficient log Pow: 1.06

Pentafluoroethane

Distribution coefficient log Pow: 1.48

12.4. Mobility in soil

There is no application for the product.

According to REACH Regulation (EC) No. 1907/2006

12.5. Results of PBT and vPvB assessment

Based on the available data the product does not contain %0,1 or more PBT and vPvB components.

12.6. Endocrine disrupting properties

Based on the available data the product does not contain substances listed in the Endocrine disruptor assessment list

12.7. Other adverse effects

Information not available

13) Disposal considerations

13.1. Waste treatment methods

General information

Waste generation should be minimized or avoided wherever possible. Where possible, reuse or recycle products. This material and its container must be disposed of safely. Disposal of this product, process solutions, residues and by-products must always comply with environmental protection requirements, waste disposal legislation and local authority requirements. When handling waste, the safety measures implemented for handling the product should be taken into account. When handling emptied containers, care should be taken to thoroughly clean and wash them. Empty containers or product residues that may remain in their layers can be potentially hazardous.

Waste processing methods:

Do not empty into drains. We dispose of leftover and non-recyclable products in a licensed waste disposal facility.

Dispose of it with the help of a disposal organization. Waste, residues, empty containers, discarded work clothes and contaminated cleaning materials should be collected in appropriate containers and labeled according to their contents. Waste packaging should be collected for reuse or recycling. When recycling is not feasible, only incineration or burial should be used.

14) Transport information



14.1. UN number

UN No. (ADR/RID) 3163

UN No. (IMDG) 3163

UN No. (ICAO) 3163

UN No. (ADN) 3163

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14.2. UN proper shipping name

Proper shipping name: (ADR/RID) REFRIGERANT GAS R 417A

Proper shipping name: (IMDG) REFRIGERANT GAS R 417A

Proper shipping name: (ICAO) REFRIGERANT GAS R 417A

Proper shipping name: (ADN) REFRIGERANT GAS R 417A

14.3. Transport hazard class(es)

ADR/RID class 2.2

ADR/RID classification code 2A

ADR/RID label 2.2

IMDG class 2.2

ICAO class/division 2.2

ADN class 2.2

14.4. Packaging group

Not applicable.

14.5. Environmental damages

Environmentally harmful/marine pollutant: No.

14.6. Special precautions for the user

EmS : F-C, S-V

ADR shipment category: 3

Emergency action code: 2TE

Hazards Identification: 20

Number (ADR/RID)

Tunnel restriction code: (C/E)

14.7. Public transport according to MARPOL 73/78 annex II and IBC code

Not applicable.

15) Regulatory information

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

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REACH (Registration, Evaluation, Authorisation, and Restriction of Chemicals) Regulation (EC) No. 1907/2006

CLP (Classification, Labelling, and Packaging) Regulation (EC) No. 1272/2008

Seveso Directive (Directive 2012/18/EU)

Waste Framework Directive (Directive 2008/98/EC)

Regulation on Persistent Organic Pollutants (Regulation (EU) 2019/1021)

Biocidal Products Regulation (EU) No 528/2012

EC Commission Directive (EU) 2000/39/EC dated 8 June 2000.

Regulation (EU) on fluorinated greenhouse gases (Regulation (EU) 517/2014)

Adhere to the national sanitary and occupational safety regulations when using this product.

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

16) Other information

16.1 Revisions

Not applicable

16.2 Abbreviations and Acronyms

REACH: Registration, Evaluation, Authorisation, and Restriction of Chemicals,

CLP: Directive No. 1272/2008 "Classification, Labeling and Packaging of Substance and Mixtures" published in the EU,

SDS: Safety Data Sheet

CAS: Chemical Abstracts Service (followed by a number specific to the chemical)

EC: European Commission (followed by a number specific to the chemical)

H-statements: Hazard Statements

P-statements: Precautionary Statements

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

IMDG: International Maritime Dangerous Goods code

IATA: International Air Transport Association Dangerous Goods Regulations

PPE: Personal Protective Equipment

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

ADN: European Agreement on the international transport of dangerous goods by waterways.

RID: European Agreement on the international transport of dangerous goods by rail.

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ICAO-TI: International Civil Aviation Organization - Technical Instructions, Technical instructions for the international transportation of dangerous goods by air.

CAS number: Chemical Theory Service registration numbers are single descriptive numbers used for chemical compounds, polymers, biological sequences, mixtures and alloys.

DNEL: Derived chemical exposure level to which humans should not be exposed (Derived No-Effect Level)

EC number: The number given by the European Commission according to the structural characteristics of the substance,

EC50: The concentration at which the effect is observed in 50% of the test organisms; Effect concentration

LC50: The concentration at which death is observed in 50% of the test organisms; Deadly concentration. (Lethal Concentration)

LD50: The dose at which death is observed in 50% of the test organisms; Lethal dose. (Lethal Dose)

LOEC: Lowest Observed Effect Concentration

LOAEC: Lowest Observed Adverse Effect Concentration

LOEL: Lowest Observed Effect Level

LOAEL: Lowest Observed Adverse Effect Level

MARPOL 73/78: International Convention for the Prevention of Pollution of the Seas from Ships, signed in 1973 and amended in 1978

Contract. (Derived from the English term Marine Pollution.)

NIOSH: US National Institute for Occupational Safety and Health

NOEC: No Observed Effect Concentration

NOAEC: Concentration where no adverse effects are observed (No Observed Adverse Effect Concentration)

NOEL: No Observed Effect Level

NOAEL: Level where no adverse effects are observed (No Observed Adverse Effect Level)

PBT: Persistent, Bioaccumulate and Toxic

vPvB: Very persistent and very bioaccumulative (Very Persistent, Bioaccumulate and Toxic)

PNEC: Predicted No-Effect Concentration.

SED: Systemic exposure dose, the amount of the component expected to pass into the bloodstream in mg/kg body weight/day (Systemic exposure dose).

STEL: Time-weighted average exposure limit value determined based on 15 minutes of exposure, unless another period is specified. Short Term Exposure Limit

TWA: Time-weighted average, a limit value that is accepted to not adversely affect the health of employees, determined on the basis of 8 hours a day and 40 hours a week.

16.3 Relevant hazard statements and/or precautionary statements (If not stated above)

Hazard Statements

H220 Extremely flammable gas.

H280 Contains gas under pressure; may explode if heated.

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Precaution Statement(s):

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

16.3 Other Information

The form has been prepared by an expert in accordance with the rules specified in latest Commission Regulation (EU) 2020/878 of 18 June 2020 amending Annex II to Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), by an expert stated on Annex-XVIII of the Turkish Regulation on Registration, Evaluation, Authorization and Restriction of Chemicals (Official Gazette Date: 23.06.2017, Official Gazette Number: 30105 Duplicate) who has received a competence certificate from an organization accredited by the Turkish Accreditation Agency (TURKAK) for personnel certification in chemical assessment.

The information contained in this document is based on our knowledge declared on the above-mentioned date. It refers to the single product only and does not carry a particular quality guarantee.

It is the user's responsibility to ensure the appropriateness of this information and to complete it in the indicated suitable manner.

This MSDS replaces or cancels the previous one.

The information in this document should be kept and made readily accessible by the supplier for a period of 10 years.

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Chemical Assessment Expert

Certificate Number: NBC/04.24.02

Certificate Date: 12.07.2023

Certificate Validity Date: 12.07.2028

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