

SAFETY DATA SHEET

Refrigerant gas mixture R404A

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

1.1. Product identifier

Product form : Mixture Name : R-404A Product code: EGO-R404A

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

Relevant identified uses Use of the substance/mixture : Refrigerant

1.3. Details of the supplier of the safety data sheet

Supplier / distributor in Romania EGO INDUSTRIAL GAS SRL VAT ID: RO45636173 Calea Dârvarilor nr. 178, Sat Goștilele, Oraș Fundulea, Jud. Călărași, România Website: <https://egolog.ro> Document identifier: EGO-SDS-R404A-EN

1.4. Emergency telephone number

European emergency number: 112 (24/7).

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP] Press. Gas (Liq.) H280 Full text of hazard classes, H- and EUH-statements: see section 16 Adverse physicochemical, human health and environmental effects Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing. Contact with the liquid may cause frostbite and serious damage to eyes.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP] Hazard pictograms (CLP) : GHS04 Signal word (CLP) : Warning Hazard statements (CLP) : H280 - Contains gas under pressure; may explode if heated. Precautionary statements (CLP) : P403 - Store in a well-ventilated place. Extra phrases : Greenhouse fluorinated gas falling within Kyoto Protocol (GWP=3922).

2.3. Other hazards

Contains no PBT and/or vPvB substances $\geq 0.1\%$ assessed in accordance with REACH Annex XIII R-404A Component Substance(s) not meeting the PBT criteria of REACH 1,1,1-Trifluoroethane (420-46-2), Pentafluoroethane (354-33-6), 1,1,1,2-Tetrafluoroethane regulation, in accordance with Annex XIII (811-97-2) Substance(s) not meeting the vPvB criteria of REACH 1,1,1-Trifluoroethane (420-46-2), Pentafluoroethane (354-33-6), 1,1,1,2-Tetrafluoroethane regulation, in accordance with Annex XIII (811-97-2) The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or substance(s) are not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Name Product identifier % Classification according to Regulation (EC) No. 1272/2008 [CLP] 1,1,1-Trifluoroethane CAS-No.: 420-46-2 52 Flam. Gas 1A, H220 EC-No.: 206-996-5 Press. Gas (Liq.), H280 REACH-no: 01-2119492869- 13 Pentafluoroethane CAS-No.: 354-33-6 44 Press. Gas (Liq.), H280 EC-No.: 206-557-8 REACH-no: 01-2119485636- 25 1,1,1,2-Tetrafluoroethane CAS-No.: 811-97-2 4 Press. Gas (Liq.), H280 EC-No.: 212-377-0 REACH-no: 01-2119459374- 33 Full text of H- and EUH-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Move the affected person away from the contaminated area and into the fresh air. If you feel unwell, seek medical advice. First-aid measures after skin contact : In the event of contact with the liquid: treat resulting frostbite as a burn. Immediately remove contaminated clothing or footwear. Immediately rinse with plenty of water. If skin burns appear, call a doctor immediately. First-aid measures after eye contact : Rinse immediately and thoroughly, pulling the eyelids well away from the eye (15 minutes minimum). Consult an eye specialist immediately. First-aid measures after ingestion : Not specifically applicable (gas).

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

Symptoms/effects : CNS depression. Narcosis. Cardiac disorders. Lack of oxygen: risk of death.

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

No additional information available R-404A

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : All extinguishing agents can be used. Unsuitable extinguishing media : None to our knowledge. If there is a fire close by, use suitable extinguishing agents.

5.2. Special hazards arising from the substance or mixture

Explosion hazard : pressure rise and possible bursting of container. On heating : Toxic and corrosive vapours are released.

5.3. Advice for firefighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Protection during firefighting : Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Avoid contact with skin and eyes. Remove all sources of ignition. Do not smoke. Evacuate the danger area. Do not breathe smoke. Stop the leak.

6.2. Environmental precautions

No additional information available

6.3. Methods and material for containment and cleaning up

Other information : Mechanically ventilate the spillage area.

6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection".

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Avoid breathing mist, vapours. Do not get in eyes, on skin, or on clothing. Ventilation. Vapours are heavier than air and may spread along floors. Under certain temperature and pressure conditions may form a flammable mixture in the presence of air. Hygiene measures : Do not drink, eat or smoke in the workplace.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store : in a cool, well-ventilated area, away from any source of heat, away from any source of ignition. Incompatible materials : Strong oxidizing agents. Alkaline hydroxide. Alkaline earth metals. Finely divided metals (Al, Mg, Zn). Packaging materials : Recommended materials Stainless steel, Carbon steel. Do not use : Alloys containing more than 2% magnesium, Plastic materials.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

National occupational exposure and biological limit values R-404A Pentafluoroethane (354-33-6) EU - Indicative Occupational Exposure Limit (IOEL) IOEL TWA 4900 mg/m³ (recommended) 1000 ppm (recommended) 1,1,1,2-Tetrafluoroethane (811-97-2) EU - Indicative Occupational Exposure Limit (IOEL) IOEL TWA 4240 mg/m³ 1000 ppm United Kingdom - Occupational Exposure Limits Local name 1,1,1,2-Tetrafluoroethane (HFC 134a) WEL TWA (OEL TWA) 4240 mg/m³ 1000 ppm Regulatory reference EH40/2005 (Fourth edition, 2020). HSE DNEL and PNEC 1,1,1-Trifluoroethane (420-46-2) DNEL/DMEL (Workers) Long-term - systemic effects, inhalation 38800 mg/m³ DNEL/DMEL (General population) Long-term - systemic effects, inhalation 10700 mg/m³ PNEC (Water) PNEC aqua (freshwater) 350 µg/l Pentafluoroethane (354-33-6) DNEL/DMEL (Workers) Long-term - systemic effects, inhalation 16444 mg/m³ DNEL/DMEL (General population) Long-term - systemic effects, inhalation 1753 mg/m³ PNEC (Water) PNEC aqua (freshwater) 0.1 mg/l PNEC aqua (intermittent, freshwater) 1 mg/l PNEC (Sediment) PNEC sediment (freshwater) 0.6 mg/kg dwt 1,1,1,2-Tetrafluoroethane (811-97-2) DNEL/DMEL (Workers) Long-term - systemic effects, inhalation 13936 mg/m³ DNEL/DMEL (General population) Long-term - systemic effects, inhalation 2476 mg/m³ PNEC (Water) PNEC aqua (freshwater) 0.1 mg/l PNEC aqua (marine water) 0.01 mg/l R-404A 1,1,1,2-Tetrafluoroethane (811-97-2) PNEC aqua (intermittent, freshwater) 1 mg/l PNEC (Sediment) PNEC sediment (freshwater) 0.75 mg/kg dwt PNEC (STP) PNEC sewage treatment plant 73 mg/l

8.2. Exposure controls

Personal protection equipment Eye and face protection Eye protection: Safety glasses with side shields Skin protection Skin and body protection: Majority cotton protective clothing Hand protection: Leather protective gloves. Nitrile-rubber protective gloves. VITON gloves Respiratory protection Respiratory protection: In the event of insufficient ventilation: Gas mask with filter type AX. In a confined area : Self-contained breathing apparatus

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Gas Colour : Colourless. Appearance : Press. Gas (Liq.). Molecular mass : 97.6 g/mol Odour : slightly ethereal. Odour threshold : Not available Melting point : Not applicable Freezing point : Not applicable Boiling point : -46.23 °C Flammability : Non flammable. Explosive properties : Not explosive material according to EC criteria. Oxidising properties : Non oxidizing material according to EC criteria. Lower explosion limit : Not available Upper explosion limit : Not available Flash point : None Auto-ignition temperature : Not available Decomposition temperature : 250 °C pH : Not applicable Viscosity, kinematic : Not applicable Solubility : Insoluble in water. Water: 0.055 % Partition coefficient n-octanol/water (Log Kow) : Not available Vapour pressure : 12.55 bar (25°C) Vapour pressure at 50°C : 23.11 bar (50°C) Critical pressure : 37.29 bar Density : 1044 kg/m³ (25°C) Relative density : Not applicable Relative vapour density at 20°C : 3.45 Particle characteristics : Not applicable R-404A

9.2. Other information

Information with regard to physical hazard classes Critical temperature : 72 °C Other safety characteristics VOC content : 100 %

SECTION 10: Stability and reactivity

10.1. Reactivity

Decomposes on exposure to temperature rise.

10.2. Chemical stability

Stable at ambient temperature and under normal conditions of use.

10.3. Possibility of hazardous reactions

No information available. No polymerization.

10.4. Conditions to avoid

Avoid high temperatures. Avoid naked flame. Heating will cause a rise in pressure with a risk of bursting.

10.5. Incompatible materials

Alkalis and caustic products. alkali metals. Alkaline earth metals. Finely divided metals (Al, Mg, Zn). Strong oxidizing agents.

10.6. Hazardous decomposition products

On thermal decomposition (pyrolysis), releases : Hydrogen fluoride, Carbon oxides (CO, CO₂), Fluorinated hydrocarbons, Carbonyl halogenides.

SECTION 11: Toxicological information

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

Acute toxicity (oral) : Not classified Acute toxicity (dermal) : Not classified Acute toxicity (inhalation) : Not classified 1,1,1-Trifluoroethane (420-46-2) LC50 Inhalation - Rat [ppm] 591000 ppm/4h Pentafluoroethane (354-33-6) LC50 Inhalation - Rat [ppm] 800000 ppm/4h 1,1,1,2-Tetrafluoroethane (811-97-2) LC50 Inhalation - Rat [ppm] > 500000 ppm/4h Skin corrosion/irritation : Not classified pH: Not applicable Additional information : Contact with the liquid causes frostbite 1,1,1-Trifluoroethane (420-46-2) pH Not applicable Pentafluoroethane (354-33-6) pH Not applicable 1,1,1,2-Tetrafluoroethane (811-97-2) pH Not applicable R-404A Serious eye damage/irritation : Not classified pH: Not applicable Additional information : Contact with the liquefied gas may cause severe ocular lesions 1,1,1-Trifluoroethane (420-46-2) pH Not applicable Pentafluoroethane (354-33-6) pH Not applicable 1,1,1,2-Tetrafluoroethane (811-97-2) pH Not applicable Respiratory or skin sensitisation : Not classified Germ cell mutagenicity : Not classified Carcinogenicity : Not classified 1,1,1,2-Tetrafluoroethane (811-97-2) NOAEL (chronic, oral, animal/male, 2 years) 300 mg/kg bodyweight rat Reproductive toxicity : Not classified Pentafluoroethane (354-33-6) NOAEL (animal/male, F0/P) 245 mg/kg NOAEL (animal/female, F0/P) 245 mg/kg STOT-single exposure : Not classified STOT-repeated exposure : Not classified Pentafluoroethane (354-33-6) NOAEC (inhalation, rat, dust/mist/fume, 90 days) 50000 ppm 1,1,1,2-Tetrafluoroethane (811-97-2) NOAEC (inhalation, rat, gas, 90 days) 50000 ppm Animal: rat, Guideline: OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies) Aspiration hazard : Not applicable 1,1,1,2-Tetrafluoroethane (811-97-2) Viscosity, kinematic 0.162 mm²/s

11.2. Information on other hazards

Endocrine disrupting properties Adverse health effects caused by endocrine : The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

SECTION 12: Ecological information

12.1. Toxicity

Hazardous to the aquatic environment, short-term : Not classified (acute) Hazardous to the aquatic environment, long-term : Not classified (chronic) 1,1,1-Trifluoroethane (420-46-2) LC50 - Fish [1] > 40 mg/l Oncorhynchus mykiss (Rainbow trout) R-404A 1,1,1-Trifluoroethane (420-46-2) LC50 - Fish [2] 109 mg/l (freshwater) EC50 - Crustacea [1] 115 – 300 mg/l 48 Hours (Daphnia magna) EC50 72h - Algae [1] ≈ 71 mg/l Test organisms (species): EC50 96h - Algae [1] 71 mg/l NOEC chronic algae > 44 mg/l selenastrum capricornutum Pentafluoroethane (354-33-6) LC50 - Fish [1] > 81.8 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri) LC50 - Fish [2] 450 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri) EC50 - Crustacea [1] > 97.9 mg/l Test organisms (species): Daphnia magna EC50 72h - Algae [1] > 114 mg/l Test organisms (species): Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum) EC50 72h - Algae [2] > 118 mg/l Test organisms (species): Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum) NOEC chronic fish 32 mg/l Test organisms (species): Duration: '30 d' 1,1,1,2-Tetrafluoroethane (811-97-2) LC50 - Fish [1] 450 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri) EC50 - Crustacea [1] 980 mg/l 48 Hours (Daphnia magna) EC50 72h - Algae [1] > 118 mg/l Test organisms (species): Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum) EC50 72h - Algae [2] > 114 mg/l Test organisms (species): Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum)

12.2. Persistence and degradability

R-404A Persistence and degradability Not established. 1,1,1-Trifluoroethane (420-46-2) Persistence and degradability 3 % biodegradation after 28 days. Pentafluoroethane (354-33-6) Persistence and degradability 5 % biodegradation after 28 days, Not readily biodegradable. 1,1,1,2-Tetrafluoroethane (811-97-2) Persistence and degradability Photodegradation in the air : Half-life in air : 9,7 y, 3 % biodegradation after 28 days.

12.3. Bioaccumulative potential

1,1,1-Trifluoroethane (420-46-2) Partition coefficient n-octanol/water (Log Pow) 1.73 Pentafluoroethane (354-33-6) Partition coefficient n-octanol/water (Log Kow) 1.48 (25°C) R-404A 1,1,1,2-Tetrafluoroethane (811-97-2) Partition coefficient n-octanol/water (Log Pow) 1.06

12.4. Mobility in soil

Pentafluoroethane (354-33-6) Organic Carbon Normalized Adsorption Coefficient 1.3 – 1.7 (Log K_{oc}) 1,1,1,2-Tetrafluoroethane (811-97-2) Organic Carbon Normalized Adsorption Coefficient 1.5 (Log K_{oc})

12.5. Results of PBT and vPvB assessment

Component Substance(s) not meeting the PBT criteria of REACH 1,1,1-Trifluoroethane (420-46-2), Pentafluoroethane (354-33-6), 1,1,1,2-Tetrafluoroethane regulation, in accordance with Annex XIII (811-97-2) Substance(s) not meeting the vPvB criteria of REACH 1,1,1-Trifluoroethane (420-46-2), Pentafluoroethane (354-33-6), 1,1,1,2-Tetrafluoroethane regulation, in accordance with Annex XIII (811-97-2)

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

Other adverse effects : ODP (R-11=1)=0. R-404A Other information GWP (CO₂=1/100 years) = 3922 Pentafluoroethane (354-33-6) Other information GWP (CO₂=1/100 years) = 3500 1,1,1,2-Tetrafluoroethane (811-97-2) Other information GWP (CO₂=1/100 years) = 1430

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : Methods of disposal of packaging. Reuse or recycle following decontamination. Destroy at an authorised site. Additional information : The user's attention is drawn to the possible existence of specific european, national or local regulations regarding disposal.

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA ADR IMDG IATA

14.1. UN number or ID number

UN 3337 UN 3337 UN 3337 R-404A ADR IMDG IATA

14.2. UN proper shipping name

REFRIGERANT GAS R 404A REFRIGERANT GAS R 404A Refrigerant gas R 404A Transport document description UN 3337 REFRIGERANT GAS R 404A, 2.2, UN 3337 REFRIGERANT GAS R 404A, 2.2 UN 3337 Refrigerant gas R 404A, 2.2 (C/E)

14.3. Transport hazard class(es)

2.2 2.2 2.2

14.4. Packing group

Not applicable Not applicable Not applicable

14.5. Environmental hazards

Dangerous for the environment: No Dangerous for the environment: No Dangerous for the environment: No Marine pollutant: No EmS-No. (Fire): F-C EmS-No. (Spillage): S-V No supplementary information available

14.6. Special precautions for user

Overland transport Classification code (ADR) : 2A Special provisions (ADR) : 662 Limited quantities (ADR) : 120ml Tank code (ADR) : PxBN(M) Transport category (ADR) : 3 Hazard identification number (Kemler No.) : 20 Orange plates : Tunnel restriction code (ADR) : C/E EAC code : 2TE Transport by sea Limited quantities (IMDG) : 120 ml Air transport PCA Limited quantities (IATA) : Forbidden PCA limited quantity max net quantity (IATA) : Forbidden PCA packing instructions (IATA) : 200 PCA max net quantity (IATA) : 75kg CAO packing instructions (IATA) : 200 CAO max net quantity (IATA) : 150kg

14.7. Maritime transport in bulk according to IMO instruments

Not applicable R-404A

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation

This document refers to Regulation (EC) No 1907/2006 (REACH), Regulation (EC) No 1272/2008 (CLP), Regulation (EU) 2020/878 and Regulation (EU) 2024/573. National conditions and permitted use must be checked for the actual product and destination country.

15.2. Chemical safety assessment

The applicable assessment is confirmed against the actual product, batch and supplier data before dispatch.

SECTION 16: Other information

EGO issue 1.0 dated 15.08.2026. Public reference document issued by EGO INDUSTRIAL GAS SRL as supplier/distributor. It does not state that EGO is the chemical manufacturer and does not replace the regulatory SDS for the product and batch actually supplied. The current regulatory SDS is sent to the buyer before dispatch. Main abbreviations: ADR, ADN, IMDG, IATA, CLP, REACH, PBT, vPvB, DNEL, PNEC.