



SAFETY DATA SHEET

AC Pro R-1234yf Auto Air-Con Recharge 315g

The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019, SI 2019/758 (as amended).

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

1.1. Product identifier

Product name AC Pro R-1234yf Auto Air-Con Recharge 315g
Product number 00090

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

Identified uses Recharge R1234YF automotive air conditioning systems.
Uses advised against No specific uses advised against are identified.

1.3. Details of the supplier of the safety data sheet

Supplier Energizer Trading Ltd
 Sword House
 Totteridge Road
 High Wycombe
 HP13 6DG
 UK
 Tel: +44 845 602 1995
 euregulatory@energizer.com

1.4. Emergency telephone number

Emergency telephone +44 1495 350234
 Monday - Thursday: 0830 - 1700
 Friday: 0830 - 1530

National emergency telephone number Product information has been submitted to the UK National Poisons Information Service (NPIS) and is accessible to medical health professionals.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards Flam. Gas 1B - H221 Press. Gas (Liq.) - H280
Health hazards Not Classified
Environmental hazards Not Classified

Physicochemical The product is highly flammable. Containers can burst violently or explode when heated, due to excessive pressure build-up. Vapours may be ignited by a spark, a hot surface or an ember. Keep away from heat, sparks and open flame.

2.2. Label elements

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Hazard pictograms



Signal word

Danger

Hazard statements

H221 Flammable gas.
H280 Contains gas under pressure; may explode if heated.

Precautionary statements

P102 Keep out of reach of children.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381 In case of leakage, eliminate all ignition sources.
P410+P403 Protect from sunlight. Store in a well-ventilated place.

2.3. Other hazards

This product does not contain any substances classified as PBT or vPvB.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

2,3,3,3-tetrafluoroprop-1-ene	50 - 100%	
CAS number: 754-12-1	EC number: 468-710-7	REACH registration number: 01-0000019665-61-XXXX
Classification		
Flam. Gas 1B - H221		
Press. Gas (Liq.) - H280		

The full text for all hazard statements is displayed in Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation	Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Place unconscious person on their side in the recovery position and ensure breathing can take place.
Ingestion	Due to the physical nature of this product, it is unlikely that ingestion will occur. Rinse mouth thoroughly with water. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Keep affected person under observation. Get medical attention if any discomfort continues.
Skin contact	Remove contaminated clothing immediately and wash skin with soap and water. Do not use organic solvents. Get medical attention if any discomfort continues.
Eye contact	Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

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

Inhalation	Vapours may cause headache, fatigue, dizziness and nausea.
Ingestion	Due to the physical nature of this product, it is unlikely that ingestion will occur. No specific symptoms known.

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Skin contact Spray will evaporate and cool rapidly and may cause frostbite or cold burns if in contact with skin.

Eye contact Prolonged contact may cause redness and/or tearing.

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

Notes for the doctor The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Extinguish with the following media: Water spray, fog or mist. Dry chemicals, sand, dolomite etc. Carbon dioxide (CO₂). Alcohol-resistant foam.

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 The product is extremely flammable. Containers can burst violently or explode when heated, due to excessive pressure build-up. Bursting aerosol containers may be propelled from a fire at high speed. Vapours are heavier than air and may spread near ground and travel a considerable distance to a source of ignition and flash back. Vapours are heavier than air and may travel along the floor and accumulate in the bottom of containers.

Hazardous combustion products Thermal decomposition or combustion products may include the following substances: Oxides of carbon. Toxic gases or vapours.

5.3. Advice for firefighters

Protective actions during firefighting Use water to keep fire exposed containers cool and disperse vapours.

Special protective equipment for firefighters Use protective equipment appropriate for surrounding materials. Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Firefighter's clothing conforming to European standard EN469 (including helmets, protective boots and gloves) 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 Wear protective clothing as described in Section 8 of this safety data sheet. Eliminate all ignition sources if safe to do so. Evacuate area. Provide adequate ventilation. If ventilation is inadequate, suitable respiratory protection must be worn. Avoid breathing gas. Avoid contact with skin and eyes. Spray will evaporate and cool rapidly and may cause frostbite or cold burns if in contact with skin.

6.2. Environmental precautions

Environmental precautions Avoid discharge into drains or watercourses or onto the ground.

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. No smoking, sparks, flames or other sources of ignition near spillage. Eliminate all ignition sources if safe to do so. Do not touch or walk into spilled material. Absorb in vermiculite, dry sand or earth and place into containers. Use only non-sparking tools. Containers with collected spillage must be properly labelled with correct contents and hazard symbol.

6.4. Reference to other sections

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Reference to other sections See Section 11 for additional information on health hazards. For waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Read and follow manufacturer's recommendations. Wear protective clothing as described in Section 8 of this safety data sheet. Provide adequate ventilation. Avoid contact with skin, eyes and clothing. Spray will evaporate and cool rapidly and may cause frostbite or cold burns if in contact with skin. Keep away from heat, sparks and open flame. Pressurised container: may burst if heated Do not pierce or burn, even after use. Avoid the accumulation of vapours in low or confined areas.

Advice on general occupational hygiene Avoid contact with eyes and prolonged skin contact. Good personal hygiene procedures should be implemented. Do not eat, drink or smoke when using this product. Wash hands and any other contaminated areas of the body with soap and water before leaving the work site.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Store in a cool and well-ventilated place. Keep away from heat, sparks and open flame. Protect from sunlight. Store at temperatures not exceeding 50°C. Take precautionary measures against static discharges. Protect containers from damage. Keep only in the original container.

7.3. Specific end use(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

Occupational exposure limits

2,3,3,3-tetrafluoroprop-1-ene

Long-term exposure limit (8-hour TWA): WEL 500 ppm

Supplier's information.

WEL = Workplace Exposure Limit.

2,3,3,3-tetrafluoroprop-1-ene (CAS: 754-12-1)

DNEL	Workers - Inhalation; Long term systemic effects: 950 mg/m ³ Consumer - Inhalation; Long term systemic effects: 113.1 mg/m ³ Consumer - Inhalation; Short term systemic effects: 186400 mg/m ³
PNEC	Fresh water; 0.1 mg/l marine water; 0.01 mg/l Sediment (Freshwater); 1.77 mg/kg Sediment (Marinewater); 0.178 mg/kg Soil; 1.54 mg/kg

8.2. Exposure controls

Appropriate engineering controls Provide adequate ventilation. All handling should only take place in well-ventilated areas. Avoid inhalation of vapours and spray/mists. Use explosion-proof electrical, ventilating and lighting equipment.

Eye/face protection Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Unless the assessment indicates a higher degree of protection is required, the following protection should be worn: Wear tight-fitting, chemical splash goggles or face shield.

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Hand protection	Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. To protect hands from low temperatures, gloves should comply with European Standard EN511. 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. Frequent changes are recommended.
Other skin and body protection	Wear appropriate clothing to prevent any possibility of skin contact.
Hygiene measures	Do not smoke in work area. Wash promptly with soap and water if skin becomes contaminated. Wash at the end of each work shift and before eating, smoking and using the toilet.
Respiratory protection	If ventilation is inadequate, suitable respiratory protection must be worn. Ensure all respiratory protective equipment is suitable for its intended use and is 'CE'-marked.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Oily liquid.
Colour	Yellow.
Odour	Ethereal.
Odour threshold	Not determined.
pH	Not applicable.
Melting point	Not applicable.
Initial boiling point and range	-29.4°C
Flash point	Not determined.
Evaporation rate	Not determined.
Evaporation factor	Not determined.
Flammability (solid, gas)	Extremely flammable gas.
Upper/lower flammability or explosive limits	Not determined.
Vapour pressure	Not determined.
Vapour density	4 @ 20°C
Relative density	Not determined.
Bulk density	Not determined.
Partition coefficient	Not determined.
Auto-ignition temperature	Not determined.
Decomposition Temperature	Not determined.
Viscosity	Not applicable.
Explosive properties	Not considered to be explosive.
Oxidising properties	The mixture itself has not been tested but none of the ingredient substances meet the criteria for classification as oxidising.

9.2. Other information

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Other information No information required.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity There are no known reactivity hazards associated with this product.

10.2. Chemical stability

Stability Stable at normal ambient temperatures and when used as recommended.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions Will not polymerise.

10.4. Conditions to avoid

Conditions to avoid Pressurised container: may burst if heated Avoid exposure to high temperatures or direct sunlight. Avoid heat, flames and other sources of ignition. Avoid the accumulation of vapours in low or confined areas. Keep at temperature not exceeding 50°C.

10.5. Incompatible materials

Materials to avoid Alkali metals. Oxidising materials. Finely divided metal powders.

10.6. Hazardous decomposition products

Hazardous decomposition products Does not decompose when used and stored as recommended. Decomposition at ambient temperatures may generate the following substances: Carbon dioxide (CO₂). Carbon monoxide (CO). Acrid smoke or fumes.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

Notes (oral LD₅₀) Based on available data the classification criteria are not met.

Acute toxicity - dermal

Notes (dermal LD₅₀) Based on available data the classification criteria are not met.

Acute toxicity - inhalation

Notes (inhalation LC₅₀) Based on available data the classification criteria are not met.

Skin corrosion/irritation

Animal data Based on available data the classification criteria are not met.

Serious eye damage/irritation

Serious eye damage/irritation Based on available data the classification criteria are not met.

Respiratory sensitisation

Respiratory sensitisation Based on available data the classification criteria are not met.

Skin sensitisation

Skin sensitisation Based on available data the classification criteria are not met.

Germ cell mutagenicity

Genotoxicity - in vitro Based on available data the classification criteria are not met.

Genotoxicity - in vivo Based on available data the classification criteria are not met.

Carcinogenicity

Carcinogenicity Based on available data the classification criteria are not met.

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Reproductive toxicity

Reproductive toxicity - fertility Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure

STOT - single exposure Based on available data the classification criteria are not met.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure Based on available data the classification criteria are not met.

Aspiration hazard

Aspiration hazard Not anticipated to present an aspiration hazard, based on chemical structure.

Toxicological information on ingredients.

2,3,3,3-tetrafluoroprop-1-ene

Acute toxicity - oral

Notes (oral LD₅₀) Technically not feasible.

Acute toxicity - dermal

Notes (dermal LD₅₀) Technically not feasible.

Acute toxicity - inhalation

Notes (inhalation LC₅₀) LC₅₀ >400000 ppm, Inhalation, Rat

Skin corrosion/irritation

Skin corrosion/irritation Technically not feasible.

Serious eye damage/irritation

Serious eye damage/irritation Technically not feasible.

Skin sensitisation

Skin sensitisation Technically not feasible.

Germ cell mutagenicity

Genotoxicity - in vitro Chromosome aberration: Negative.

Genotoxicity - in vivo Chromosome aberration: Negative.

Reproductive toxicity

Reproductive toxicity - fertility Two-generation study - NOAEC 50000 ppm, Inhalation, Rat P

Reproductive toxicity - development Maternal toxicity:, Developmental toxicity: - NOAEC: 50000 ppm, Inhalation, Rat
Maternal toxicity: - LOAEC: 2500 ppm, Inhalation, Rabbit

Specific target organ toxicity - repeated exposure

STOT - repeated exposure NOAEC 50000 ppm, Inhalation, Rat

SECTION 12: Ecological information

12.1. Toxicity

Toxicity Not considered toxic to fish.

Ecological information on ingredients.

2,3,3,3-tetrafluoroprop-1-ene

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Acute aquatic toxicity

Acute toxicity - fish LC₅₀, 96 hours: >197 mg/l, Cyprinus carpio (Common carp)

Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: >83 mg/l, Daphnia magna

Acute toxicity - aquatic plants EC₅₀, 72 hours: >100 mg/l, Pseudokirchneriella subcapitata
NOEC, 72 hours: 75 mg/l, Pseudokirchneriella subcapitata

Chronic aquatic toxicity

Chronic toxicity - fish early life stage EC₅₀, 28 days: >22 mg/l, Cyprinus carpio (Common carp)
NOEC, 28 days: 2.7 mg/l, Cyprinus carpio (Common carp)

12.2. Persistence and degradability

Persistence and degradability There are no data on the degradability of this product.

Ecological information on ingredients.

2,3,3,3-tetrafluoroprop-1-ene

Biodegradation Water - Degradation <5%: 28 days
Not readily biodegradable.

12.3. Bioaccumulative potential

Bioaccumulative potential No data available on bioaccumulation.

Partition coefficient Not determined.

Ecological information on ingredients.

2,3,3,3-tetrafluoroprop-1-ene

Bioaccumulative potential Bioaccumulation is unlikely.

12.4. Mobility in soil

Mobility No data available.

Ecological information on ingredients.

2,3,3,3-tetrafluoroprop-1-ene

Mobility No data available.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment This product does not contain any substances classified as PBT or vPvB.

Ecological information on ingredients.

2,3,3,3-tetrafluoroprop-1-ene

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

12.6. Other adverse effects

Other adverse effects Not determined.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

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General information

Dispose of waste product or used containers in accordance with local regulations Do not puncture or incinerate, even when empty.

SECTION 14: Transport information

14.1. UN number

UN No. (ADR/RID)	2037
UN No. (IMDG)	2037
UN No. (ICAO)	2037
UN No. (ADN)	2037

14.2. UN proper shipping name

Proper shipping name (ADR/RID)	RECEPTACLES, SMALL, CONTAINING GAS (GAS CARTRIDGES)
Proper shipping name (IMDG)	RECEPTACLES, SMALL, CONTAINING GAS (GAS CARTRIDGES)
Proper shipping name (ICAO)	RECEPTACLES, SMALL, CONTAINING GAS (GAS CARTRIDGES)
Proper shipping name (ADN)	RECEPTACLES, SMALL, CONTAINING GAS (GAS CARTRIDGES)

14.3. Transport hazard class(es)

ADR/RID class	2.1
ADR/RID classification code	5F
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

EmS	F-D, S-U
ADR transport category	2
Tunnel restriction code	(D)

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

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not relevant.

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SECTION 15: Regulatory information

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

National regulations	EH40/2005 Workplace exposure limits. The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019, SI 2019/758 (as amended). The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use) (Amendment etc.) (EU Exit) Regulations 2019, SI 2019/720 (as amended).
EU legislation	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). Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended). Commission Regulation (EU) No 2015/830 of 28 May 2015.

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information

Abbreviations and acronyms used in the safety data sheet	ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road. RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail. IMDG: International Maritime Dangerous Goods. IATA: International Air Transport Association. ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways. ATE: Acute Toxicity Estimate. DNEL: Derived No Effect Level. LC ₅₀ : Lethal Concentration to 50 % of a test population. LD ₅₀ : Lethal Dose to 50% of a test population (Median Lethal Dose). PBT: Persistent, Bioaccumulative and Toxic substance. vPvB: Very Persistent and Very Bioaccumulative. BCF: Bioconcentration Factor.
Classification abbreviations and acronyms	Flam. Gas = Flammable gas Press. Gas (Liq.) = Gas under pressure: Liquefied gas
Classification procedures according to Regulation (EC) 1272/2008	Flam. Gas 1 - H220, Press. Gas (Liq.) - H280: Expert judgement.
Revision comments	Product name change. Revised classification.
Revision date	07/06/2020
Revision	3
Supersedes date	11/11/2020
SDS number	1320
Hazard statements in full	H221 Flammable gas. H280 Contains gas under pressure; may explode if heated.

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