# Safety Data Sheet

acc. to 29 CFR 1910.1200 App D

# A/C Pro Professional Formula Refrigerant with Max-Seal

Version number: 5.0
Replaces version of: 2020-10-08 (4)

Revision: 2020-10-21

## SECTION 1: Identification

### 1.1 Product identifier

Trade name: **A/C Pro Professional Formula Refrigerant with Max-Seal**

Alternative number(s): 048168032143, 048168450947

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

Relevant identified uses: General use

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

Energizer Manufacturing, Inc.
25225 Detroit Rd.
Westlake OH 44145
United States

Telephone: 800-383-7323; 314-985-2000 (USA / CANADA)
Website: http://data.energizer.com

Energizer Trading Ltd.
Sword House, Totteridge Road, High Wycombe, HP13 6DG, UK

Telephone: +44(0)8000353376
e-mail: ConsumerServiceEU@energizer.com

### 1.4 Emergency telephone number

Emergency information service: 1-314-985-1511 Int'l: 1-800-526-4727
This number is only available during the following office hours: Mon-Fri 09:00 AM - 05:00 PM

## SECTION 2: Hazard(s) identification

### 2.1 Classification of the substance or mixture

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

| Section | Hazard class | Category | Hazard class and category | Hazard state-ment |
|---|---|---|---|---|
| B.5 | gases under pressure | C | Press. Gas C | H280 |

For full text of abbreviations: see SECTION 16.

The most important adverse physicochemical, human health and environmental effects

Contains gas under pressure; may explode if heated.

### 2.2 Label elements

Labelling acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

- Signal word warning

- Pictograms

GHS04

- Hazard statements

| | |
|---|---|
| H280 | Contains gas under pressure; may explode if heated. |

- Precautionary statements

| | |
|---|---|
| P101 | If medical advice is needed, have product container or label at hand. |
| P102 | Keep out of reach of children. |
| P103 | Read label before use. |
| P410+P403 | Protect from sunlight. Store in a well-ventilated place. |

### 2.3 Other hazards

Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Not relevant (mixture)

### 3.2 Mixtures

Description of the mixture

| Name of substance | Identifier | Wt% | Classification acc. to GHS | Pictograms |
|---|---|---|---|---|
| R-134a | CAS No<br>811-97-2 | 75 – < 90 | Press. Gas C / H280 |  |
| Dimethyl adipate | CAS No<br>Trade secret | 1 – < 5 | Acute Tox. 4 / H312 |  |

For full text of abbreviations: see SECTION 16.

# A/C Pro Professional Formula Refrigerant with Max-Seal



## SECTION 4: First-aid measures

### 4.1 Description of first- aid measures

General notes

Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.

Following inhalation

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. Provide fresh air.

Following skin contact

Thaw frosted parts with lukewarm water. Do not rub affected area.

Following eye contact

Remove contact lenses, if present and easy to do. Continue rinsing. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart.

Following ingestion

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.

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

Symptoms and effects are not known to date.

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

none

## SECTION 5: Fire-fighting measures

### 5.1 Extinguishing media

Suitable extinguishing media

Water spray, BC-powder

Unsuitable extinguishing media

Water jet

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

Contact with the product can cause burns and/or frostbite. Contains gas under pressure; may explode if heated.

Hazardous combustion products

Carbon monoxide (CO), Carbon dioxide (CO2)

### 5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Coordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

## SECTION 6: Accidental release measures

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

For non-emergency personnel

Remove persons to safety.

For emergency responders

Wear breathing apparatus if exposed to vapors/dust/aerosols/gases.

### 6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

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

Advice on how to contain a spill

Covering of drains

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

### 6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Recommendations

- Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation. Use only in well-ventilated areas.

Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

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

Level 1 Aerosol.

Managing of associated risks

- Flammability hazards

Protect from sunlight.

- Packaging compatibilities

Only packagings which are approved (e.g. acc. to the Dangerous Goods Regulations) may be used.

### 7.3 Specific end use(s)

See section 16 for a general overview.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

This information is not available.

Relevant DNELs of components of the mixture

| Name of substance | CAS No | End-point | Threshold level | Protection goal, route of exposure | Used in | Exposure time |
|---|---|---|---|---|---|---|
| R-134a | 811-97-2 | DNEL | 13,936 mg/m³ | human, inhalatory | worker (industry) | chronic - systemic effects |
| Dimethyl adipate | Trade secret | DNEL | 8.3 mg/m³ | human, inhalatory | worker (industry) | acute - systemic effects |
| Dimethyl adipate | Trade secret | DNEL | 8.3 mg/m³ | human, inhalatory | worker (industry) | chronic - local effects |

Relevant PNECs of components of the mixture

| Name of substance | CAS No | End-point | Threshold level | Organism | Environmental compartment | Exposure time |
|---|---|---|---|---|---|---|
| R-134a | 811-97-2 | PNEC | 0.1 $^{mg}/_{l}$ | aquatic organisms | freshwater | short-term (single instance) |
| R-134a | 811-97-2 | PNEC | 0.01 $^{mg}/_{l}$ | aquatic organisms | marine water | short-term (single instance) |
| R-134a | 811-97-2 | PNEC | 73 $^{mg}/_{l}$ | aquatic organisms | sewage treatment plant (STP) | short-term (single instance) |
| R-134a | 811-97-2 | PNEC | 0.75 $^{mg}/_{kg}$ | aquatic organisms | freshwater sediment | short-term (single instance) |
| Dimethyl adipate | Trade secret | PNEC | 0.18 $^{mg}/_{l}$ | aquatic organisms | water | intermittent release |
| Dimethyl adipate | Trade secret | PNEC | 0.018 $^{mg}/_{l}$ | aquatic organisms | freshwater | short-term (single instance) |
| Dimethyl adipate | Trade secret | PNEC | 0.002 $^{mg}/_{l}$ | aquatic organisms | marine water | short-term (single instance) |
| Dimethyl adipate | Trade secret | PNEC | 10 $^{mg}/_{l}$ | aquatic organisms | sewage treatment plant (STP) | short-term (single instance) |
| Dimethyl adipate | Trade secret | PNEC | 0.16 $^{mg}/_{kg}$ | aquatic organisms | freshwater sediment | short-term (single instance) |

Relevant PNECs of components of the mixture

| Name of substance | CAS No | End-point | Threshold level | Organism | Environmental compartment | Exposure time |
|---|---|---|---|---|---|---|
| Dimethyl adipate | Trade secret | PNEC | 0.016 $^{mg}/_{kg}$ | aquatic organisms | marine sediment | short-term (single instance) |
| Dimethyl adipate | Trade secret | PNEC | 0.09 $^{mg}/_{kg}$ | terrestrial organ-isms | soil | short-term (single instance) |

### 8.2 Exposure controls

Appropriate engineering controls

General ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection

Wear eye/face protection.

Skin protection

- Hand protection

Wear protective gloves.

- Other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended. Wash hands thoroughly after handling.

Respiratory protection

During spraying wear suitable respiratory equipment.

Environmental exposure controls

Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

**Appearance**

| | |
|---|---|
| Physical state | aerosol (spray aerosol) |
| Color | various |
| Odor | characteristic |

**Other safety parameters**

| | |
|---|---|
| pH (value) | not determined |
| Melting point/freezing point | not determined |
| Initial boiling point and boiling range | 230.9 °C at 1 atm |
| Flash point | not determined |
| Evaporation rate | not determined |
| Flammability (solid, gas) | |
| Explosive limits | not determined |
| Vapor pressure | 5.74 bar at 20 °C |
| Density | not determined |
| Vapor density | this information is not available |
| Relative density | information on this property is not available |
| Solubility(ies) | not determined |

Partition coefficient

| | |
|---|---|
| - n-octanol/water (log KOW) | this information is not available |

| | |
|---|---|
| Auto-ignition temperature | >743 °C (auto-ignition temperature (liquids and gases)) |
| Viscosity | not relevant (aerosol) |
| Explosive properties | none |
| Oxidizing properties | none |

## 9.2 Other information

| | |
|---|---|
| Propellant content | 83.33 % |
| Temperature class (USA, acc. to NEC 500) | T1 (maximum permissible surface temperature on the equipment: 450°C) |

# A/C Pro Professional Formula Refrigerant with Max-Seal



## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials". The mixture contains reactive substance(s). Gas under pressure.

If heated:

Danger of explosion, Gas under pressure, Danger of bursting container

### 10.2 Chemical stability

See below "Conditions to avoid".

### 10.3 Possibility of hazardous reactions

No known hazardous reactions.

### 10.4 Conditions to avoid

There are no specific conditions known which have to be avoided.

Hints to prevent fire or explosion

Protect from sunlight.

### 10.5 Incompatible materials

Oxidizers

### 10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

Test data are not available for the complete mixture.

Classification procedure

The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

**Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)**

Acute toxicity

Shall not be classified as acutely toxic.

Acute toxicity estimate (ATE) of components of the mixture

| Name of substance | CAS No | Exposure route | ATE |
|---|---|---|---|
| Dimethyl adipate | Trade secret | dermal | 1,000 $^{mg}/_{kg}$ |

### Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

### Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

### Respiratory or skin sensitization

Shall not be classified as a respiratory or skin sensitizer.

### Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

### Carcinogenicity

Shall not be classified as carcinogenic.

### Reproductive toxicity

Shall not be classified as a reproductive toxicant.

### Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

### Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

### Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

## SECTION 12: Ecological information

### 12.1 Toxicity

Shall not be classified as hazardous to the aquatic environment.

### 12.2 Persistence and degradability

Data are not available.

### 12.3 Bioaccumulative potential

Data are not available.

### 12.4 Mobility in soil

Data are not available.

### 12.5 Results of PBT and vPvB assessment

Data are not available.

### 12.6 Other adverse effects

Endocrine disrupting potential

None of the ingredients are listed.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Sewage disposal-relevant information

Do not empty into drains. Avoid release to the environment. Refer to special instructions/safety data sheets.

Waste treatment of containers/packages

Only packagings which are approved (e.g. acc. to DOT) may be used. Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

**Remarks**

Please consider the relevant national or regional provisions. Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities.

## SECTION 14: Transport information

| | | |
|---|---|---|
| **14.1** | **UN number** | 3159 |
| **14.2** | **UN proper shipping name** | Refrigerant gas R 134a |
| **14.3** | **Transport hazard class(es)** | |
| | Class | 2.2 (gases) |
| **14.4** | **Packing group** | not assigned to a packing group |
| **14.5** | **Environmental hazards** | non-environmentally hazardous acc. to the dangerous goods regulations |
| 14.5.1 | Additional information | DOT-SP 10232, LTD QTY |

### 14.6 Special precautions for user

There is no additional information.

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

The cargo is not intended to be carried in bulk.

**Information for each of the UN Model Regulations**

**Transport of dangerous goods by road or rail (49 CFR US DOT)**

| | |
|---|---|
| Index number | 3159 |
| Proper shipping name | Refrigerant gas R 134a |
| - Particulars in the shipper's declaration | UN3159, Refrigerant gas R 134a, 2.2 |
| Class | 2.2 |
| Danger label(s) | 2.2 |

| | |
|---|---|
| Special provisions (SP) | T50, DOT-SP 10232, LTD QTY |
| ERG No | 126 |

**International Maritime Dangerous Goods Code (IMDG)**

| | |
|---|---|
| UN number | 3159 |
| Proper shipping name | 1,1,1,2-TETRAFLUOROETHANE |
| - Particulars in the shipper's declaration | UN3159, 1,1,1,2-TETRAFLUOROETHANE, 2.2 |
| Class | 2.2 |
| Marine pollutant | - |
| Danger label(s) | 2.2 |

| | |
|---|---|
| Special provisions (SP) | - |
| Excepted quantities (EQ) | E1 |
| Limited quantities (LQ) | 120 mL |
| EmS | F-C, S-V |
| Stowage category | A |

**International Civil Aviation Organization (ICAO-IATA/DGR)**

| | |
|---|---|
| UN number | 1950 |
| Proper shipping name | Aerosols, non-flammable |
| - Particulars in the shipper's declaration | UN1950, Aerosols, non-flammable, 2.2 |
| Class | 2.2 |
| Danger label(s) | 2.2 |

| | |
|---|---|
| Special provisions (SP) | A98, A145, A167 |
| Excepted quantities (EQ) | E0 |
| Limited quantities (LQ) | 30 kg |

## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations specific for the product in question

**National regulations (United States)**

**Toxic Substance Control Act (TSCA)** all ingredients are listed

**Superfund Amendment and Reauthorization Act (SARA TITLE III )**

- The List of Extremely Hazardous Substances and Their Threshold Planning Quantities (EPCRA Section 302, 304)

none of the ingredients are listed

- Specific Toxic Chemical Listings (EPCRA Section 313)

none of the ingredients are listed

**Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)**

- List of Hazardous Substances and Reportable Quantities (CERCLA section 102a) (40 CFR 302.4)

none of the ingredients are listed

**Clean Air Act**

none of the ingredients are listed

**Right to Know Hazardous Substance List**

- Toxic or Hazardous Substance List (MA-TURA)

none of the ingredients are listed

- Hazardous Substances List (MN-ERTK)

| Name of substance | Name acc. to inventory | CAS No | References | Remarks |
|---|---|---|---|---|
| R-134a | 1,1,1,2-Tetrafluoroethane | 811-97-2 | I | |

Legend
I American Industrial Hygiene Association (AIHA), "Workplace Environmental Exposure Level Guides" (1992), available from AIHA

- Hazardous Substance List (NJ-RTK)

none of the ingredients are listed

- Hazardous Substance List (Chapter 323) (PA-RTK)

none of the ingredients are listed

- Hazardous Substance List (RI-RTK)

none of the ingredients are listed

### California Environmental Protection Agency (Cal/EPA): Proposition 65 - Safe Drinking Water and Toxic Enforcement Act of 1987

none of the ingredients are listed

### Industry or sector specific available guidance(s)

### NPCA-HMIS® III

Hazardous Materials Identification System. American Coatings Association.

| Category | Rating | Description |
|---|---|---|
| Chronic | / | none |
| Health | 0 | no significant risk to health |
| Flammability | 1 | material that must be preheated before ignition can occur |
| Physical hazard | 0 | material that is normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosive |
| Personal protection | - | |

### NFPA® 704

National Fire Protection Association: Standard System for the Identification of the Hazards of Materials for Emergency Response (United States).

| Category | Degree of hazard | Description |
|---|---|---|
| Flammability | 1 | material that must be preheated before ignition can occur |
| Health | 3 | material that, under emergency conditions, can cause serious or permanent injury |
| Instability | 0 | material that is normally stable, even under fire conditions |
| Special hazard | | |

### National inventories

| Country | Inventory | Status |
|---|---|---|
| AU | AICS | all ingredients are listed |
| CA | DSL | all ingredients are listed |
| CN | IECSC | all ingredients are listed |
| EU | ECSI | not all ingredients are listed |
| EU | REACH Reg. | not all ingredients are listed |
| JP | CSCL-ENCS | not all ingredients are listed |

| Country | Inventory | Status |
|---|---|---|
| JP | ISHA-ENCS | not all ingredients are listed |
| KR | KECI | all ingredients are listed |
| MX | INSQ | not all ingredients are listed |
| NZ | NZIoC | all ingredients are listed |
| PH | PICCS | all ingredients are listed |
| TR | CICR | not all ingredients are listed |
| TW | TCSI | all ingredients are listed |
| US | TSCA | all ingredients are listed |

Legend

| | |
|---|---|
| AICS | Australian Inventory of Chemical Substances |
| CICR | Chemical Inventory and Control Regulation |
| CSCL-ENCS | List of Existing and New Chemical Substances (CSCL-ENCS) |
| DSL | Domestic Substances List (DSL) |
| ECSI | EC Substance Inventory (EINECS, ELINCS, NLP) |
| IECSC | Inventory of Existing Chemical Substances Produced or Imported in China |
| INSQ | National Inventory of Chemical Substances |
| ISHA-ENCS | Inventory of Existing and New Chemical Substances (ISHA-ENCS) |
| KECI | Korea Existing Chemicals Inventory |
| NZIoC | New Zealand Inventory of Chemicals |
| PICCS | Philippine Inventory of Chemicals and Chemical Substances (PICCS) |
| REACH Reg. | REACH registered substances |
| TCSI | Taiwan Chemical Substance Inventory |
| TSCA | Toxic Substance Control Act |

### 15.2 Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.

## SECTION 16: Other information, including date of preparation or last revision

### Indication of changes (revised safety data sheet)

| Section | Former entry (text/value) | Actual entry (text/value) | Safety-relev-ant |
|---|---|---|---|
| 14.7 | UN number:<br>1950 | UN number:<br>3159 | yes |
| 14.7 | Proper shipping name:<br>AEROSOLS | Proper shipping name:<br>1,1,1,2-TETRAFLUOROETHANE | yes |
| 14.7 | Particulars in the shipper's declaration:<br>UN1950, AEROSOLS, 2.2 | Particulars in the shipper's declaration:<br>UN3159, 1,1,1,2-TETRAFLUOROETHANE, 2.2 | yes |
| 14.7 | Special provisions (SP):<br>63, 190, 277, 327, 344, 381, 959 | Special provisions (SP):<br>- | yes |

# A/C Pro Professional Formula Refrigerant with Max-Seal



| Section | Former entry (text/value) | Actual entry (text/value) | Safety-relev-ant |
|---|---|---|---|
| 14.7 | Excepted quantities (EQ):<br>E0 | Excepted quantities (EQ):<br>E1 | yes |
| 14.7 | Limited quantities (LQ):<br>1 L | Limited quantities (LQ):<br>120 mL | yes |
| 14.7 | EmS:<br>F-D, S-U | EmS:<br>F-C, S-V | yes |
| 14.7 | Stowage category:<br>- | Stowage category:<br>A | yes |

## Abbreviations and acronyms

| Abbr. | Descriptions of used abbreviations |
|---|---|
| 49 CFR US DOT | 49 CFR U.S. Department of Transportation |
| Acute Tox. | Acute toxicity |
| ATE | Acute Toxicity Estimate |
| CAS | Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances) |
| DGR | Dangerous Goods Regulations (see IATA/DGR) |
| DNEL | Derived No-Effect Level |
| DOT | Department of Transportation (USA) |
| EINECS | European Inventory of Existing Commercial Chemical Substances |
| ELINCS | European List of Notified Chemical Substances |
| EmS | Emergency Schedule |
| ERG No | Emergency Response Guidebook - Number |
| GHS | "Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations |
| IATA | International Air Transport Association |
| IATA/DGR | Dangerous Goods Regulations (DGR) for the air transport (IATA) |
| ICAO | International Civil Aviation Organization |
| IMDG | International Maritime Dangerous Goods Code |
| MARPOL | International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant") |
| NLP | No-Longer Polymer |
| NPCA-HMIS® III | National Paint and Coatings Association: Hazardous Materials Identification System - HMIS® III, Third Edition |

# A/C Pro Professional Formula Refrigerant with Max-Seal



| Abbr. | Descriptions of used abbreviations |
|---|---|
| OSHA | Occupational Safety and Health Administration (United States) |
| PBT | Persistent, Bioaccumulative and Toxic |
| PNEC | Predicted No-Effect Concentration |
| Press. Gas | Gas under pressure |
| RTECS | Registry of Toxic Effects of Chemical Substances (database of NIOSH with toxicological information) |
| vPvB | Very Persistent and very Bioaccumulative |

## Key literature references and sources for data

OSHA Hazard Communication Standard (HCS), 29 CFR 1910.1200.

Transport of dangerous goods by road or rail (49 CFR US DOT). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

## Classification procedure

Physical and chemical properties: The classification is based on tested mixture.
Health hazards, Environmental hazards: The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

## List of relevant phrases (code and full text as stated in chapter 2 and 3)

| Code | Text |
|---|---|
| H280 | Contains gas under pressure; may explode if heated. |
| H312 | Harmful in contact with skin. |

## Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.