

acc. to 29 CFR 1910.1200 App D

### Solstice yf R-1234yf Service Can

Version number: 3.2 Revision: 2023-09-11 Replaces version of: 2020-07-14 (2)

#### **SECTION 1: Identification**

#### 1.1 Product identifier

Trade name Solstice yf R-1234yf Service Can

Alternative number(s) 0662498001305

#### 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)

e-mail: Autocare.regulatory@energizer.com

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** 

FOR EMERGENCY in USA & Canada CALL +1 800 255-3924 / For International CALL +1 813 248 0585 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<br>category | Hazard state-<br>ment |
|---------|----------------------|----------|------------------------------|-----------------------|
| B.2     | flammable gas        | 1        | Flam. Gas 1                  | H220                  |
| B.5     | gases under pressure | L        | Press. Gas L                 | 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.

United States: en Page: 1 / 18



acc. to 29 CFR 1910.1200 App D

### Solstice yf R-1234yf Service Can

Version number: 3.2 Revision: 2023-09-11 Replaces version of: 2020-07-14 (2)

#### 2.2 Label elements

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

- Signal word danger

- Pictograms

GHS02, GHS04



#### - Hazard statements

H220 Extremely flammable gas.

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.

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.

P381 Eliminate all ignition sources if safe to do so.

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

#### 2.3 Other hazards

#### Hazards not otherwise classified

May be harmful if inhaled (GHS category 5: acutely toxic - inhalation).

Toxic to aquatic life (GHS category 2: aquatic toxicity - acute).

#### Results of PBT and vPvB assessment

Does not contain a PBT-/vPvB-substance in a concentration of  $\geq$  0.1%.

#### Endocrine disrupting properties

Does not contain an endocrine disruptor (EDC) in a concentration of  $\geq$  0.1%.

### **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 |
|----------------------------|--------------------|-----|---|------------|
| 2,3,3,3-Tetrafluoropropene | CAS No<br>754-12-1 | ≥90 | Flam. Gas 1 / H220<br>Press. Gas L / H280 |            |

United States: en Page: 2 / 18



acc. to 29 CFR 1910.1200 App D

### Solstice yf R-1234yf Service Can

Version number: 3.2 Revision: 2023-09-11 Replaces version of: 2020-07-14 (2)

For full text of abbreviations: see SECTION 16.

Legend: Press. Gas

Press. Gas C: Gas under pressure: compressed gas Press. Gas L: Gas under pressure: liquefied gas

Press. Gas R: Gas under pressure: refrigerated liquefied gas

Press. Gas D: Gas under pressure: dissolved gas.

#### **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)

United States: en Page: 3 / 18



acc. to 29 CFR 1910.1200 App D

### Solstice yf R-1234yf Service Can

Version number: 3.2 Revision: 2023-09-11 Replaces version of: 2020-07-14 (2)

#### 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. If substance has entered a water course or sewer, inform the responsible authority.

#### 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

Managing of associated risks

- Flammability hazards

Keep away from sources of ignition - No smoking. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharge. Protect from sunlight.

United States: en Page: 4 / 18



acc. to 29 CFR 1910.1200 App D

### Solstice yf R-1234yf Service Can

Version number: 3.2 Replaces version of: 2020-07-14 (2) Revision: 2023-09-11

#### - 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

Occupational exposure limit values (Workplace Exposure Limits) this information is not available

Relevant DNELs of components of the mixture

| Name of sub-<br>stance          | CAS No   | End-<br>point | Threshold<br>level    | Protection goal,<br>route of expos-<br>ure | Used in           | Exposure time                 |
|---------------------------------|----------|---------------|-----------------------|--|-------------------|-------------------------------|
| 2,3,3,3-Tetrafluorop-<br>ropene | 754-12-1 | DNEL          | 950 mg/m <sup>3</sup> | human, inhalatory                          | worker (industry) | chronic - systemic<br>effects |

#### 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

In case of inadequate ventilation wear respiratory protection.

#### Environmental exposure controls

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

United States: en Page: 5 / 18





acc. to 29 CFR 1910.1200 App D

# Solstice yf R-1234yf Service Can

Version number: 3.2 Replaces version of: 2020-07-14 (2) Revision: 2023-09-11

#### **SECTION 9: Physical and chemical properties**

# 9.1 Information on basic physical and chemical properties Appearance

| Physical state | gaseous (liquefied)    |
|----------------|------------------------|
| Color          | not determined         |
| Particle       | not relevant (gaseous) |
| Odor           | characteristic         |

#### Other safety parameters

| pH (value)                              | not determined                                |
|---|---|
| Melting point/freezing point            | not determined                                |
| Initial boiling point and boiling range | -29 °C at 760 mmHg                            |
| Flash point                             | not determined                                |
| Evaporation rate                        | Not determined                                |
| Flammability (solid, gas)               | flammable gas in accordance with GHS criteria |

#### **Explosive limits**

| - Lower explosion limit (LEL) | 9 vol%  |
|-------------------------------|---|
| - Upper explosion limit (UEL) | >11 vol%                                      |
| Vapor pressure                | 580 kPa at 20 °C                              |
| Density                       | not determined                                |
| Vapor density                 | not determined                                |
| Relative density              | Information on this property is not available |
| Solubility(ies)               | not determined                                |

United States: en Page: 6 / 18



acc. to 29 CFR 1910.1200 App D

### Solstice yf R-1234yf Service Can

Version number: 3.2 Replaces version of: 2020-07-14 (2)

#### Partition coefficient

| - n-octanol/water (log KOW) | this information is not available |
|-----------------------------|-----------------------------------|
| Auto-ignition temperature   | 405 °C                            |
| Viscosity                   | not relevant (gaseous)            |
| Explosive properties        | none                              |
| Oxidizing properties        | none                              |

Revision: 2023-09-11

#### 9.2 Other information

| Temperature class (USA, acc. to NEC 500) | T2 (maximum permissible surface temperature on the equipment: |
|--|---|
|  | 300°C)  |

#### **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. Risk of ignition.

#### 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

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

#### 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.

United States: en Page: 7 / 18



acc. to 29 CFR 1910.1200 App D

### Solstice yf R-1234yf Service Can

Version number: 3.2 Replaces version of: 2020-07-14 (2) Revision: 2023-09-11

#### **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.

GHS of the United Nations, annex 4: May be harmful if inhaled.

#### 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

Toxic to aquatic life.

United States: en Page: 8 / 18



acc. to 29 CFR 1910.1200 App D

### Solstice yf R-1234yf Service Can

Version number: 3.2 Revision: 2023-09-11 Replaces version of: 2020-07-14 (2)

#### Aquatic toxicity (acute) of components of the mixture

| Name of substance               | CAS No   | Endpoint | Value                             | Species               | Exposure<br>time |
|---------------------------------|----------|----------|-----------------------------------|-----------------------|------------------|
| 2,3,3,3-Tetrafluorop-<br>ropene | 754-12-1 | LC50     | 33 <sup>mg</sup> / <sub>l</sub>   | fish                  | 96 h             |
| 2,3,3,3-Tetrafluorop-<br>ropene | 754-12-1 | EC50     | 65 <sup>mg</sup> / <sub>l</sub>   | aquatic invertebrates | 48 h             |
| 2,3,3,3-Tetrafluorop-<br>ropene | 754-12-1 | ErC50    | >2.5 <sup>mg</sup> / <sub>l</sub> | algae                 | 72 h             |
| 2,3,3,3-Tetrafluorop-<br>ropene | 754-12-1 | NOEC     | <34 <sup>mg</sup> / <sub>l</sub>  | aquatic invertebrates | 48 h             |

#### 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

According to the results of its assessment, this substance is not a PBT or a vPvB. Does not contain a PBT-/vPvB-substance in a concentration of  $\geq 0.1\%$ .

#### 12.6 Endocrine disrupting properties

Does not contain an endocrine disruptor (EDC) in a concentration of  $\geq$  0.1%.

#### 12.7 Other adverse effects

Data are not available.

#### **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.

United States: en Page: 9 / 18



acc. to 29 CFR 1910.1200 App D

### Solstice yf R-1234yf Service Can

Version number: 3.2 Revision: 2023-09-11 Replaces version of: 2020-07-14 (2)

#### **SECTION 14: Transport information**

14.1 UN number

DOT UN 2037 IMDG-Code UN 2037 ICAO-TI UN 2037

14.2 UN proper shipping name

DOT Receptacles, small, containing gas

IMDG-Code RECEPTACLES, SMALL, CONTAINING GAS

ICAO-TI Receptacles, small, containing gas

14.3 Transport hazard class(es)

DOT 2.1 IMDG-Code 2.1 ICAO-TI 2.1

**14.4 Packing group** not assigned

**14.5 Environmental hazards** non-environmentally hazardous acc. to the danger-

ous goods regulations

14.6 Special precautions for user

There is no additional information.

#### 14.7 Transport in bulk according to IMO instruments

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) - Additional information

Particulars in the shipper's declaration UN2037, Receptacles, small, containing gas, 2.1

Danger label(s) 2.1

PLANMAGE CAS

ERG No 115

United States: en Page: 10 / 18



acc. to 29 CFR 1910.1200 App D

### Solstice yf R-1234yf Service Can

Version number: 3.2 Revision: 2023-09-11 Replaces version of: 2020-07-14 (2)

#### International Maritime Dangerous Goods Code (IMDG) - Additional information

Particulars in the shipper's declaration UN2037, RECEPTACLES, SMALL, CONTAINING GAS,

2.1

Marine pollutant Danger label(s) 2.1



Special provisions (SP) 191, 277, 303, 327, 344, 959

Excepted quantities (EQ) E0
Limited quantities (LQ) 1 L
EmS F-D, S-U

Stowage category E

#### International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information

Particulars in the shipper's declaration UN2037, Receptacles, small, containing gas, 2.1

Danger label(s) 2.1



Special provisions (SP) A145, A167

Excepted quantities (EQ) E0
Limited quantities (LQ) 1 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 (ACTIVE) or exempt from

listing

#### 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

United States: en Page: 11 / 18

Energizer.

Holdings, Inc.

acc. to 29 CFR 1910.1200 App D

### Solstice yf R-1234yf Service Can

Version number: 3.2 Revision: 2023-09-11 Replaces version of: 2020-07-14 (2)

#### 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

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

none of the ingredients are listed

# Drug precursors, Chemicals designated within the Controlled Substances Act, 21 U.S.C. § 802, paragraphs 34 (list I) and 35 (list II)

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        | 4      | material that rapidly or completely vaporizes at atmospheric pressure and normal ambient temperature or that is readily dispersed in air and burn readily                |
| Physical hazard     | 4      | material that is readily capable of explosive water reaction, detonation or explosive decomposition, polymerization, or self-reaction at normal temperature and pressure |
| 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<br>hazard | Description   |
|----------------|---------------------|---|
| Flammability   | 4                   | material that rapidly or completely vaporizes at atmospheric pressure and normal ambient temperature or that is readily dispersed in air and burn readily |
| Health         | 0                   | material that, under emergency conditions, would offer no hazard beyond that of or-<br>dinary combustible material  |
| Instability    | 0                   | material that is normally stable, even under fire conditions  |
| Special hazard |                     |   |

United States: en Page: 12 / 18



acc. to 29 CFR 1910.1200 App D

### Solstice yf R-1234yf Service Can

Version number: 3.2 Revision: 2023-09-11 Replaces version of: 2020-07-14 (2)

#### **National inventories**

| Country | Inventory  | Status                              |
|---------|------------|-------------------------------------|
| AU      | AIIC       | all ingredients are listed          |
| CA      | DSL        | all ingredients are listed          |
| EU      | ECSI       | all ingredients are listed          |
| EU      | REACH Reg. | all ingredients are listed          |
| JP      | CSCL-ENCS  | all ingredients are listed          |
| JP      | ISHA-ENCS  | all ingredients are listed          |
| KR      | KECI       | all ingredients are listed          |
| NZ      | NZIoC      | all ingredients are listed          |
| TW      | TCSI       | all ingredients are listed          |
| US      | TSCA       | all ingredients are listed (ACTIVE) |
| VN      | NCI        | all ingredients are listed          |

Legend

AIIC

Australian Inventory of Industrial Chemicals List of Existing and New Chemical Substances (CSCL-ENCS) CSCL-ENCS

DSL Domestic Substances List (DSL)

**ECSI** 

ISHA-ENCS

EC Substance Institutes List (USL)
EC Substance Inventory (EINECS, ELINCS, NLP)
Inventory of Existing and New Chemical Substances (ISHA-ENCS)
Korea Existing Chemicals Inventory
National Chemical Inventory KECI NCI NZIoC New Zealand Inventory of Chemicals 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-<br>relev-<br>ant |
|---------|---|--|--------------------------|
| 2.3     | Results of PBT and vPvB assessment:<br>This mixture does not contain any substances<br>that are assessed to be a PBT or a vPvB. | Results of PBT and vPvB assessment:<br>Does not contain a PBT-/vPvB-substance in a concentration of ≥ 0.1%.        | yes                      |
| 2.3     |   | Endocrine disrupting properties:<br>Does not contain an endocrine disruptor (EDC) in<br>a concentration of ≥ 0.1%. | yes                      |

United States: en Page: 13 / 18



acc. to 29 CFR 1910.1200 App D

# Solstice yf R-1234yf Service Can

Revision: 2023-09-11

Version number: 3.2 Replaces version of: 2020-07-14 (2)

| Section | Former entry (text/value)   | Actual entry (text/value)  | Safety-<br>relev-<br>ant |
|---------|---|--|--------------------------|
| 3.2     |   | Legend: Press. Gas: Press. Gas C: Gas under pressure: compressed gas Press. Gas L: Gas under pressure: liquefied gas Press. Gas R: Gas under pressure: refrigerated li- quefied gas Press. Gas D: Gas under pressure: dissolved gas. | yes                      |
| 6.2     | Environmental precautions:<br>Keep away from drains, surface and ground wa-<br>ter. Retain contaminated washing water and dis-<br>pose of it. | Environmental precautions: Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it. If substance has entered a water course or sewer, inform the responsible authority.                 | yes                      |
| 8.1     | Control parameters:<br>This information is not available.   | Control parameters:<br>Occupational exposure limit values (Workplace<br>Exposure Limits)<br>this information is not available  | yes                      |
| 9.1     | Color:<br>various   | Color:<br>not determined   | yes                      |
| 9.1     |   | Particle:<br>not relevant (gaseous)  | yes                      |
| 12.1    |   | Aquatic toxicity (acute) of components of the mix-<br>ture:<br>change in the listing (table)   | yes                      |
| 12.5    | Results of PBT and vPvB assessment:<br>Data are not available.  | Results of PBT and vPvB assessment:<br>According to the results of its assessment, this<br>substance is not a PBT or a vPvB. Does not con-<br>tain a PBT-/vPvB-substance in a concentration of<br>≥ 0.1%.                            | yes                      |
| 12.6    | Endocrine disrupting potential:<br>None of the ingredients are listed.  | Endocrine disrupting properties:<br>Does not contain an endocrine disruptor (EDC) in<br>a concentration of ≥ 0.1%.   | yes                      |
| 12.7    | Other adverse effects   | Other adverse effects:<br>Data are not available.  | yes                      |
| 14.1    | UN number:<br>2037  | UN number  | yes                      |
| 14.1    |   | DOT:<br>UN 2037  | yes                      |
| 14.1    |   | IMDG-Code:<br>UN 2037  | yes                      |
| 14.1    |   | ICAO-TI:<br>UN 2037  | yes                      |

United States: en Page: 14 / 18



acc. to 29 CFR 1910.1200 App D

### Solstice yf R-1234yf Service Can

Revision: 2023-09-11

Version number: 3.2 Replaces version of: 2020-07-14 (2)

> Section Former entry (text/value) Actual entry (text/value) Safetyrelevant UN proper shipping name: yes 14.2 UN proper shipping name Receptacles, small, containing gas 14.2 DOT: yes Receptacles, small, containing gas 14.2 IMDG-Code: yes RECEPTACLES, SMALL, CONTAINING GAS 14.2 ICAO-TI: yes Receptacles, small, containing gas 14.3 Class: yes 2.1 (gases) (flammable) 14.3 DOT: yes 2.1 IMDG-Code: 14.3 yes 2.1 14.3 ICAO-TI: yes 2.1 14.4 Packing group: Packing group: yes not assigned to a packing group not assigned 14.7 Index number: yes 2037 14.7 Proper shipping name: yes Receptacles, small, containing gas 14.7 Class: yes 2.1 14.7 Danger label(s): yes change in the listing (table) 14.7 UN number: yes 2037 14.7 Proper shipping name: yes RECEPTACLES, SMALL, CONTAINING GAS 14.7 Class: yes 2.1 Special provisions (SP): 191, 277, 303, 344 14.7 Special provisions (SP): yes 191, 277, 303, 327, 344, 959 14.7 UN number: yes 2037

United States: en Page: 15 / 18



acc. to 29 CFR 1910.1200 App D

# Solstice yf R-1234yf Service Can

Revision: 2023-09-11

Version number: 3.2 Replaces version of: 2020-07-14 (2)

| Section | Former entry (text/value)  | Actual entry (text/value)   | Safety-<br>relev-<br>ant |
|---------|--|---|--------------------------|
| 14.7    | Proper shipping name:<br>Receptacles, small, containing gas  |   | yes                      |
| 14.7    | Class:<br>2.1  |   | yes                      |
| 14.7    | Special provisions (SP):<br>A167   | Special provisions (SP):<br>A145, A167  | yes                      |
| 15.1    | Toxic Substance Control Act (TSCA):<br>all ingredients are listed                                    | Toxic Substance Control Act (TSCA):<br>all ingredients are listed (ACTIVE) or exempt from<br>listing  | yes                      |
| 15.1    | Right to Know Hazardous Substance List   |   | yes                      |
| 15.1    | Cleaning Product Right to Know Act Substance<br>List (CA-RTK):<br>none of the ingredients are listed |   | yes                      |
| 15.1    | Toxic or Hazardous Substance List (MA-TURA):<br>none of the ingredients are listed                   |   | yes                      |
| 15.1    | Hazardous Substances List (MN-ERTK):<br>none of the ingredients are listed                           |   | yes                      |
| 15.1    | Hazardous Substance List (NJ-RTK):<br>none of the ingredients are listed                             |   | yes                      |
| 15.1    | Hazardous Substance List (Chapter 323) (PA-RTK):<br>none of the ingredients are listed               |   | yes                      |
| 15.1    | Hazardous Substance List (RI-RTK):<br>none of the ingredients are listed                             |   | yes                      |
| 15.1    |  | Drug precursors, Chemicals designated within the<br>Controlled Substances Act, 21 U.S.C. § 802, para-<br>graphs 34 (list I) and 35 (list II):<br>none of the ingredients are listed | yes                      |
| 15.1    |  | National inventories:<br>change in the listing (table)  | yes                      |

### **Abbreviations and acronyms**

| Abbr.         | Descriptions of used abbreviations   |
|---------------|--|
| 49 CFR US DOT | 49 CFR U.S. Department of Transportation   |
| 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  |
|               |  |

United States: en Page: 16 / 18



acc. to 29 CFR 1910.1200 App D

# Solstice yf R-1234yf Service Can

Revision: 2023-09-11

Version number: 3.2 Replaces version of: 2020-07-14 (2)

| Abbr.          | Descriptions of used abbreviations   |
|----------------|--|
| DOT            | Department of Transportation (USA)   |
| EC50           | Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval |
| EINECS         | European Inventory of Existing Commercial Chemical Substances  |
| ELINCS         | European List of Notified Chemical Substances  |
| EmS            | Emergency Schedule   |
| ErC50          | ≡ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control           |
| ERG No         | Emergency Response Guidebook - Number  |
| Flam. Gas      | Flammable gas  |
| 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  |
| ICAO-TI        | Technical instructions for the safe transport of dangerous goods by air  |
| IMDG           | International Maritime Dangerous Goods Code  |
| IMDG-Code      | International Maritime Dangerous Goods Code  |
| LC50           | Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval                                |
| NLP            | No-Longer Polymer  |
| NOEC           | No Observed Effect Concentration   |
| NPCA-HMIS® III | National Paint and Coatings Association: Hazardous Materials Identification System - HMIS® III, Third Edition  |
| OSHA           | Occupational Safety and Health Administration (United States)  |
| PBT            | Persistent, Bioaccumulative and Toxic  |
| Press. Gas     | Gas under pressure   |
| Press. Gas C   | Compressed gas   |
| Press. Gas D   | Dissolved gas  |
| Press. Gas L   | Liquefied gas  |
| Press. Gas R   | Refrigerated liquefied gas   |
| RTECS          | Registry of Toxic Effects of Chemical Substances (database of NIOSH with toxicological information)  |

United States: en Page: 17 / 18





acc. to 29 CFR 1910.1200 App D

### Solstice yf R-1234yf Service Can

Version number: 3.2 Replaces version of: 2020-07-14 (2)

| Abbr. | Descriptions of used abbreviations       |
|-------|--|
| vPvB  | Very Persistent and very Bioaccumulative |

Revision: 2023-09-11

#### 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 section 2 and 3)

| Code | Text  |
|------|---|
| H220 | Extremely flammable gas.                            |
| H280 | Contains gas under pressure; may explode if heated. |

#### Disclaimer

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

United States: en Page: 18 / 18