

MATERIAL SAFETY DATA SHEET

According to Regulation (EU) No 453/2010

SECTION 1 IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product name : VECTAIR AIROMA COOL AERO-01

Product code : 1252128

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

Application : SU22 Professional use. For industrial or institutional use. Airfreshener.

1.3. Details of the supplier of the safety data sheet

Supplier : Vectair System LTD
Unit 3, Trident Centre, Armstrong Road
RG248NU BASINGSTOKE, HAMPSHIRE, Great Britain

Telephone : +44 1256 319500
Fax : +44 1256 319520
E-mail : msds@vectairsystems.com
Website : <http://www.vectairsystems.com>

1.4. Emergency telephone number

EMERGENCY TELEPHONE NUMBER, for DOCTORS/FIRE BRIGADE/POLICE only:

GB - Telephone : +44 1256 319500 (During office hours only)

EMERGENCY TELEPHONE NUMBER (for DOCTORS only):

National Poisons Information Service +44-844 892 0111 (24/7)

SECTION 2 HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Classification (99/45/EC) : Extremely flammable.

CLP classification (1272/2008/EC) : Aerosols, category 1. Eye irritation, category 2. Specific target organ toxicity after single exposure, category 3. Hazardous to the aquatic environment — Chronic category 3.

Human health hazards : Causes serious eye irritation. May cause drowsiness or dizziness. May produce an allergic reaction. Exposure to high vapour concentrations may result in a narcotic effect. Use only as directed. Intentional misuse by deliberately concentrating and inhaling contents can be harmful or fatal.

Physical/chemical hazards : Extremely flammable. Keep away from sources of ignition — No smoking. Do not spray on a naked flame or any incandescent material. Do not spray near fire, sources of heat or live electrical equipment. Aerosol may explode from internal pressure build-up when exposed to temperatures exceeding 50 °C.

Environmental hazards : Harmful to aquatic life with long lasting effects.

Other information : Keep out of the reach of children. Caution: Do not breathe spray. Use only in well-ventilated areas. Spray in short intervals for a short period only. Ventilate well after use. Harmful to house pets.

2.2. Label elements

Label elements (99/45/EC):

Hazard symbols :



F+: Extremely flammable

R- and S-phrases : R12 Extremely flammable.

MATERIAL SAFETY DATA SHEET

According to Regulation (EU) No 453/2010

S2 Keep out of the reach of children.
S16 Keep away from sources of ignition — No smoking.
S23 Aerosol Do not breathe spray.
S51 Use only in well-ventilated areas.

Additional labelling : Important: Pressurized container; protect from sunlight and do not expose to temperatures exceeding 50°C.
Do not pierce or burn, even after use. Do not spray on a naked flame or any incandescent material.

Label elements (1272/2008/EC):

Hazard pictograms :



Signal word : Danger

H- and P-phrases : H222 Extremely flammable aerosol.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.
H229 Pressurised container: May burst if heated.
H412 Harmful to aquatic life with long lasting effects.
EUH208 Contains ... May produce an allergic reaction. Reference is made to additional labelling for full text of EUH208*.
P251 Do not pierce or burn, even after use.
P410+P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P211 Do not spray on an open flame or other ignition source.
P261 spray Avoid breathing spray.
P403 Store in a well-ventilated place.

Additional labelling (99/45/EC and/or 1272/2008/EC)

: * Contains d-Limonene Hexyl salicylate alpha-Hexylcinnamaldehyde Butylphenyl methylpropional Pin-2(10)-ene 4-(4-Hydroxy-4-methylpentyl)cyclohex-3-enecarbaldehyde May produce an allergic reaction.
: Where the mixture is labelled in accordance with Regulation (EC) No 1272/2008 (CLP) the packaging shall (also) carry the text: Contains: Propan-2-ol

2.3. Other hazards

Other information : The classification of this product is based on the non-aerosolised form of the mixture (on basis of section 1.1.3.7. of Regulation (EC) No 1272/2008). Does not contain PBT or vPvB substances in concentrations higher than 0,1%.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

3.2. Mixtures

Product description : Mixture.

Information on hazardous substances:

| Substance name | Concentration (w/w) (%) | CAS nr. | EC number | Symbols | R-phrases |
|---------------------------|-------------------------|------------|-----------|---------|-----------|
| Isobutane | 50 - 75 | 75-28-5 | 200-857-2 | F+ | 12 |
| Ethanol | 10 - < 20 | 64-17-5 | 200-578-6 | F | 11 |
| Propane | 10 - < 20 | 74-98-6 | 200-827-9 | F+ | 12 |
| Propan-2-ol | 5 - < 10 | 67-63-0 | 200-661-7 | F; Xi | 11-36-67 |
| Propyleneglycol | 5 - < 10 | 57-55-6 | 200-338-0 | ---- | ---- |
| Butane | 1 - < 5 | 106-97-8 | 203-448-7 | F+ | 12 |
| 2,6-Dimethyloct-7-en-2-ol | 0,1 - < 1 | 18479-58-8 | 242-362-4 | Xi | 38 |

MATERIAL SAFETY DATA SHEET

According to Regulation (EU) No 453/2010

| | | | | | |
|---|-----------|------------|-----------|-------|-------------------|
| 1,4-Dioxacycloheptadecane-5,17-dione | 0,1 - < 1 | 105-95-3 | 203-347-8 | N | 51/53 |
| d-Limonene | 0,1 - < 1 | 5989-27-5 | 227-813-5 | Xi; N | 10-38-43-50/53-65 |
| Hexyl salicylate | 0,1 - < 1 | 6259-76-3 | 228-408-6 | Xi; N | 38-43-50/53 |
| alpha-Hexylcinnamaldehyde | 0,1 - < 1 | 101-86-0 | 202-983-3 | Xi | 38-43 |
| 2-Ethyl-4-(2,2,3-trimethyl-3-cyclopenten-1-yl)-2-buten-1-ol | | 28219-61-6 | 248-908-8 | Xi; N | 36-50/53 |
| 2-(4-tert-butylbenzyl)propionaldehyde | < 0,1 | 80-54-6 | 201-289-8 | Xn; N | 22-38-43-51/53-62 |
| Pin-2(10)-ene | < 0,1 | 127-91-3 | 204-872-5 | Xn | 10-38-43-65 |
| 4-(4-Hydroxy-4-methylpentyl)cyclohex-3-enecarbaldehyde | < 0,1 | 31906-04-4 | 250-863-4 | Xi | 43-52/53 |

Reference is made to chapter 16 for full text of each relevant R phrase. Occupational exposure limit(s), if relevant, are listed in section 8.

| Substance name | REACH nr. | Hazard Class | Pictograms | H-phrases |
|---|------------------|---|----------------------------|-------------------------------|
| Isobutane | 01-2119485395-27 | Flam. Gas 1; Press. Gas | GHS02; GHS04 | H220; H280 |
| Ethanol | 01-2119457610-43 | Flam. Liq. 2; Eye Irrit. 2 | GHS02; GHS07 | H225; H319 |
| Propane | 01-2119486944-21 | Flam. Gas 1; Press. Gas | GHS02; GHS04 | H220; H280 |
| Propan-2-ol | 01-2119457558-25 | Flam. Liq. 2; Eye Irrit. 2; STOT SE 3 | GHS02; GHS07 | H225; H319; H336 |
| Propyleneglycol | 01-2119456809-23 | ----- | ----- | ----- |
| Butane | 01-2119474691-32 | Flam. Gas 1; Press. Gas | GHS02; GHS04 | H220; H280 |
| 2,6-Dimethyloct-7-en-2-ol | 01-2119457274-37 | Skin Irrit. 2; Eye Irrit. 2 | GHS07 | H315; H319 |
| 1,4-Dioxacycloheptadecane-5,17-dione | | Aquatic Chronic 2 | GHS09 | H411 |
| d-Limonene | 01-2119529223-47 | Flam. Liq. 3; Skin Irrit. 2; Skin Sens. 1B; Asp. Tox. 1; Aquatic Acute 1; Aquatic Chronic 1 | GHS02; GHS07; GHS09; GHS08 | H226; H304; H315; H317; H410 |
| Hexyl salicylate | 01-2119638275-36 | Skin Irrit. 2; Skin Sens. 1; Aquatic Acute 1; Aquatic Chronic 1 | GHS07; GHS09 | H315; H317; H400; H410 |
| alpha-Hexylcinnamaldehyde | 01-2119533092-50 | Skin Sens. 1B | GHS07 | H317 |
| 2-Ethyl-4-(2,2,3-trimethyl-3-cyclopenten-1-yl)-2-buten-1-ol | 01-2119529224-45 | Eye Irrit. 2; Aquatic Chronic 1 | GHS07; GHS09 | H319; H400; H410 |
| 2-(4-tert-butylbenzyl)propionaldehyde | 01-2119485965-18 | Aquatic Chronic 2; Skin Irrit. 2; Skin Sens. 1; Acute Tox. 4; Repr. 2 | GHS07; GHS08; GHS09 | H302; H315; H317; H411; H361f |
| Pin-2(10)-ene | 01-2119519230-54 | Flam. Liq. 3; Skin Sens. 1B; Asp. Tox. 1; Skin Irrit. 2 | GHS02; GHS07; GHS08 | H226; H317; H304; H315 |
| 4-(4-Hydroxy-4-methylpentyl)cyclohex-3-enecarbaldehyde | | Skin Sens. 1; Aquatic Chronic 3 | GHS07 | H317; H412 |

Reference is made to chapter 16 for full text of each relevant H phrase.

SECTION 4 FIRST-AID MEASURES

4.1. Description of first aid measures

First aid measures

- Inhalation : Move victim into fresh air. Consult a doctor if victim feels unwell.
- Skin contact : Take off contaminated clothing. Wash off skin with plenty of water and soap before product dries up. Consult a doctor if irritation occurs.
- Eye contact : Wash out with (lukewarm) water for at least 15 minutes. Remove contact lenses. Consult a doctor.
- Ingestion : Aerosol/mist: Ingestion is unlikely to occur.

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

Effects and symptoms

MATERIAL SAFETY DATA SHEET

According to Regulation (EU) No 453/2010

- Inhalation : May cause headache, dizziness and a feeling of sickness. May cause irritation to respiratory airways and coughing.
- Skin contact : May produce an allergic reaction. May cause dry skin and redness.
- Eye contact : Irritant. May cause redness and pain.
- Ingestion : Aerosol/mist: Ingestion is unlikely to occur.

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

Note to physicians : None known.

SECTION 5 FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Extinguishing media

- Suitable : Carbondioxide (CO2). Alcohol resistant foam. Dry chemical. Water fog.
- Not suitable : Water jet.

5.2. Special hazards arising from the substance or mixture

- Special exposure hazards : Aerosol may explode from internal pressure build-up when exposed to temperatures exceeding 50 °C. Do not expose emergency personnel to overheated aerosol containers. Water may be used to cool container and prevent explosion of the aerosol.
- Hazardous thermal decomposition products : Carbon monoxide may be evolved if incomplete combustion occurs.

5.3. Advice for firefighters

- Special protective equipment for fire-fighters : Fight a fire where aerosols are involved from a protected position. Use adequate respiratory equipment in case of insufficient ventilation.

SECTION 6 ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

- Personal precautions : Danger of slipping. Clean up spills immediately. Wear shoes with non-slip soles. Avoid contact with spilled or released material. Do not breathe vapours and/or spray. Keep away from sources of ignition — No smoking. Build up of highly flammable gasses involves an explosion risk. Vapours are heavier than air. Build up (of gasses) in low areas involves risk of suffocation.

6.2. Environmental precautions

- Environmental precautions : Avoid release of product into sewers, surface water and/or ground water. Waste product should not be allowed to contaminate soil or water.
- Other information : Notify authorities if any exposure to the general public or the environment occurs or is likely to occur.

6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : Collect spilled material in containers. Collect cans in an approved container. Do not pierce aerosols. Wash away remainder with plenty of water and soap.

6.4. Reference to other sections

- Reference to other sections : See also section 8.

SECTION 7 HANDLING AND STORAGE

7.1. Precautions for safe handling

MATERIAL SAFETY DATA SHEET

According to Regulation (EU) No 453/2010

Handling : Handle in accordance with good occupational hygiene and safety practices in well-ventilated areas.
Important: Pressurized container; protect from sunlight and do not expose to temperatures exceeding 50°C.
Do not pierce or burn, even after use. Keep away from sources of ignition — No smoking. Do not spray on a naked flame or any incandescent material. Do not spray near fire, sources of heat or live electrical equipment.
Electrostatic discharge may cause fire. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Do not breathe spray. Do not breathe vapour. Avoid contact with skin and eyes.

7.2. Conditions for safe storage, including any incompatibilities

Storage : Keep frost-free, in a cool (< 35°), dry and well-ventilated place. Protect from sunlight and keep away from heat.
Recommended packaging : Not applicable.

7.3. Specific end use(s)

Use : Use only as directed.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Occupational exposure limits : Occupational exposure limits have not been established for this product. Derived no-effect levels (DNEL) have not been established for this product. Predicted no-effect concentrations (PNEC) have not been established for this product.

Workplace exposure limits (mg/m³):

| Chemical name | Country | TWA 8 hour (mg/m ³) | STEL 15 min (mg/m ³) | Comments |
|-----------------|---------|---------------------------------|----------------------------------|---------------------------------------|
| Isobutane | | 1900 | 2400 | |
| Ethanol | GB | 1920 | - | |
| Ethanol | | 260 | 1900 | Mac: NL |
| Propane | | 1800 | - | |
| Propan-2-ol | GB | 999 | 1250 | |
| Propyleneglycol | GB | 474 | - | Total Vapour and Particulates |
| Propyleneglycol | | 474 | - | MAC UK: Total Vapour and Particulates |
| Butane | GB | 1450 | 1810 | |
| Butane | | 1450 | 1810 | |
| d-Limonene | | 110 | - | MAC: DE, CH, NL |

Derived no-effect level (DNEL) for workers:

| Chemical name | Route of exposure | DNEL, short-term | | DNEL, long-term | |
|---|-------------------|------------------------|-------------------------|----------------------|-------------------------|
| | | Local effect | Systemic effect | Local effect | Systemic effect |
| Ethanol | Dermal | | | | 343 mg/kg bw/day |
| | Inhalation | 1900 mg/m ³ | | | 950 mg/m ³ |
| Propan-2-ol | Dermal | | | | 888 mg/kg bw/day |
| | Inhalation | | | 10 mg/m ³ | 500 mg/m ³ |
| Propyleneglycol | Inhalation | | | | 168 mg/m ³ |
| 2,6-Dimethyloct-7-en-2-ol | Dermal | | | | 20,8 mg/kg bw/day |
| | Inhalation | | | | 73,5 mg/m ³ |
| d-Limonene | Inhalation | | | | 33,3 mg/m ³ |
| Hexyl salicylate | Dermal | | 2083 mg/kg bw | | 2083 mg/kg bw/day |
| | Inhalation | | 0,729 mg/m ³ | | 0,729 mg/m ³ |
| alpha-Hexylcinnamaldehyde | Dermal | 0,525 mg/kg bw | | 0,525 mg/kg bw/day | 18,2 mg/kg bw/day |
| | Inhalation | 6,28 mg/m ³ | | | 0,078 mg/m ³ |
| 2-Ethyl-4-(2,2,3-trimethyl-3-cyclopenten-1-yl)-2-buten-1-ol | Dermal | | 6 mg/kg bw | | 1,4 mg/kg bw/day |
| | Inhalation | | 7 mg/m ³ | | 7 mg/m ³ |

Product name : Vectair Airoma Cool AERO-01

Date of issue : 09-04-2015

Replaces issue dated

: ---

Page 5/15

CHESSOL MSDS

MATERIAL SAFETY DATA SHEET

According to Regulation (EU) No 453/2010

| | | | | | |
|---------------------------------------|------------|------------------------|------------------------|-------------------------|-------------------------|
| 2-(4-tert-butylbenzyl)propionaldehyde | Dermal | 0,41 mg/kg bw | 20 mg/kg bw | | 3,33 mg/kg bw/day |
| | Inhalation | 0,29 mg/m ³ | 0,29 mg/m ³ | 0,048 mg/m ³ | 0,048 mg/m ³ |
| Pin-2(10)-ene | Inhalation | | | | 5,98 mg/m ³ |

Derived no-effect level (DNEL) for consumers:

| Chemical name | Route of exposure | DNEL, short-term | | DNEL, long-term | |
|---|-------------------|------------------------|-------------------------|-------------------------|-------------------------|
| | | Local effect | Systemic effect | Local effect | Systemic effect |
| Ethanol | Dermal | | | | 206 mg/kg bw/day |
| | Inhalation | 950 mg/m ³ | | | 114 mg/m ³ |
| | Oral | | | | 87 mg/kg bw/day |
| Propan-2-ol | Dermal | | | | 319 mg/kg bw/day |
| | Inhalation | | | | 89 mg/m ³ |
| | Oral | | | | 26 mg/kg bw/day |
| Propyleneglycol | Inhalation | | | 10 mg/m ³ | 50 mg/m ³ |
| 2,6-Dimethyloct-7-en-2-ol | Dermal | | | | 12,5 mg/kg bw/day |
| | Inhalation | | | | 21,7 mg/m ³ |
| | Oral | | | | 12,5 mg/kg bw/day |
| d-Limonene | Inhalation | | | | 8,33 mg/m ³ |
| | Oral | | | | 4,76 mg/kg bw/day |
| Hexyl salicylate | Dermal | | 1250 mg/kg bw | | 1250 mg/kg bw/day |
| | Inhalation | | 0,219 mg/m ³ | | 0,219 mg/m ³ |
| | Oral | | 0,0625 mg/kg bw | | 0,0625 mg/kg bw/day |
| alpha-Hexylcinnamaldehyde | Dermal | 0,0787 mg/kg bw | | 0,0787 mg/kg bw/day | 9,11 mg/kg bw/day |
| | Inhalation | 4,71 mg/m ³ | | | 0,019 mg/m ³ |
| | Oral | | | | 0,056 mg/kg bw/day |
| 2-Ethyl-4-(2,2,3-trimethyl-3-cyclopenten-1-yl)-2-buten-1-ol | Dermal | | 3 mg/kg bw | | 0,5 mg/kg bw/day |
| | Inhalation | | 1,5 mg/m ³ | | 1,5 mg/m ³ |
| | Oral | | 3 mg/kg bw | | 0,5 mg/kg bw/day |
| 2-(4-tert-butylbenzyl)propionaldehyde | Dermal | 0,41 mg/kg bw | 20 mg/kg bw | | 1,67 mg/kg bw/day |
| | Inhalation | 0,07 mg/m ³ | 0,07 mg/m ³ | 0,012 mg/m ³ | 0,012 mg/m ³ |
| | Oral | | 0,041 mg/kg bw | | 0,007 mg/kg bw/day |
| Pin-2(10)-ene | Inhalation | | | | 1,06 mg/m ³ |
| | Oral | | | | 0,31 mg/kg bw/day |

Predicted no-effect concentration (PNEC):

| Chemical name | Route of exposure | Fresh water | Marine water | |
|-----------------|--------------------|-------------|--------------|-----------------|
| Ethanol | Water | 0,96 mg/l | 0,79 mg/l | |
| | Sediment | 3,6 mg/kg | 2,9 mg/kg | |
| | Intermittent water | | | 2,75 mg/l |
| | STP | | | 580 mg/l |
| | Soil | | | 0,63 mg/kg |
| Propan-2-ol | Oral | | | 0,72 mg/kg food |
| | Water | 140,9 mg/l | 140,9 mg/l | |
| | Sediment | 552 mg/kg | 552 mg/kg | |
| | Intermittent water | | | 140,9 mg/l |
| | STP | | | 2251 mg/l |
| Propyleneglycol | Soil | | | 28 mg/kg |
| | Oral | | | 160 mg/kg food |
| | Water | 260 mg/l | 26 mg/l | |
| | Sediment | 572 mg/kg | 57,2 mg/kg | |
| | Intermittent water | | | 183 mg/l |
| | STP | | | 20000 mg/l |
| | Soil | | | 50 mg/kg |
| | Oral | | | 1133 mg/kg food |

MATERIAL SAFETY DATA SHEET

According to Regulation (EU) No 453/2010

| | | | | |
|---|--------------------|---------------|---------------|-----------------|
| 2,6-Dimethyloct-7-en-2-ol | Water | 0,0278 mg/l | 0,0027 mg/l | |
| | Sediment | 0,594 mg/kg | 0,0594 mg/kg | |
| | Intermittent water | | | 0,278 mg/l |
| | STP | | | 10 mg/l |
| | Soil | | | 0,103 mg/kg |
| 1,4-Dioxacycloheptadecane-5,17-dione | Oral | | | 111 mg/kg food |
| | Water | 0,00187 mg/l | 0,000187 mg/l | |
| | Sediment | 1,26 mg/kg | 0,13 mg/kg | |
| | Intermittent water | | | 0,0187 mg/l |
| | STP | | | 124 mg/l |
| d-Limonene | Soil | | | 0,25 mg/kg |
| | Oral | | | 33,3 mg/kg food |
| | Water | 0,0054 mg/l | 0,0005 mg/l | |
| | Sediment | 1,32 mg/kg | 0,13 mg/kg | |
| | STP | | | 1,8 mg/l |
| Hexyl salicylate | Soil | | | 0,262 mg/kg |
| | Oral | | | 3,33 mg/kg food |
| | Water | 0,000357 mg/l | 0,0001 mg/l | |
| | Sediment | 0,272 mg/kg | 0,0272 mg/kg | |
| | Intermittent water | | | 0,0036 mg/l |
| alpha-Hexylcinnamaldehyde | STP | | | 10 mg/l |
| | Soil | | | 0,0542 mg/kg |
| | Water | 0,03 mg/l | 0,003 mg/l | |
| | Sediment | 47,7 mg/kg | 4,77 mg/kg | |
| | Intermittent water | | | 0,03 mg/l |
| 2-Ethyl-4-(2,2,3-trimethyl-3-cyclopenten-1-yl)-2-buten-1-ol | STP | | | 10 mg/l |
| | Soil | | | 9,51 mg/kg |
| | Oral | | | 6,6 mg/kg food |
| | Water | 0,00063 mg/l | 0,000063 mg/l | |
| | Sediment | 0,044 mg/kg | 0,0044 mg/kg | |
| 2-(4-tert-butylbenzyl)propionaldehyde | STP | | | 1 mg/l |
| | Soil | | | 0,0084 mg/kg |
| | Oral | | | 1 mg/kg food |
| | Water | 0,0020 mg/l | 0,0002 mg/l | |
| | Sediment | 0,0584 mg/kg | 0,0058 mg/kg | |
| Pin-2(10)-ene | Intermittent water | | | 0,0204 mg/l |
| | STP | | | 1,049 mg/l |
| | Soil | | | 0,0463 mg/kg |
| | Water | 2 mg/l | 0,2 mg/l | |
| | Sediment | 0,485 mg/kg | 0,048 mg/kg | |
| | STP | | | 3,26 mg/l |
| | Soil | | | 0,49 mg/kg |
| | Oral | | | 1,35 mg/kg food |

8.2. Exposure controls

Engineering measures : Use only in well-ventilated areas. Comply with standard precautionary measures for working with chemicals.
Hygienic measures : When using do not eat, drink or smoke.

Personal protective equipment:

The efficiency of personal protective equipment depends among other things on temperature and degree of ventilation. Always get professional advice for the particular local situation.

Body protection : Use of specific protective industrial clothing is not required under normal conditions of use. In case of large scale exposure wear suitable protective clothing, overalls or suit, and similar boots. Suitable material: butyl. Indication of permeation breakthrough time: not known.

Respiratory protection : Take care of sufficient ventilation. Wear suitable respiratory protection in case of large scale exposure. Suitable: gas filter type A (brown), class I or higher on e.g. a facemask in accordance with EN 140.

MATERIAL SAFETY DATA SHEET

According to Regulation (EU) No 453/2010

- Hand protection : Under normal conditions of use specific gloves are not required. Wear appropriate gloves in case of frequent or prolonged use and in case of large scale exposure. Suitable material: butyl. \pm 0,5 mm. Indication of permeation breakthrough time: not known.
- Eye protection : Wear appropriate safety glasses with side shields, in accordance with EN 166, when there is danger of possible eye contact.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

| | | |
|---|------------------------|---|
| Appearance | : Aerosol. | |
| Colour | : Colourless. | |
| Odour | : Perfumed. | |
| Odour threshold | : Not known. | |
| pH | : Not applicable. | Almost waterfree product. |
| Solubility in water | : Soluble. | |
| Partition coefficient (n-octanol/water) | : Not known. | |
| Flash point | : Not applicable. | Not measurable. |
| Flammability (solid, gas) | : Extremely flammable. | |
| Auto ignition temperature | : Not applicable. | Aerosol container explodes before reaching the auto-ignition point. |
| Boiling point/boiling range | : Not known. | Not measurable. |
| Melting point/melting range | : < 0 °C | |
| Explosive properties | : | Pressurised container: May burst if heated. |
| Explosion limits (in air) | : Not known. | Lower explosion limit in air (%): 1,3 (Butane) |
| | : | Upper explosion limit in air (%): 19 Ethanol |
| Oxidising properties | : Not applicable. | Does not contain oxidizing substances. |
| Decomposition temperature | : Not applicable. | |
| Viscosity (20°C) | : Not known. | |
| Viscosity (40°C) | : Not known. | |
| Vapour pressure (20°C) | : 360000 Pa | |
| Vapour density (20°C) | : > 1 | (air = 1) |
| Relative density (20°C) | : 0,622 g/ml | |
| Evaporation rate | : Not known. | (n-butyl acetate = 1) |

SECTION 10 STABILITY AND REACTIVITY

10.1. Reactivity

Reactivity : See sub-sections below.

10.2. Chemical stability

Stability : Stable under normal conditions.

10.3. Possibility of hazardous reactions

Reactivity : No other hazardous reactions known.

10.4. Conditions to avoid

Conditions to avoid : Keep away from sources of ignition and sources of heat. See section 7.

10.5. Incompatible materials

Materials to avoid : Not applicable.

10.6. Hazardous decomposition products

MATERIAL SAFETY DATA SHEET

According to Regulation (EU) No 453/2010

Hazardous decomposition : Not known.
products

SECTION 11 TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

No toxicological research has been carried out on this product.

Inhalation

- Acute toxicity : Calculated LC50: > 10 mg/l. Ingredients of unknown toxicity: 2 %. ATE: > 5 mg/l. Low toxicity. Not classified - based on available data, the classification criteria are not met. May cause headache, dizziness and a feeling of sickness. May cause damage to organs. Target organ(s): Central nervous system. Effect(s): Breathing of high vapour concentrations may cause central nervous system (CNS) depression resulting in dizziness, lightheadedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness and death.
- Corrosion/irritation : May cause irritation to respiratory airways and coughing. Not classified - based on available data, the classification criteria are not met.
- Sensitisation : Not classified - based on available data, the classification criteria are not met.
- Carcinogenicity : Not classified - based on available data, the classification criteria are not met.
- Mutagenicity : Does not contain mutagenic substances. Not classified - based on available data, the classification criteria are not met.

Skin contact

- Acute toxicity : Calculated LD50: > 5000 mg/kg.bw. Ingredients of unknown toxicity: < 1 %. ATE: > 2000 mg/kg.bw. Low toxicity. Not classified - based on available data, the classification criteria are not met.
- Corrosion/irritation : Slight irritation possible. Not classified - based on available data, the classification criteria are not met.
- Sensitisation : May produce an allergic reaction.
- Mutagenicity : Does not contain mutagenic substances. Not classified - based on available data, the classification criteria are not met.

Eye contact

- Corrosion/irritation : Irritant.

Ingestion

- Acute toxicity : Aerosol/mist: Ingestion is unlikely to occur. Calculated LD50: > 879 mg/kg.bw. Ingredients of unknown toxicity: < 1 %. ATE: > 2000 mg/kg.bw. Low toxicity. Not classified - based on available data, the classification criteria are not met. May cause hampered eyesight.
- Corrosion/irritation : Aerosol/mist: Ingestion is unlikely to occur. May cause a feeling of sickness, vomiting and diarrhoea. Not classified - based on available data, the classification criteria are not met.
- Carcinogenicity : Aerosol/mist: Ingestion is unlikely to occur. Not classified - based on available data, the classification criteria are not met.
- Mutagenicity : Aerosol/mist: Ingestion is unlikely to occur. Does not contain mutagenic substances. Not classified - based on available data, the classification criteria are not met.

Toxicological information:

| Chemical name | Property | | Method | Test animal |
|---------------|------------------------------|-------------------|----------|-------------|
| Ethanol | Skin irritation | Non-irritant | ----- | Rabbit |
| | LD50 (dermal) | 15800 mg/kg bw | ----- | Rabbit |
| | NOAEL (inhalation) | 23000 mg/m3 | | Rat |
| | NOAEL (oral) | 2400 mg/kg bw/d | | Rat |
| | NOAEL (fertility, oral) | 20000 mg/kg bw/d | OECD 415 | Rat |
| | Skin sensitisation | Not sensitizing | OECD 406 | Guinea pig |
| | NOAEL (development, oral) | 6400 mg/kg bw/d | | |
| | LD50 (oral) | 10470 mg/kg bw | OECD 401 | Rat |
| | LC50 (inhalation) | > 99999 mg/m3 | OECD 403 | Rat |
| | Eye irritation | Irritant | OECD 405 | Rabbit |
| | NOEL (carcinogenicity, oral) | > 4400 mg/kg bw/d | | Mouse |

MATERIAL SAFETY DATA SHEET

According to Regulation (EU) No 453/2010

| | | | | | |
|------------------------------|--|---|-----------------------------------|------------------------|-------|
| Propan-2-ol | Genotoxicity - in vivo NOEL (carcinogenicity, inh.) | Not genotoxic 13 mg/m3 | OECD 478 | Mouse | |
| | Genotoxicity - in vitro Mutagenicity | Not genotoxic Negative | OECD 476 OECD 471 | Salmonella typhimurium | |
| | NOAEL (oral) | 870 mg/kg bw/d | ----- | Rat | |
| | LD50 (oral) | 4396 mg/kg bw | ----- | Rat | |
| | LD50 (dermal) | 12800 mg/kg bw | ----- | Rat | |
| | LC50 (inhalation) | 46600 mg/m3 | ----- | Rat | |
| | Skin irritation | Slightly irritant | OECD 404 | Rabbit | |
| | Eye irritation | Irritant | OECD 405 | Rabbit | |
| | NOAEL (fertility, oral) | 407 mg/kg bw/d | | Rat | |
| | NOAEL (development, oral) | 400 mg/kg bw/d | | Rat | |
| | NOEL (carcinogenicity, oral) | Not carcinogenic | OECD 416 | Rat | |
| | Skin sensitisation | Not sensitizing | OECD 406 | Guinea pig | |
| | Mutagenicity | Negative | OECD 471 | | |
| | NOAEL (inhalation) | 12500 mg/m3 | OECD 451 | Rat | |
| | Genotoxicity - in vivo NOEL (carcinogenicity, inh.) | Not genotoxic 12500 mg/m3 | OECD 474 | Mouse Mouse | |
| | d-Limonene | Genotoxicity - in vitro NOEL (carcinogenicity) - estimate | Not genotoxic Not carcinogenic | OECD 476 ----- | ----- |
| | | NOEL (carcinogenicity, oral) | > 75 mg/kg bw/d | OECD 451 | Rat |
| LC50 (inhalation) - estimate | | > 5000 mg/m3 | ----- | ----- | |
| Genotoxicity - in vivo | | > 2000 mg/kg bw/d | | Rat | |
| Eye irritation | | Non-irritant | OECD 405 | Rabbit | |
| Mutagenicity | | Negative | OECD 471 | | |
| Skin sensitisation | | 10075 ug/cm2 | OECD 429 | Mouse | |
| NOAEL (development, oral) | | 600 mg/kg bw/d | | Rat | |
| Skin irritation | | Irritant | ----- | ----- | |
| NOAEL (oral) | | 30 mg/kg bw/d | | Rat | |
| NOEL (oral) | | 5 mg/kg bw/d | ----- | Rat | |
| LD50 (dermal) | | > 2000 mg/kg bw | ----- | Rabbit | |
| LD50 (oral) | | 4400 mg/kg bw | ----- | Rat | |
| Hexyl salicylate | Genotoxicity - in vitro NOAEL (fertility) - estimate | Not genotoxic Not reprotoxic | Read across | | |
| | NOAEL (development) - estimate | Not teratogenic | Read across | | |
| | Genotoxicity - in vivo | Not genotoxic | ----- | Mouse | |
| | Genotoxicity - in vitro | Not genotoxic | OECD 476 | Chinese Hamster | |
| | Mutagenicity | Negative | OECD 471 | Salmonella typhimurium | |
| | NOAEL (oral) - estimate | 50 mg/kg bw/d | Read across | | |
| | LD50 (oral) | > 5000 mg/kg bw | ----- | Rat | |
| | Eye irritation | Non-irritant | | Rabbit | |
| | LD50 (dermal) | > 5000 mg/kg bw | | Rabbit | |
| | Skin irritation | Irritant | | Rabbit | |
| | alpha-Hexylcinnamaldehyde | Genotoxicity - in vivo | Not genotoxic | OECD 474 | |
| Genotoxicity - in vitro | | Not genotoxic | OECD 476 | | |
| NOAEL (oral) - estimate | | 30 mg/kg bw/d | Read across | Rat | |
| LD50 (dermal) | | > 3000 mg/kg bw | OECD 402 | Rabbit | |
| LC50 (inhalation) | | > 5000 mg/m3 | OECD 403 | Rat | |

MATERIAL SAFETY DATA SHEET

According to Regulation (EU) No 453/2010

| | | | | |
|--|---------------------------|---------------------|------------|------------------------|
| | LD50 (oral) | > 2450 mg/kg bw | OECD 401 | Rat |
| | Mutagenicity | Negative | OECD 471 | Salmonella typhimurium |
| | Skin sensitisation | 2372 ug/cm2 | OECD 429 | Mouse |
| | Skin irritation | Moderately irritant | OECD 404 | Rabbit |
| | NOAEL (development, oral) | 100 mg/kg bw/d | OECD 421 | Rat |
| | Eye irritation | Non-irritant | | Rabbit |
| | NOAEL (dermal) | 25 mg/kg bw/d | | Rat |
| 2-(4-tert-butylbenzyl)propionaldehyde | Mutagenicity | Negative | OECD 471 | ----- |
| | Skin sensitisation | 2372 ug/cm2 | OECD 429 | Mouse |
| | LD50 (oral) | 1390 mg/kg bw | ----- | Rat |
| | LD50 (dermal) | > 5000 mg/kg bw | ----- | Rabbit |
| | Skin irritation | Irritant | OECD 404 | Rabbit |
| | Eye irritation | Non-irritant | ----- | Rabbit |
| | NOAEL (oral) | 25 mg/kg bw/d | ----- | Rat |
| | Genotoxicity - in vivo | Negative | OECD 474 | Mouse |
| | NOAEL (fertility, oral) | 25 mg/kg bw/d | | Rat |
| | NOAEL (development, oral) | 4 mg/kg bw/d | OECD 414 | Rat |
| Pin-2(10)-ene | Skin irritation | Irritant | ----- | ----- |
| 4-(4-Hydroxy-4-methylpentyl)cyclohex-3-enecarbaldehyde | Skin sensitisation | 4275 ug/cm2 | OECD 429 | Mouse |
| | Eye irritation | Mildly irritant | ----- | Rabbit |
| | LD50 (dermal) | > 5000 mg/kg bw | ----- | Rabbit |
| | LD50 (oral) | > 5000 mg/kg bw | ----- | Rat |
| | Skin irritation | Non-irritant | Patch test | Human |
| | Skin irritation | Irritant | ----- | Rabbit |

SECTION 12 ECOLOGICAL INFORMATION

12.1. Toxicity

No ecotoxicological research has been carried out on this product.

Ecotoxicity : Harmful to aquatic organisms. Calculated LC50 (fish): 152 mg/l. Calculated EC50 (waterflea): 92 mg/l.
Contains < 1 % of components with unknown hazards to the aquatic environment.

12.2. Persistence and degradability

Persistence – degradability : May cause long-term adverse effects in the aquatic environment.

12.3. Bioaccumulative potential

Bioaccumulative potential : Contains bioaccumulating substances.

12.4. Mobility in soil

Mobility : Not applicable.

12.5. Results of PBT and vPvB ass

PBT/vPvB assessment : Does not contain PBT or vPvB substances in concentrations higher than 0,1%.

12.6. Other adverse effects

Other information : Not applicable.

Ecological information:

| Chemical name | Property | | Method | Test animal |
|--------------------------------------|------------------|-----------|----------|-------------------|
| 1,4-Dioxacycloheptadecane-5,17-dione | LC50 (fish) | 2,13 mg/l | OECD 203 | Brachydanio rerio |
| | EC50 (waterflea) | 8,09 mg/l | ----- | Daphnia magna |

MATERIAL SAFETY DATA SHEET

According to Regulation (EU) No 453/2010

| | | | | |
|------------------|-------------------------------------|-------------|------------|-------------------------|
| d-Limonene | IC50 (alga) | 14,58 mg/l | ----- | Desmodesmus subspicatus |
| | Ultimate aerobic biodegradation (%) | > 60 % | OECD 301 B | |
| | NOEC (alga) | 3,48 mg/l | ----- | Desmodesmus subspicatus |
| | Log P(ow) | 4,3 | | |
| | BCF | 319,3 | | |
| | LC50 (fish) | 0,720 mg/l | OECD 203 | Pimephales promelas |
| | EC50 (waterflea) | 0,36 mg/l | OECD 202 | Daphnia magna |
| | Ultimate aerobic biodegradation (%) | > 92 % | | |
| | NOEC (waterflea) - chronic | 0,15 mg/l.d | | Daphnia magna |
| | Log P(ow) | 4,38 | | |
| BCF | 683 | | | |
| Hexyl salicylate | EC50 (waterflea) | 0,357 mg/l | OECD 202 | Daphnia magna |
| | IC50 (alga) | 0,28 mg/l | OECD 201 | Desmodesmus subspicatus |
| | Ultimate aerobic biodegradation (%) | 91 % | OECD 301 F | |
| | LC50 (fish) - estimate | 1,34 mg/l | ----- | Brachydanio rerio |
| | Log P(ow) | 5,5000 | | |

SECTION 13 DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

- Product residues : Recyclable metal container. Do not puncture or burn even after use. Do not dispose empty pack with waste produced by households. Containers may be recycled. Treat product residues and non-empty pack as hazardous waste.
- Additional warning : Residues may cause an explosion hazard. Do not puncture, cut or weld uncleaned drums.
- European waste catalogue : Dispose hazardous waste in accordance with Directive 91/689/EEC under acknowledgement of a waste code according to Commission Decision 2000/532/EC to an official chemical waste depot.
- Local legislation : Disposal should be in accordance with applicable regional, national, and local laws and regulations. Local regulations may be more stringent than regional or national requirements and must be complied with.

SECTION 14 TRANSPORT INFORMATION

14.1. UN number

UN nr. : UN 1950

14.2. UN proper shipping name

Transport name : AEROSOLS

14.3/14.4/14.5. Transport hazard class(es)/Packing group/Environmental hazards

ADR/RID/ADN (road/railway/inland waterways)

Class : 2
Classification code : 5F
Packaging group : -
Danger label : 2,1



MATERIAL SAFETY DATA SHEET

According to Regulation (EU) No 453/2010

Other information : Not intended for carriage by inland waterways in tank-vessels.

IMDG (sea)

Class : 2
Packaging group : -
EmS (fire / spill) : F - D / S - U
Marine pollutant : No

IATA (air)

Class : 2

14.6. Special precautions for user

Other information : Country specific variations may apply. It is possible that a "Limited Quantity" exemption applies to the transport of this product.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Marpol : Not intended to be carried in bulk according to International Maritime Organisation (IMO) instruments. Packaged liquids are not considered bulk.

SECTION 15 REGULATORY INFORMATION

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

Community regulations : Regulation (EC) No 453/2010 (REACH), Regulation (EC) No 1272/2008 (CLP), 75/324/EEC (aerosols) and other regulations.
: In the UK it is recommended that all aerosols should be labelled on the back with the warning about the dangers of volatile solvent abuse. The label should contain the badge 'Solvent Abuse Can Kill Instantly' accompanied by the phrase 'Use only as directed'.

15.2. Chemical safety assessment

Chemical safety assessment : Not applicable.

SECTION 16 OTHER INFORMATION

16.1. Other information

The information in this safety data sheet is compiled in compliance with Regulation (EC) No 453/2010 dated 20 May 2010 and accurate to the best of our knowledge and experience at the date of issue specified. It is the user's obligation to use this product safely and to comply with all applicable laws and regulations concerning the use of the product. This safety data sheet complements the technical information sheets but does not replace them and offers no warranty with regard to product properties.

Users are also forewarned for any hazards involved when the product is used for other purposes than those for which it is designed.

Changed or new information with regard to the previous release is indicated with an asterisk (*).

Full text of R-phrases mentioned in section 3:

| | |
|--------|--|
| R10 | Flammable. |
| R11 | Highly flammable. |
| R12 | Extremely flammable. |
| R22 | Harmful if swallowed. |
| R36 | Irritating to eyes. |
| R38 | Irritating to skin. |
| R43 | May cause sensitisation by skin contact. |
| R50/53 | Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. |
| R51/53 | Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. |
| R52/53 | Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. |
| R62 | Possible risk of impaired fertility. |

MATERIAL SAFETY DATA SHEET

According to Regulation (EU) No 453/2010

R65 Harmful: may cause lung damage if swallowed.
R67 Vapours may cause drowsiness and dizziness.

Full text of H-phrases mentioned in section 3:

H220 Extremely flammable gas.
H225 Highly flammable liquid and vapour.
H226 Flammable liquid and vapour.
H280 Contains gas under pressure; may explode if heated.
H302 Harmful if swallowed.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.
H361 Suspected of damaging fertility or the unborn child.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
H411 Toxic to aquatic life with long lasting effects.
H412 Harmful to aquatic life with long lasting effects.

Full text of hazard classes mentioned in section 3:

Flam. Gas 1 : Flammable gas, category 1.
Press. Gas : Compressed gas.
Flam. Liq. 2 : Flammable liquid, category 2.
Flam. Liq. 3 : Flammable liquid, hazard category 3.
Acute Tox. 4 : Acute toxicity, category 4.
Skin Irrit. 2 : Skin irritation, category 2.
Eye Irrit. 2 : Eye irritation, category 2.
Skin Sens. 1 : Skin sensitization, category 1.
Repr. 2 : Reproductive toxicity, category 2.
STOT SE 3 : Specific target organ toxicity after single exposure, category 3.
Asp. Tox. 1 : Aspiration hazard, category 1.
Aquatic Chronic 1 : Hazardous to the aquatic environment — Chronic category 1.
Aquatic Chronic 2 : Hazardous to the aquatic environment — Chronic category 2.
Aquatic Chronic 3 : Hazardous to the aquatic environment — Chronic category 3.
Aquatic Acute 1 : Hazardous to the aquatic environment — Acute category 1.

List of abbreviations and acronyms that could be (but not necessarily are) used in this safety data sheet:

ADR : European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE : Acute Toxicity Estimate
CLP : Classification, Labeling & Packaging
CMR : Carcinogenic, Mutagenic or toxic for Reproduction
EEC : European Economic Community
IATA : International Air Transport Association
IBC code : International Bulk Chemical Code
IMDG : International Maritime Dangerous Goods Code
LD50/LC50 : Lethal Dose/Concentration for 50% of a population
MAC : Maximum Allowable Concentration
MARPOL : International Convention for the Prevention of Pollution From Ships
NO(A)EL : No Observed (Adverse) Effect Level
OECD : Organisation for Economic Co-operation and Development
PBT : Persistent, Bioaccumulative and Toxic
PC : Chemical product category
PT : Product type
REACH : Registration, Evaluation, Authorisation and Restriction of Chemicals
RID : Regulations concerning the International Carriage of Dangerous Goods by Rail
STP : Sewage Treatment Plant
SU : Sector of Use
TWA/STEL : Time-Weighted Average/Short Term Exposure Limit

MATERIAL SAFETY DATA SHEET

According to Regulation (EU) No 453/2010

UN : United Nations
VOC : Volatile Organic Compounds
vPvB : Very Persistent and Very Bioaccumulative
Number format : "," used as decimal separator.

History

Date of first issue : 09-04-2015