# SAFETY DATA SHEET

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

### 1.1. Product identifier

| | |
|---|---|
| **Trade name or designation of the mixture** | HumiSeal 1B31 Aerosol |
| **Registration number** | - |
| **Synonyms** | None. |
| **Product code** | HumiSeal Europe 1B31 Aerosol |
| **Issue date** | 21-June-2015 |
| **Version number** | 02 |
| **Revision date** | 13-December-2017 |
| **Supersedes date** | 21-June-2015 |

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

| | |
|---|---|
| **Identified uses** | Protective Coating for Printed Circuit Board |
| **Uses advised against** | None known. |

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

**Supplier**

| | | |
|---|---|---|
| **Company name** | HUMISEAL EUROPE LTD. | |
| **Address** | 505 Eskdale Road<br>Winnersh<br>Wokingham Berkshire RG41 5TU<br>UK | |
| **Division** | A CHASE CORPORATION COMPANY | |
| **Telephone** | General Assistance | 44 (0) 118 944 2333 |
| **e-mail** | europetechsupport@chasecorp.com | |
| **Contact person** | Not available. | |

### 1.4. Emergency telephone number

| | |
|---|---|
| Chemtrec USA | 1-800-424-9300 |
| OutSide USA | +1 703-741-5970 |

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

**Classification according to Regulation (EC) No 1272/2008 as amended**

**Physical hazards**

| | | |
|---|---|---|
| Aerosols | Category 1 | H222 - Extremely flammable aerosol.<br>H229 - Pressurized container: May burst if heated. |

**Health hazards**

| | | |
|---|---|---|
| Skin corrosion/irritation | Category 2 | H315 - Causes skin irritation. |
| Serious eye damage/eye irritation | Category 2 | H319 - Causes serious eye irritation. |
| Reproductive toxicity (the unborn child) | Category 2 | H361d - Suspected of damaging the unborn child. |

| | | |
|---|---|---|
| Specific target organ toxicity - single exposure | Category 3 narcotic effects | H336 - May cause drowsiness or dizziness. |
| Specific target organ toxicity - repeated exposure | Category 2 | H373 - May cause damage to organs through prolonged or repeated exposure. |
| Aspiration hazard | Category 1 | H304 - May be fatal if swallowed and enters airways. |

**Environmental hazards**

| | | |
|---|---|---|
| Hazardous to the aquatic environment, long-term aquatic hazard | Category 2 | H411 - Toxic to aquatic life with long lasting effects. |

**Hazard summary**

Aerosol CONTENTS UNDER PRESSURE.
Pressurised container may explode when exposed to heat or flame. May be fatal if swallowed and enters airways. May cause damage to organs through prolonged or repeated exposure. May cause drowsiness and dizziness. Causes serious eye irritation. Causes skin irritation. Possible reproductive hazard. Dangerous for the environment if discharged into watercourses. Occupational exposure to the substance or mixture may cause adverse health effects.

## 2.2. Label elements

**Label according to Regulation (EC) No. 1272/2008 as amended**

**Contains:** ACETONE, Methyl ethyl ketone, Toluene

**Hazard pictograms**

**Signal word** Danger

**Hazard statements**

| | |
|---|---|
| H222 | Extremely flammable aerosol. |
| H229 | Pressurized container: May burst if heated. |
| H304 | May be fatal if swallowed and enters airways. |
| H315 | Causes skin irritation. |
| H319 | Causes serious eye irritation. |
| H336 | May cause drowsiness or dizziness. |
| H361d | Suspected of damaging the unborn child. |
| H373 | May cause damage to organs through prolonged or repeated exposure. |
| H411 | Toxic to aquatic life with long lasting effects. |

**Precautionary statements**

**Prevention**

| | |
|---|---|
| P201 | Obtain special instructions before use. |
| P202 | Do not handle until all safety precautions have been read and understood. |
| 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. |
| P251 | Do not pierce or burn, even after use. |
| P260 | Do not breathe mist or vapour. |
| P264 | Wash thoroughly after handling. |
| P271 | Use only outdoors or in a well-ventilated area. |
| P273 | Avoid release to the environment. |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |

**Response**

| | |
|---|---|
| P301 + P310 | IF SWALLOWED: Immediately call a POISON CENTRE/doctor. |
| P331 | Do NOT induce vomiting. |
| P302 + P352 | IF ON SKIN: Wash with plenty of water. |
| P304 + P340 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. |
| P305 + P351 + P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P308 + P313 | IF exposed or concerned: Get medical advice/attention. |
| P312 | Call a POISON CENTRE/doctor if you feel unwell. |
| P332 + P313 | If skin irritation occurs: Get medical advice/attention. |
| P337 + P313 | If eye irritation persists: Get medical advice/attention. |
| P362 + P364 | Take off contaminated clothing and wash it before reuse. |
| P391 | Collect spillage. |

**Storage**

| | |
|---|---|
| P403 + P233 | Store in a well-ventilated place. Keep container tightly closed. |
| P405 | Store locked up. |
| P410 + P412 | Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F. |

**Disposal**

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**Supplemental label information** 30,98 % of the mixture consists of component(s) of unknown acute oral toxicity. 30,98 % of the mixture consists of component(s) of unknown acute dermal toxicity. 59,96 % of the mixture consists of component(s) of unknown acute inhalation toxicity. 99,96 % of the mixture consists of component(s) of unknown acute hazards to the aquatic environment. 50,98 % of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment.

**2.3. Other hazards** Not a PBT or vPvB substance or mixture.

## SECTION 3: Composition/information on ingredients

**3.2. Mixtures**

**General information**

| Chemical name | % | CAS-No. / EC No. | REACH Registration No. | INDEX No. | Notes |
|---|---|---|---|---|---|
| Toluene | 40 - < 50 | 108-88-3<br>203-625-9 | 01-2119471310-51-XXXX | 601-021-00-3 | # |
| **Classification:** | Flam. Liq. 2;H225, Asp. Tox. 1;H304, Skin Irrit. 2;H315, STOT SE 3;H336, Repr. 2;H361d, STOT RE 2;H373, Aquatic Chronic 2;H411 | | | | |
| ACETONE | 10 - < 20 | 67-64-1<br>200-662-2 | 01-2119471330-49-XXXX | 606-001-00-8 | # |
| **Classification:** | Flam. Liq. 2;H225, Eye Irrit. 2;H319, STOT SE 3;H336 | | | | |
| Methyl ethyl ketone | 5 - < 10 | 78-93-3<br>201-159-0 | 01-2119457290-43-XXXX | 606-002-00-3 | # |
| **Classification:** | Flam. Liq. 2;H225, Eye Irrit. 2;H319, STOT SE 3;H336 | | | | |
| Other components below reportable levels | 30 - < 40 | | | | |

**List of abbreviations and symbols that may be used above**

#: This substance has been assigned Union workplace exposure limit(s).
M: M-factor
PBT: persistent, bioaccumulative and toxic substance.
vPvB: very persistent and very bioaccumulative substance.
All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

**Composition comments** The full text for all H-statements is displayed in section 16.

## SECTION 4: First aid measures

**General information** IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

**4.1. Description of first aid measures**

**Inhalation** Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTRE or doctor/physician if you feel unwell.

**Skin contact** Remove contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

**Eye contact** Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

**Ingestion** Call a physician or poison control centre immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

**4.2. Most important symptoms and effects, both acute and delayed** Aspiration may cause pulmonary oedema and pneumonitis. May cause drowsiness and dizziness. Headache. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain. Prolonged exposure may cause chronic effects.

**4.3. Indication of any immediate medical attention and special treatment needed** Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

## SECTION 5: Firefighting measures

**General fire hazards** Extremely flammable aerosol.

**5.1. Extinguishing media**

**Suitable extinguishing media** Alcohol resistant foam. Powder. Carbon dioxide (CO2).

**Unsuitable extinguishing media** Do not use water jet as an extinguisher, as this will spread the fire.

**5.2. Special hazards arising from the substance or mixture**

Contents under pressure. Pressurised container may explode when exposed to heat or flame. During fire, gases hazardous to health may be formed.

**5.3. Advice for firefighters**

**Special protective equipment for firefighters**

Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

**Special fire fighting procedures**

Move containers from fire area if you can do so without risk. Containers should be cooled with water to prevent vapor pressure build up. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out.

**Specific methods**

Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. In the event of fire and/or explosion do not breathe fumes.

## SECTION 6: Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**

**For non-emergency personnel**

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapour. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

**For emergency responders**

Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the SDS.

**6.2. Environmental precautions**

Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

**6.3. Methods and material for containment and cleaning up**

Refer to attached safety data sheets and/or instructions for use. Stop leak if you can do so without risk. Move the cylinder to a safe and open area if the leak is irreparable. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil etc) away from spilled material. This product is miscible in water. Prevent product from entering drains. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

**6.4. Reference to other sections**

For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.

## SECTION 7: Handling and storage

**7.1. Precautions for safe handling**

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Pressurised container: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. Do not spray on a naked flame or any other incandescent material Do not smoke while using or until sprayed surface is thoroughly dry. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. All equipment used when handling the product must be grounded. Do not re-use empty containers. Do not breathe mist or vapour. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Use only in well-ventilated areas. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices.

**7.2. Conditions for safe storage, including any incompatibilities**

Level 3 Aerosol.

Store locked up. Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50°C. Do not puncture, incinerate or crush. Do not handle or store near an open flame, heat or other sources of ignition. This material can accumulate static charge which may cause spark and become an ignition source. Store away from incompatible materials (see Section 10 of the SDS).

**7.3. Specific end use(s)**

Not available.

## SECTION 8: Exposure controls/personal protection

**8.1. Control parameters**

**Occupational exposure limits**

**Austria. MAK List, OEL Ordinance (GwV), BGBl. II, no. 184/2001**

| Components | Type | Value |
|---|---|---|
| ACETONE (CAS 67-64-1) | MAK | 1200 mg/m3<br>500 ppm |
| | STEL | 4800 mg/m3<br>2000 ppm |
| Butane (CAS 106-97-8) | Ceiling | 3800 mg/m3<br>1600 ppm |

**Austria. MAK List, OEL Ordinance (GwV), BGBl. II, no. 184/2001**

| Components | Type | Value |
|---|---|---|
| | MAK | 1900 mg/m3<br>800 ppm |
| 2-Butanone (Methyl ethyl ketone) (CAS 78-93-3) | MAK | 295 mg/m3<br>100 ppm |
| | STEL | 590 mg/m3<br>200 ppm |
| PROPANE (CAS 74-98-6) | Ceiling | 3600 mg/m3<br>2000 ppm |
| | MAK | 1800 mg/m3<br>1000 ppm |
| Toluene (CAS 108-88-3) | MAK | 190 mg/m3<br>50 ppm |
| | STEL | 380 mg/m3<br>100 ppm |

**Belgium. Exposure Limit Values**

| Components | Type | Value |
|---|---|---|
| Butane (CAS 106-97-8) | TWA | 1000 ppm |
| PROPANE (CAS 74-98-6) | TWA | 1000 ppm |

**Belgium. Exposure Limit Values.**

| Components | Type | Value |
|---|---|---|
| ACETONE (CAS 67-64-1) | STEL | 2420 mg/m3<br>1000 ppm |
| | TWA | 1210 mg/m3<br>500 ppm |
| 2-Butanone (Methyl ethyl ketone) (CAS 78-93-3) | STEL | 900 mg/m3<br>300 ppm |
| | TWA | 600 mg/m3<br>200 ppm |
| Toluene (CAS 108-88-3) | STEL | 384 mg/m3<br>100 ppm |
| | TWA | 77 mg/m3<br>20 ppm |

**Bulgaria. OELs. Regulation No 13 on protection of workers against risks of exposure to chemical agents at work**

| Components | Type | Value |
|---|---|---|
| ACETONE (CAS 67-64-1) | STEL | 1400 mg/m3 |
| | TWA | 600 mg/m3 |
| Butane (CAS 106-97-8) | TWA | 1800 mg/m3 |
| 2-Butanone (Methyl ethyl ketone) (CAS 78-93-3) | STEL | 885 mg/m3 |
| | TWA | 590 mg/m3 |
| PROPANE (CAS 74-98-6) | TWA | 1800 mg/m3 |
| Toluene (CAS 108-88-3) | STEL | 384 mg/m3<br>100 ppm |
| | TWA | 192 mg/m3<br>50 ppm |

**Croatia. Dangerous Substance Exposure Limit Values in the Workplace (ELVs), Annexes 1 and 2, Narodne Novine, 13/09**

| Components | Type | Value |
|---|---|---|
| ACETONE (CAS 67-64-1) | MAC | 1210 mg/m3<br>500 ppm |
| | STEL | 3620 mg/m3<br>1500 ppm |
| Butane (CAS 106-97-8) | MAC | 1450 mg/m3<br>10 ppm |
| | STEL | 1810 mg/m3<br>750 ppm |
| 2-Butanone (Methyl ethyl ketone) (CAS 78-93-3) | MAC | 600 mg/m3 |

**Croatia. Dangerous Substance Exposure Limit Values in the Workplace (ELVs), Annexes 1 and 2, Narodne Novine, 13/09**

| Components | Type | Value |
|---|---|---|
| | | 200 ppm |
| | STEL | 900 mg/m3 |
| | | 300 ppm |
| Toluene (CAS 108-88-3) | MAC | 192 mg/m3 |
| | | 50 ppm |
| | STEL | 384 mg/m3 |
| | | 100 ppm |

**Czech Republic. OELs. Government Decree 361**

| Components | Type | Value |
|---|---|---|
| ACETONE (CAS 67-64-1) | Ceiling | 1500 mg/m3 |
| | TWA | 800 mg/m3 |
| 2-Butanone (Methyl ethyl ketone) (CAS 78-93-3) | Ceiling | 900 mg/m3 |
| | TWA | 600 mg/m3 |
| Toluene (CAS 108-88-3) | Ceiling | 500 mg/m3 |
| | TWA | 200 mg/m3 |

**Denmark. Exposure Limit Values**

| Components | Type | Value |
|---|---|---|
| ACETONE (CAS 67-64-1) | TLV | 600 mg/m3 |
| | | 250 ppm |
| Butane (CAS 106-97-8) | TLV | 1200 mg/m3 |
| | | 500 ppm |
| 2-Butanone (Methyl ethyl ketone) (CAS 78-93-3) | TLV | 145 mg/m3 |
| | | 50 ppm |
| PROPANE (CAS 74-98-6) | TLV | 1800 mg/m3 |
| | | 1000 ppm |
| Toluene (CAS 108-88-3) | TLV | 94 mg/m3 |
| | | 25 ppm |

**Estonia. OELs. Occupational Exposure Limits of Hazardous Substances. (Annex of Regulation No. 293 of 18 September 2001)**

| Components | Type | Value |
|---|---|---|
| ACETONE (CAS 67-64-1) | TWA | 1210 mg/m3 |
| | | 500 ppm |
| Butane (CAS 106-97-8) | TWA | 1500 mg/m3 |
| | | 800 ppm |
| 2-Butanone (Methyl ethyl ketone) (CAS 78-93-3) | STEL | 900 mg/m3 |
| | | 300 ppm |
| | TWA | 600 mg/m3 |
| | | 200 ppm |
| PROPANE (CAS 74-98-6) | TWA | 1800 mg/m3 |
| | | 1000 ppm |
| Toluene (CAS 108-88-3) | STEL | 384 mg/m3 |
| | | 100 ppm |
| | TWA | 192 mg/m3 |
| | | 50 ppm |

**Finland. Workplace Exposure Limits**

| Components | Type | Value |
|---|---|---|
| ACETONE (CAS 67-64-1) | STEL | 1500 mg/m3 |
| | | 630 ppm |
| | TWA | 1200 mg/m3 |
| | | 500 ppm |
| Butane (CAS 106-97-8) | STEL | 2400 mg/m3 |
| | | 1000 ppm |
| | TWA | 1900 mg/m3 |
| | | 800 ppm |
| 2-Butanone (Methyl ethyl ketone) (CAS 78-93-3) | STEL | 300 mg/m3 |
| | | 100 ppm |

**Finland. Workplace Exposure Limits**

| Components | Type | Value |
|---|---|---|
| PROPANE (CAS 74-98-6) | STEL | 2000 mg/m3<br>1100 ppm |
| | TWA | 1500 mg/m3<br>800 ppm |
| Toluene (CAS 108-88-3) | STEL | 380 mg/m3<br>100 ppm |
| | TWA | 81 mg/m3<br>25 ppm |

**France. Threshold Limit Values (VLEP) for Occupational Exposure to Chemicals in France, INRS ED 984**

| Components | Type | Value |
|---|---|---|
| ACETONE (CAS 67-64-1) | VLE | 2420 mg/m3<br>1000 ppm |
| | VME | 1210 mg/m3<br>500 ppm |
| Butane (CAS 106-97-8) | VME | 1900 mg/m3<br>800 ppm |
| 2-Butanone (Methyl ethyl ketone) (CAS 78-93-3) | VLE | 900 mg/m3<br>300 ppm |
| | VME | 600 mg/m3<br>200 ppm |
| Toluene (CAS 108-88-3) | VLE | 384 mg/m3<br>100 ppm |
| | VME | 76,8 mg/m3<br>20 ppm |

**Germany. DFG MAK List (advisory OELs). Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (DFG)**

| Components | Type | Value |
|---|---|---|
| ACETONE (CAS 67-64-1) | TWA | 1200 mg/m3<br>500 ppm |
| Butane (CAS 106-97-8) | TWA | 2400 mg/m3<br>1000 ppm |
| 2-Butanone (Methyl ethyl ketone) (CAS 78-93-3) | TWA | 600 mg/m3<br>200 ppm |
| PROPANE (CAS 74-98-6) | TWA | 1800 mg/m3<br>1000 ppm |
| Toluene (CAS 108-88-3) | TWA | 190 mg/m3<br>50 ppm |

**Germany. TRGS 900, Limit Values in the Ambient Air at the Workplace**

| Components | Type | Value |
|---|---|---|
| ACETONE (CAS 67-64-1) | AGW | 1200 mg/m3<br>500 ppm |
| Butane (CAS 106-97-8) | AGW | 2400 mg/m3<br>1000 ppm |
| 2-Butanone (Methyl ethyl ketone) (CAS 78-93-3) | AGW | 600 mg/m3<br>200 ppm |
| PROPANE (CAS 74-98-6) | AGW | 1800 mg/m3<br>1000 ppm |
| Toluene (CAS 108-88-3) | AGW | 190 mg/m3<br>50 ppm |

**Greece. OELs (Decree No. 90/1999, as amended)**

| Components | Type | Value |
|---|---|---|
| ACETONE (CAS 67-64-1) | STEL | 3560 mg/m3 |
| | TWA | 1780 mg/m3 |
| Butane (CAS 106-97-8) | TWA | 2350 mg/m3<br>1000 ppm |
| 2-Butanone (Methyl ethyl ketone) (CAS 78-93-3) | STEL | 900 mg/m3 |

**Greece. OELs (Decree No. 90/1999, as amended)**

| Components | Type | Value |
|---|---|---|
| | | 300 ppm |
| | TWA | 600 mg/m3 |
| | | 200 ppm |
| PROPANE (CAS 74-98-6) | TWA | 1800 mg/m3 |
| | | 1000 ppm |
| Toluene (CAS 108-88-3) | STEL | 384 mg/m3 |
| | | 100 ppm |
| | TWA | 192 mg/m3 |
| | | 50 ppm |

**Hungary. OELs. Joint Decree on Chemical Safety of Workplaces**

| Components | Type | Value |
|---|---|---|
| ACETONE (CAS 67-64-1) | STEL | 2420 mg/m3 |
| | TWA | 1210 mg/m3 |
| Butane (CAS 106-97-8) | STEL | 9400 mg/m3 |
| | TWA | 2350 mg/m3 |
| 2-Butanone (Methyl ethyl ketone) (CAS 78-93-3) | STEL | 900 mg/m3 |
| | TWA | 600 mg/m3 |
| Toluene (CAS 108-88-3) | STEL | 380 mg/m3 |
| | TWA | 190 mg/m3 |

**Iceland. OELs. Regulation 154/1999 on occupational exposure limits**

| Components | Type | Value |
|---|---|---|
| ACETONE (CAS 67-64-1) | TWA | 600 mg/m3 |
| | | 250 ppm |
| Butane (CAS 106-97-8) | TWA | 1200 mg/m3 |
| | | 500 ppm |
| 2-Butanone (Methyl ethyl ketone) (CAS 78-93-3) | STEL | 900 mg/m3 |
| | | 300 ppm |
| | TWA | 145 mg/m3 |
| | | 50 ppm |
| PROPANE (CAS 74-98-6) | TWA | 1800 mg/m3 |
| | | 1000 ppm |
| Toluene (CAS 108-88-3) | STEL | 188 mg/m3 |
| | | 50 ppm |
| | TWA | 94 mg/m3 |
| | | 25 ppm |

**Ireland. Occupational Exposure Limits**

| Components | Type | Value |
|---|---|---|
| ACETONE (CAS 67-64-1) | TWA | 1210 mg/m3 |
| | | 500 ppm |
| Butane (CAS 106-97-8) | TWA | 1000 ppm |
| 2-Butanone (Methyl ethyl ketone) (CAS 78-93-3) | STEL | 900 mg/m3 |
| | | 300 ppm |
| | TWA | 600 mg/m3 |
| | | 200 ppm |
| PROPANE (CAS 74-98-6) | TWA | 1000 ppm |
| Toluene (CAS 108-88-3) | STEL | 384 mg/m3 |
| | | 100 ppm |
| | TWA | 192 mg/m3 |
| | | 50 ppm |

**Italy. Occupational Exposure Limits**

| Components | Type | Value |
|---|---|---|
| ACETONE (CAS 67-64-1) | TWA | 1210 mg/m3 |
| | | 500 ppm |
| Butane (CAS 106-97-8) | STEL | 1000 ppm |
| 2-Butanone (Methyl ethyl ketone) (CAS 78-93-3) | STEL | 900 mg/m3 |
| | | 300 ppm |

**Italy. Occupational Exposure Limits**

| Components | Type | Value |
|---|---|---|
| | TWA | 600 mg/m3 |
| | | 200 ppm |
| Toluene (CAS 108-88-3) | TWA | 192 mg/m3 |
| | | 50 ppm |

**Latvia. OELs. Occupational exposure limit values of chemical substances in work environment**

| Components | Type | Value |
|---|---|---|
| ACETONE (CAS 67-64-1) | TWA | 1210 mg/m3 |
| | | 500 ppm |
| Butane (CAS 106-97-8) | STEL | 300 mg/m3 |
| | TWA | 300 mg/m3 |
| 2-Butanone (Methyl ethyl ketone) (CAS 78-93-3) | STEL | 900 mg/m3 |
| | | 300 ppm |
| | TWA | 200 mg/m3 |
| | | 67 ppm |
| PROPANE (CAS 74-98-6) | STEL | 300 mg/m3 |
| | TWA | 100 mg/m3 |
| Toluene (CAS 108-88-3) | STEL | 150 mg/m3 |
| | | 40 ppm |
| | TWA | 50 mg/m3 |
| | | 14 ppm |

**Lithuania. OELs. Limit Values for Chemical Substances, General Requirements**

| Components | Type | Value |
|---|---|---|
| ACETONE (CAS 67-64-1) | STEL | 2420 mg/m3 |
| | | 1000 ppm |
| | TWA | 1210 mg/m3 |
| | | 500 ppm |
| 2-Butanone (Methyl ethyl ketone) (CAS 78-93-3) | STEL | 900 mg/m3 |
| | | 300 ppm |
| | TWA | 600 mg/m3 |
| | | 200 ppm |
| Toluene (CAS 108-88-3) | STEL | 384 mg/m3 |
| | | 100 ppm |
| | TWA | 192 mg/m3 |
| | | 50 ppm |

**Luxembourg. Binding Occupational exposure limit values (Annex I), Memorial A**

| Components | Type | Value |
|---|---|---|
| ACETONE (CAS 67-64-1) | TWA | 1210 mg/m3 |
| | | 500 ppm |
| 2-Butanone (Methyl ethyl ketone) (CAS 78-93-3) | STEL | 900 mg/m3 |
| | | 300 ppm |
| | TWA | 600 mg/m3 |
| | | 200 ppm |
| Toluene (CAS 108-88-3) | STEL | 384 mg/m3 |
| | | 100 ppm |
| | TWA | 192 mg/m3 |
| | | 50 ppm |

**Malta. OELs. Occupational Exposure Limit Values (L.N. 227. of Occupational Health and Safety Authority Act (CAP. 424), Schedules I and V)**

| Components | Type | Value |
|---|---|---|
| ACETONE (CAS 67-64-1) | TWA | 1210 mg/m3 |
| | | 500 ppm |
| 2-Butanone (Methyl ethyl ketone) (CAS 78-93-3) | STEL | 900 mg/m3 |
| | | 300 ppm |
| | TWA | 600 mg/m3 |
| | | 200 ppm |
| Toluene (CAS 108-88-3) | STEL | 384 mg/m3 |

**Malta. OELs. Occupational Exposure Limit Values (L.N. 227. of Occupational Health and Safety Authority Act (CAP. 424), Schedules I and V)**

| Components | Type | Value |
|---|---|---|
| | | 100 ppm |
| | TWA | 192 mg/m3 |
| | | 50 ppm |

**Netherlands. OELs (binding)**

| Components | Type | Value |
|---|---|---|
| ACETONE (CAS 67-64-1) | STEL | 2420 mg/m3 |
| | TWA | 1210 mg/m3 |
| 2-Butanone (Methyl ethyl ketone) (CAS 78-93-3) | STEL | 900 mg/m3 |
| | TWA | 590 mg/m3 |
| Toluene (CAS 108-88-3) | STEL | 384 mg/m3 |
| | TWA | 150 mg/m3 |

**Norway. Administrative Norms for Contaminants in the Workplace**

| Components | Type | Value |
|---|---|---|
| ACETONE (CAS 67-64-1) | TLV | 295 mg/m3 |
| | | 125 ppm |
| Butane (CAS 106-97-8) | TLV | 600 mg/m3 |
| | | 250 ppm |
| 2-Butanone (Methyl ethyl ketone) (CAS 78-93-3) | TLV | 220 mg/m3 |
| | | 75 ppm |
| PROPANE (CAS 74-98-6) | TLV | 900 mg/m3 |
| | | 500 ppm |
| Toluene (CAS 108-88-3) | TLV | 94 mg/m3 |
| | | 25 ppm |

**Poland. MACs. Regulation regarding maximum permissible concentrations and intensities of harmful factors in the work environment, Annex 1**

| Components | Type | Value |
|---|---|---|
| ACETONE (CAS 67-64-1) | STEL | 1800 mg/m3 |
| | TWA | 600 mg/m3 |
| Butane (CAS 106-97-8) | STEL | 3000 mg/m3 |
| | TWA | 1900 mg/m3 |
| 2-Butanone (Methyl ethyl ketone) (CAS 78-93-3) | STEL | 900 mg/m3 |
| | TWA | 450 mg/m3 |
| PROPANE (CAS 74-98-6) | TWA | 1800 mg/m3 |
| Toluene (CAS 108-88-3) | STEL | 200 mg/m3 |
| | TWA | 100 mg/m3 |

**Portugal. OELs. Decree-Law n. 290/2001 (Journal of the Republic - 1 Series A, n.266)**

| Components | Type | Value |
|---|---|---|
| ACETONE (CAS 67-64-1) | TWA | 1210 mg/m3 |
| | | 500 ppm |
| 2-Butanone (Methyl ethyl ketone) (CAS 78-93-3) | STEL | 900 mg/m3 |
| | | 300 ppm |
| | TWA | 600 mg/m3 |
| | | 200 ppm |
| Toluene (CAS 108-88-3) | STEL | 384 mg/m3 |
| | | 100 ppm |
| | TWA | 192 mg/m3 |
| | | 50 ppm |

**Portugal. VLEs. Norm on occupational exposure to chemical agents (NP 1796)**

| Components | Type | Value |
|---|---|---|
| ACETONE (CAS 67-64-1) | STEL | 750 ppm |
| | TWA | 500 ppm |
| Butane (CAS 106-97-8) | TWA | 1000 ppm |
| 2-Butanone (Methyl ethyl ketone) (CAS 78-93-3) | STEL | 300 ppm |
| | TWA | 200 ppm |

**Portugal. VLEs. Norm on occupational exposure to chemical agents (NP 1796)**

| Components | Type | Value |
|---|---|---|
| PROPANE (CAS 74-98-6) | TWA | 2500 ppm |
| Toluene (CAS 108-88-3) | TWA | 50 ppm |

**Romania. OELs. Protection of workers from exposure to chemical agents at the workplace**

| Components | Type | Value |
|---|---|---|
| ACETONE (CAS 67-64-1) | TWA | 1210 mg/m3 |
| | | 500 ppm |
| Butane (CAS 106-97-8) | STEL | 1500 mg/m3 |
| | TWA | 1200 mg/m3 |
| 2-Butanone (Methyl ethyl ketone) (CAS 78-93-3) | STEL | 900 mg/m3 |
| | | 300 ppm |
| | TWA | 600 mg/m3 |
| | | 200 ppm |
| PROPANE (CAS 74-98-6) | STEL | 1800 mg/m3 |
| | | 1000 ppm |
| | TWA | 1400 mg/m3 |
| | | 778 ppm |
| Toluene (CAS 108-88-3) | STEL | 384 mg/m3 |
| | | 100 ppm |
| | TWA | 192 mg/m3 |
| | | 50 ppm |

**Slovakia. OELs for carcinogens and mutagens. Regulation No. 46/2002 on carcinogenic and mutagenic substances**

| Components | Type | Value |
|---|---|---|
| Butane (CAS 106-97-8) | TWA | 2400 mg/m3 |
| | | 1000 ppm |

**Slovakia. OELs. Regulation No. 300/2007 concerning protection of health in work with chemical agents**

| Components | Type | Value |
|---|---|---|
| ACETONE (CAS 67-64-1) | TWA | 1210 mg/m3 |
| | | 500 ppm |
| 2-Butanone (Methyl ethyl ketone) (CAS 78-93-3) | STEL | 900 mg/m3 |
| | | 300 ppm |
| | TWA | 600 mg/m3 |
| | | 200 ppm |
| Toluene (CAS 108-88-3) | STEL | 384 mg/m3 |
| | | 100 ppm |
| | TWA | 192 mg/m3 |
| | | 50 ppm |

**Slovenia. OELs. Regulations concerning protection of workers against risks due to exposure to chemicals while working (Official Gazette of the Republic of Slovenia)**

| Components | Type | Value |
|---|---|---|
| ACETONE (CAS 67-64-1) | TWA | 1210 mg/m3 |
| | | 500 ppm |
| Butane (CAS 106-97-8) | TWA | 2400 mg/m3 |
| | | 1000 ppm |
| 2-Butanone (Methyl ethyl ketone) (CAS 78-93-3) | TWA | 600 mg/m3 |
| | | 200 ppm |
| PROPANE (CAS 74-98-6) | TWA | 1800 mg/m3 |
| | | 1000 ppm |
| Toluene (CAS 108-88-3) | TWA | 192 mg/m3 |
| | | 50 ppm |

**Spain. Occupational Exposure Limits**

| Components | Type | Value |
|---|---|---|
| ACETONE (CAS 67-64-1) | TWA | 1210 mg/m3 |
| | | 500 ppm |
| Butane (CAS 106-97-8) | TWA | 1000 ppm |
| 2-Butanone (Methyl ethyl ketone) (CAS 78-93-3) | STEL | 900 mg/m3 |

**Spain. Occupational Exposure Limits**

| Components | Type | Value |
|---|---|---|
| | | 300 ppm |
| | TWA | 600 mg/m3 |
| | | 200 ppm |
| PROPANE (CAS 74-98-6) | TWA | 1000 ppm |
| Toluene (CAS 108-88-3) | STEL | 384 mg/m3 |
| | | 100 ppm |
| | TWA | 192 mg/m3 |
| | | 50 ppm |

**Sweden. OELs. Work Environment Authority (AV), Occupational Exposure Limit Values (AFS 2015:7)**

| Components | Type | Value |
|---|---|---|
| ACETONE (CAS 67-64-1) | STEL | 1200 mg/m3 |
| | | 500 ppm |
| | TWA | 600 mg/m3 |
| | | 250 ppm |
| 2-Butanone (Methyl ethyl ketone) (CAS 78-93-3) | Ceiling | 900 mg/m3 |
| | | 300 ppm |
| | TWA | 150 mg/m3 |
| | | 50 ppm |
| Toluene (CAS 108-88-3) | Ceiling | 384 mg/m3 |
| | | 100 ppm |
| | TWA | 192 mg/m3 |
| | | 50 ppm |

**Switzerland. SUVA Grenzwerte am Arbeitsplatz**

| Components | Type | Value |
|---|---|---|
| ACETONE (CAS 67-64-1) | STEL | 2400 mg/m3 |
| | | 1000 ppm |
| | TWA | 1200 mg/m3 |
| | | 500 ppm |
| Butane (CAS 106-97-8) | STEL | 7200 mg/m3 |
| | | 3200 ppm |
| | TWA | 1900 mg/m3 |
| | | 800 ppm |
| 2-Butanone (Methyl ethyl ketone) (CAS 78-93-3) | STEL | 590 mg/m3 |
| | | 200 ppm |
| | TWA | 590 mg/m3 |
| | | 200 ppm |
| PROPANE (CAS 74-98-6) | STEL | 7200 mg/m3 |
| | | 4000 ppm |
| | TWA | 1800 mg/m3 |
| | | 1000 ppm |
| Toluene (CAS 108-88-3) | STEL | 760 mg/m3 |
| | | 200 ppm |
| | TWA | 190 mg/m3 |
| | | 50 ppm |

**UK. EH40 Workplace Exposure Limits (WELs)**

| Components | Type | Value |
|---|---|---|
| ACETONE (CAS 67-64-1) | STEL | 3620 mg/m3 |
| | | 1500 ppm |
| | TWA | 1210 mg/m3 |
| | | 500 ppm |
| Butane (CAS 106-97-8) | STEL | 1810 mg/m3 |
| | | 750 ppm |
| | TWA | 1450 mg/m3 |
| | | 600 ppm |
| 2-Butanone (Methyl ethyl ketone) (CAS 78-93-3) | STEL | 899 mg/m3 |
| | | 300 ppm |
| | TWA | 600 mg/m3 |

**UK. EH40 Workplace Exposure Limits (WELs)**

| Components | Type | Value |
|---|---|---|
| | | 200 ppm |
| Toluene (CAS 108-88-3) | STEL | 384 mg/m3 |
| | | 100 ppm |
| | TWA | 191 mg/m3 |
| | | 50 ppm |

**EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU**

| Components | Type | Value |
|---|---|---|
| ACETONE (CAS 67-64-1) | TWA | 1210 mg/m3 |
| | | 500 ppm |
| 2-Butanone (Methyl ethyl ketone) (CAS 78-93-3) | STEL | 900 mg/m3 |
| | | 300 ppm |
| | TWA | 600 mg/m3 |
| | | 200 ppm |
| Toluene (CAS 108-88-3) | STEL | 384 mg/m3 |
| | | 100 ppm |
| | TWA | 192 mg/m3 |
| | | 50 ppm |

**Biological limit values**

**Croatia. BLV. Dangerous Substance Exposure Limit Values at Workplace, Annexes 4 (as amended)**

| Components | Value | Determinant | Specimen | Sampling time |
|---|---|---|---|---|
| ACETONE (CAS 67-64-1) | 20 mg/g | Acetone | Creatinine in urine | * |
| | 20 mg/l | Acetone | Blood | * |
| | 0,34 mmol/l | Acetone | Blood | * |
| | 38,95 mmol/mol | Acetone | Creatinine in urine | * |
| 2-Butanone (Methyl ethyl ketone) (CAS 78-93-3) | 2,6 mg/g | 2-Butanone (Methyl ethyl ketone) | Creatinine in urine | * |
| | 4,08 mmol/mol | 2-Butanone (Methyl ethyl ketone) | Creatinine in urine | * |
| Toluene (CAS 108-88-3) | 2,5 g/g | Hippuric acid | Creatinine in urine | * |
| | 1 mg/g | o-cresol (Phenol, 2-methyl-) | Creatinine in urine | * |
| | 1 mg/l | Toluene | Blood | * |
| | 1,05 mmol/mol | o-cresol (Phenol, 2-methyl-) | Creatinine in urine | * |
| | 1,58 mol/mol | Hippuric acid | Creatinine in urine | * |
| | 20 ppm | | End-exhaled air | * |
| | 10,85 umol/l | Toluene | Blood | * |
| | 0,83 umol/l | | End-exhaled air | * |

* - For sampling details, please see the source document.

**Czech Republic. Limit Values for Indictators of Biological Exposure Tests in Urine and Blood, Annex 2, Tables 1 and 2, Government Decree 432/2003 Sb.**

| Components | Value | Determinant | Specimen | Sampling time |
|---|---|---|---|---|
| Toluene (CAS 108-88-3) | 1000 µmol/mmol | Hippuric acid | Creatinine in urine | * |
| | 1600 mg/g | Hippuric acid | Creatinine in urine | * |

* - For sampling details, please see the source document.

**Finland. HTP-arvot, App 2., Biological Limit Values, (BRA/BGV) , Social Affairs and Ministry of Health**

| Components | Value | Determinant | Specimen | Sampling time |
|---|---|---|---|---|
| Toluene (CAS 108-88-3) | 500 nmol/l | Toluene concentration | Blood | * |

* - For sampling details, please see the source document.

**France. Biological indicators of exposure (IBE) (National Institute for Research and Security (INRS, ND 2065)**

| Components | Value | Determinant | Specimen | Sampling time |
|---|---|---|---|---|
| ACETONE (CAS 67-64-1) | 100 mg/l | Acétone | Urine | * |
| 2-Butanone (Methyl ethyl ketone) (CAS 78-93-3) | 2 mg/l | Méthyléthylcétone | Urine | * |
| Toluene (CAS 108-88-3) | 2500 mg/g | Acide hippurique | Creatinine in urine | * |
| | 2500 mg/g | Acide hippurique | Creatinine in urine | * |
| | 1 mg/l | Toluène | Venous blood | * |

* - For sampling details, please see the source document.

**Germany. TRGS 903, BAT List (Biological Limit Values)**

| Components | Value | Determinant | Specimen | Sampling time |
|---|---|---|---|---|
| ACETONE (CAS 67-64-1) | 80 mg/l | Aceton | Urine | * |
| 2-Butanone (Methyl ethyl ketone) (CAS 78-93-3) | 2 mg/l | 2-Butanon | Urine | * |
| Toluene (CAS 108-88-3) | 600 µg/l | Toluol | Blood | * |
| | 1,5 mg/l | o-Kresol (nach Hydrolyse) | Urine | * |

* - For sampling details, please see the source document.

**Hungary. Chemical Safety at Workplace Ordinance Joint Decree No. 25/2000 (Annex 2): Permissible limit values of biological exposure (effect) indices**

| Components | Value | Determinant | Specimen | Sampling time |
|---|---|---|---|---|
| Toluene (CAS 108-88-3) | 1 mg/g | o-crezol | Creatinine in urine | * |
| | 1,05 µmol/mmol | o-crezol | Creatinine in urine | * |

* - For sampling details, please see the source document.

**Slovakia. BLVs (Biological Limit Value). Regulation no. 355/2006 concerning protection of workers exposed to chemical agents, Annex 2**

| Components | Value | Determinant | Specimen | Sampling time |
|---|---|---|---|---|
| ACETONE (CAS 67-64-1) | 53,36 mg/g | Acetone | Creatinine in urine | * |
| | 80 mg/l | Acetone | Urine | * |
| Toluene (CAS 108-88-3) | 600 µg/l | Toluene | Blood | * |
| | 1600 mg/g | Hippuric acid | Creatinine in urine | * |
| | 1,03 mg/g | o-cresol (Phenol, 2-methyl-) | Creatinine in urine | * |
| | 2401 mg/l | Hippuric acid | Urine | * |
| | 1,5 mg/l | o-cresol (Phenol, 2-methyl-) | Urine | * |

* - For sampling details, please see the source document.

**Spain. Biological Limit Values (VLBs), Occupational Exposure Limits for Chemical Agents, Table 4**

| Components | Value | Determinant | Specimen | Sampling time |
|---|---|---|---|---|
| ACETONE (CAS 67-64-1) | 50 mg/l | Acetona | Urine | * |
| 2-Butanone (Methyl ethyl ketone) (CAS 78-93-3) | 2 mg/l | Metiletilcetona | Urine | * |
| Toluene (CAS 108-88-3) | 1,6 g/g | Ácido hipúrico | Creatinine in urine | * |
| | 0,5 mg/l | o-cresol (Phenol, 2-methyl-) | Urine | * |
| | 0,05 mg/l | Tolueno | Blood | * |

* - For sampling details, please see the source document.

**Switzerland. BAT-Werte (Biological Limit Values in the Workplace as per SUVA)**

| Components | Value | Determinant | Specimen | Sampling time |
|---|---|---|---|---|
| ACETONE (CAS 67-64-1) | 80 mg/l | Aceton | Urine | * |
| 2-Butanone (Methyl ethyl ketone) (CAS 78-93-3) | 2 mg/l | 2-Butanon (MEK) | Urine | * |
| Toluene (CAS 108-88-3) | 600 µg/l | Toluol | Blood | * |
| | 2 g/g | Hippursäure | Creatinine in urine | * |
| | 0,5 mg/l | o-Kresol | Urine | * |

* - For sampling details, please see the source document.

**UK. EH40 Biological Monitoring Guidance Values (BMGVs)**

| Components | Value | Determinant | Specimen | Sampling time |
|---|---|---|---|---|
| 2-Butanone (Methyl ethyl ketone) (CAS 78-93-3) | 70 umol/l | Butan-2-one | Urine | * |

* - For sampling details, please see the source document.

**Recommended monitoring procedures** Follow standard monitoring procedures.

**Derived no effect levels (DNELs)** Not available.

**Predicted no effect concentrations (PNECs)** Not available.

**Exposure guidelines**

**EU Exposure Limit Values: Skin designation**

Toluene (CAS 108-88-3) Can be absorbed through the skin.

**Slovenia. OELs. Regulations concerning protection of workers against risks due to exposure to chemicals while working (Official Gazette of the Republic of Slovenia)**

Toluene (CAS 108-88-3) Can be absorbed through the skin.

**8.2. Exposure controls**

**Appropriate engineering controls** Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station. Eye wash fountain and emergency showers are recommended.

**Individual protection measures, such as personal protective equipment**

**General information** Use personal protective equipment as required. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

**Eye/face protection** Chemical respirator with organic vapour cartridge and full facepiece.

**Skin protection**

**- Hand protection** Wear appropriate chemical resistant gloves.

**- Other** Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

**Respiratory protection** Chemical respirator with organic vapour cartridge and full facepiece.

**Thermal hazards** Wear appropriate thermal protective clothing, when necessary.

**Hygiene measures** Observe any medical surveillance requirements. When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

**Environmental exposure controls** Inform appropriate managerial or supervisory personnel of all environmental releases.

## SECTION 9: Physical and chemical properties

**9.1. Information on basic physical and chemical properties**

**Appearance**

**Physical state** Liquid.

**Form** Aerosol

**Colour** Clear.

**Odour** Aromatic

**Odour threshold** Not available.

**pH** Does not apply.

| | |
|---|---|
| **Melting point/freezing point** | -187,6 °C (-305,68 °F) estimated |
| **Initial boiling point and boiling range** | -42,1 °C (-43,78 °F) estimated |
| **Flash point** | < 1,0 °C (< 33,8 °F) estimated |
| **Evaporation rate** | 3,6 BuAc |
| **Flammability (solid, gas)** | Not applicable. |
| **Upper/lower flammability or explosive limits** | |
| **Flammability limit - lower (%)** | 1,3 % estimated |
| **Flammability limit - upper (%)** | 12,8 % estimated |
| **Vapour pressure** | 1704,05 hPa estimated |
| **Vapour density** | Not available. |
| **Relative density** | Not available. |
| **Solubility(ies)** | |
| **Solubility (water)** | Negligible |
| **Partition coefficient (n-octanol/water)** | Not available. |
| **Auto-ignition temperature** | 287,78 °C (550 °F) estimated |
| **Decomposition temperature** | Not available. |
| **Viscosity** | Not available. |
| **Explosive properties** | Not explosive. |
| **Oxidising properties** | Not oxidising. |
| **9.2. Other information** | |
| **Density** | 0,74 g/cm3 |
| **Heat of combustion (NFPA 30B)** | 30,51 kJ/g estimated |
| **Miscible (water)** | Negligible |
| **Percent volatile** | 68,98 % estimated |
| **Specific gravity** | 0,74 |
| **VOC** | 68,98 % estimated |

## SECTION 10: Stability and reactivity

| | |
|---|---|
| **10.1. Reactivity** | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| **10.2. Chemical stability** | Material is stable under normal conditions. |
| **10.3. Possibility of hazardous reactions** | No dangerous reaction known under conditions of normal use. |
| **10.4. Conditions to avoid** | Avoid temperatures exceeding the flash point. Contact with incompatible materials. |
| **10.5. Incompatible materials** | Acids. Strong oxidising agents. Nitrates. Ammonia. Amines. Isocyanates. Fluorine. Caustics. Chlorine. |
| **10.6. Hazardous decomposition products** | No hazardous decomposition products are known. |

## SECTION 11: Toxicological information

| | |
|---|---|
| **General information** | Occupational exposure to the substance or mixture may cause adverse effects. |
| **Information on likely routes of exposure** | |
| **Inhalation** | May cause damage to organs through prolonged or repeated exposure by inhalation. May cause drowsiness and dizziness. Headache. Nausea, vomiting. |
| **Skin contact** | Causes skin irritation. |
| **Eye contact** | Causes serious eye irritation. |
| **Ingestion** | Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia. |
| **Symptoms** | Aspiration may cause pulmonary oedema and pneumonitis. May cause drowsiness and dizziness. Headache. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain. |

**11.1. Information on toxicological effects**

| | |
|---|---|
| **Acute toxicity** | May be fatal if swallowed and enters airways. |

| | |
|---|---|
| **Skin corrosion/irritation** | Causes skin irritation. |
| **Serious eye damage/eye irritation** | Causes serious eye irritation. |
| **Respiratory sensitisation** | Due to partial or complete lack of data the classification is not possible. |
| **Skin sensitisation** | Due to partial or complete lack of data the classification is not possible. |
| **Germ cell mutagenicity** | Due to partial or complete lack of data the classification is not possible. |
| **Carcinogenicity** | Due to partial or complete lack of data the classification is not possible. |

**Hungary. 26/2000 EüM Ordinance on protection against and preventing risk relating to exposure to carcinogens at work (as amended)**

Not listed.

**IARC Monographs. Overall Evaluation of Carcinogenicity**

| | |
|---|---|
| Toluene (CAS 108-88-3) | 3 Not classifiable as to carcinogenicity to humans. |

| | |
|---|---|
| **Reproductive toxicity** | Suspected of damaging the unborn child. |
| **Specific target organ toxicity - single exposure** | May cause drowsiness and dizziness. |
| **Specific target organ toxicity - repeated exposure** | May cause damage to organs through prolonged or repeated exposure. |
| **Aspiration hazard** | May be fatal if swallowed and enters airways. |
| **Mixture versus substance information** | No information available. |
| **Other information** | Not available. |

## SECTION 12: Ecological information

**12.1. Toxicity** Toxic to aquatic life with long lasting effects. Based on available data, the classification criteria are not met for hazardous to the aquatic environment, acute hazard.

| Components | | Species | Test results |
|---|---|---|---|
| ACETONE (CAS 67-64-1) | | | |
| **Aquatic** | | | |
| Crustacea | EC50 | Water flea (Daphnia magna) | 10294 - 17704 mg/l, 48 hours |
| Fish | LC50 | Rainbow trout,donaldson trout (Oncorhynchus mykiss) | 4740 - 6330 mg/l, 96 hours |
| Methyl ethyl ketone (CAS 78-93-3) | | | |
| **Aquatic** | | | |
| Crustacea | EC50 | Water flea (Daphnia magna) | 4025 - 6440 mg/l, 48 hours |
| Fish | LC50 | Sheepshead minnow (Cyprinodon variegatus) | > 400 mg/l, 96 hours |
| Toluene (CAS 108-88-3) | | | |
| **Aquatic** | | | |
| Crustacea | EC50 | Water flea (Daphnia magna) | 5,46 - 9,83 mg/l, 48 hours |
| Fish | LC50 | Coho salmon,silver salmon (Oncorhynchus kisutch) | 8,11 mg/l, 96 hours |

* Estimates for product may be based on additional component data not shown.

**12.2. Persistence and degradability**

**12.3. Bioaccumulative potential**

**Partition coefficient n-octanol/water (log Kow)**

| | |
|---|---|
| ACETONE | -0,24 |
| Methyl ethyl ketone | 0,29 |
| Toluene | 2,73 |

| | |
|---|---|
| **Bioconcentration factor (BCF)** | Not available. |
| **12.4. Mobility in soil** | No data available. |
| **12.5. Results of PBT and vPvB assessment** | Not a PBT or vPvB substance or mixture. |
| **12.6. Other adverse effects** | The product contains volatile organic compounds which have a photochemical ozone creation potential. |

**12.7. Additional information**

**Estonia Dangerous substances in groundwater Data**

| | |
|---|---|
| Methyl ethyl ketone (CAS 78-93-3) | Pesticides (total) 0,5 UG/L<br>Pesticides (total) 5 UG/L |
| Toluene (CAS 108-88-3) | Toluene 0,5 UG/L<br>Toluene 50 UG/L |

**Estonia Dangerous substances in soil Data**

| | |
|---|---|
| Methyl ethyl ketone (CAS 78-93-3) | Synthetic pesticides (total of active substances) 0,5 mg/kg<br>Synthetic pesticides (total of active substances) 20 mg/kg<br>Synthetic pesticides (total of active substances) 5 mg/kg |
| Toluene (CAS 108-88-3) | Toluene 0,1 mg/kg<br>Toluene 100 mg/kg<br>Toluene 3 mg/kg |

## SECTION 13: Disposal considerations

**13.1. Waste treatment methods**

| | |
|---|---|
| **Residual waste** | Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions). |
| **Contaminated packaging** | Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers. |
| **EU waste code** | The Waste code should be assigned in discussion between the user, the producer and the waste disposal company. |
| **Disposal methods/information** | Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Contents under pressure. Do not puncture, incinerate or crush. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations. |
| **Special precautions** | Dispose in accordance with all applicable regulations. |

## SECTION 14: Transport information

**ADR**

| | |
|---|---|
| **14.1. UN number** | UN1950 |
| **14.2. UN proper shipping name** | AEROSOLS |
| **14.3. Transport hazard class(es)** | |
| **Class** | 2.1 |
| **Subsidiary risk** | - |
| **Label(s)** | 2.1 |
| **Hazard No. (ADR)** | 23 |
| **Tunnel restriction code** | B/D |
| **14.4. Packing group** | Not available. |
| **14.5. Environmental hazards** | No. |
| **14.6. Special precautions for user** | Read safety instructions, SDS and emergency procedures before handling. |

**RID**

| | |
|---|---|
| **14.1. UN number** | UN1950 |
| **14.2. UN proper shipping name** | AEROSOLS |
| **14.3. Transport hazard class(es)** | |
| **Class** | 2.1 |
| **Subsidiary risk** | - |
| **Label(s)** | 2.1 (+13) |
| **14.4. Packing group** | Not available. |
| **14.5. Environmental hazards** | No. |
| **14.6. Special precautions for user** | Read safety instructions, SDS and emergency procedures before handling. |

**ADN**

| | |
|---|---|
| **14.1. UN number** | UN1950 |
| **14.2. UN proper shipping name** | AEROSOLS |
| **14.3. Transport hazard class(es)** | |
| **Class** | 2.1 |
| **Subsidiary risk** | - |
| **Label(s)** | 2.1 |

**14.4. Packing group** Not available.
**14.5. Environmental hazards** No.
**14.6. Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

**IATA**

**14.1. UN number** UN1950
**14.2. UN proper shipping name** Aerosols, flammable
**14.3. Transport hazard class(es)**
**Class** 2.1
**Subsidiary risk** -
**Label(s)** 2
**14.4. Packing group** Not available.
**14.5. Environmental hazards** No.
**14.6. Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

**IMDG**

**14.1. UN number** UN1950
**14.2. UN proper shipping name** AEROSOLS
**14.3. Transport hazard class(es)**
**Class** 2.1
**Subsidiary risk** -
**14.4. Packing group** Not available.
**14.5. Environmental hazards**
**Marine pollutant** No.
**EmS** F-D, S-U
**14.6. Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

**14.7. Transport in bulk according to Annex II of Marpol and the IBC Code** Not established.

**ADN; ADR; IATA; IMDG; RID**


## SECTION 15: Regulatory information

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

**EU regulations**

**Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended**
Not listed.
**Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended**
Not listed.
**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended**
Not listed.
**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended**
Not listed.
**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended**
Not listed.
**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended**
Not listed.
**Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended**
Not listed.
**Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA**
Not listed.

**Authorisations**

**Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended**

Not listed.

**Restrictions on use**

**Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended**

ACETONE (CAS 67-64-1)
Methyl ethyl ketone (CAS 78-93-3)
Toluene (CAS 108-88-3)

**Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.**

Not listed.

**Other EU regulations**

**Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended**

ACETONE (CAS 67-64-1)
Methyl ethyl ketone (CAS 78-93-3)
Toluene (CAS 108-88-3)

| | |
|---|---|
| **Other regulations** | Pregnant women should not work with the product, if there is the least risk of exposure. The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006, as amended. Additional information is given in the Safety Data Sheet. |
| **National regulations** | Follow national regulation for work with chemical agents. Young people under 18 years old are not allowed to work with this product according to EU Directive 94/33/EC on the protection of young people at work, as amended. |
| **15.2. Chemical safety assessment** | No Chemical Safety Assessment has been carried out. |

## SECTION 16: Other information

| | |
|---|---|
| **List of abbreviations** | Not available. |
| **References** | Not available. |
| **Information on evaluation method leading to the classification of mixture** | The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available. |
| **Full text of any H-statements not written out in full under Sections 2 to 15** | H225 Highly flammable liquid and vapour.<br>H304 May be fatal if swallowed and enters airways.<br>H315 Causes skin irritation.<br>H319 Causes serious eye irritation.<br>H336 May cause drowsiness or dizziness.<br>H361d Suspected of damaging the unborn child.<br>H373 May cause damage to organs through prolonged or repeated exposure.<br>H411 Toxic to aquatic life with long lasting effects. |
| **Revision information** | This document has undergone significant changes and should be reviewed in its entirety. |
| **Training information** | Follow training instructions when handling this material. |
| **Disclaimer** | The information and recommendations in this safety data sheet are, to the best of our knowledge, accurate as of the date of issue. Nothing herein shall be deemed to create any warranty, expressed or implied. It is the responsibility of the user to determine the applicability of this information and the suitability of the material or product for any particular purpose |