

SAFETY DATA SHEET



VARIVA SOLVA 8776-00 SPRAY - All variants

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

1.1 Product identifier

Product name : VARIVA SOLVA 8776-00 SPRAY - All variants

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

Product use : Paint.

1.3 Details of the supplier of the safety data sheet

Teknos Group Oy, Takkatie 3, FI-00370 HELSINKI, FINLAND. Tel. +358 9 506 091.

e-mail address of person responsible for this SDS : Prod-safe@teknos.com

National contact

Teknos Group Oy, Takkatie 3, FI-00370 HELSINKI, FINLAND. Tel. +358 9 506 091.

1.4 Emergency telephone number

National advisory body/Poison Centre

Telephone number : In an emergency, call 112

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Flam. Liq. 2, H225

Eye Dam. 1, H318

STOT SE 3, H336

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

Ingredients of unknown toxicity : 3.5 percent of the mixture consists of component(s) of unknown acute oral toxicity
3.5 percent of the mixture consists of component(s) of unknown acute dermal toxicity
3.5 percent of the mixture consists of component(s) of unknown acute inhalation toxicity

Ingredients of unknown ecotoxicity : Contains 3.5% of components with unknown hazards to the aquatic environment

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : H225 - Highly flammable liquid and vapour.
H318 - Causes serious eye damage.
H336 - May cause drowsiness or dizziness.

Precautionary statements

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SECTION 2: Hazards identification

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| Prevention | : P280 - Wear eye or face protection. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
| Response | : P305 + P351 + P338 + P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor. |
| Storage | : P403 + P233 - Store in a well-ventilated place. Keep container tightly closed. |
| Disposal | : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations. |
| Hazardous ingredients | : Contains: Propan-2-ol; acetone and ethyl (S)-2-hydroxypropionate |
| Supplemental label elements | : Repeated exposure may cause skin dryness or cracking. |
| Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles | : |

2.3 Other hazards

| | |
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| Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII | : This mixture does not contain any substances that are assessed to be a PBT or a vPvB. |
| Other hazards which do not result in classification | : None known. |

SECTION 3: Composition/information on ingredients

3.2 Mixtures : Mixture

| Product/ingredient name | Identifiers | % | Classification | Specific Conc. Limits, M-factors and ATEs | Type |
|--------------------------------|---|-----------|---|---|---------|
| Propan-2-ol | REACH #: 01-2119457558-25 EC: 200-661-7 CAS: 67-63-0 Index: 603-117-00-0 | ≥25 - ≤50 | Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336 | - | [1] |
| acetone | REACH #: 01-2119471330-49 EC: 200-662-2 CAS: 67-64-1 Index: 606-001-00-8 | ≥25 - ≤50 | Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336 EUH066 | EUH066: C ≥ 25% | [1] [2] |
| 4-hydroxy-4-methylpentan-2-one | EC: 204-626-7 CAS: 123-42-2 | ≤10 | Flam. Liq. 3, H226 Eye Irrit. 2, H319 STOT SE 3, H335 | - | [1] |
| 2-butoxyethyl acetate | REACH #: 01-2119475112-47 EC: 203-933-3 CAS: 112-07-2 Index: 607-038-00-2 | ≤10 | Acute Tox. 4, H312 Acute Tox. 4, H332 | ATE [Dermal] = 1500 mg/kg ATE [Inhalation (vapours)] = 11 mg/ l | [1] [2] |
| ethyl (S)-2-hydroxypropionate | EC: 211-694-1 CAS: 687-47-8 Index: 607-129-00-7 | ≤9.5 | Flam. Liq. 3, H226 Eye Dam. 1, H318 STOT SE 3, H335 | - | [1] |
| 1-Methoxy 2-propanol | REACH #: 01-2119457435-35 EC: 203-539-1 | ≤10 | Flam. Liq. 3, H226 STOT SE 3, H336 | - | [1] [2] |

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SECTION 3: Composition/information on ingredients

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|-----------------|---|----|--|--|---------|
| 2-Butoxyethanol | CAS: 107-98-2 Index: 603-064-00-3 REACH #: 01-2119475108-36 EC: 203-905-0 CAS: 111-76-2 Index: 603-014-00-0 | ≤5 | Acute Tox. 4, H302 Acute Tox. 3, H331 Skin Irrit. 2, H315 Eye Irrit. 2, H319 See Section 16 for the full text of the H statements declared above. | ATE [Oral] = 1200 mg/kg ATE [Inhalation (vapours)] = 3 mg/l | [1] [2] |
|-----------------|---|----|--|--|---------|

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs, vPvBs or Substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

Type

[1] Substance classified with a health or environmental hazard

[2] Substance with a workplace exposure limit

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

- Eye contact** : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.
- Inhalation** : Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Skin contact** : Get medical attention immediately. Call a poison center or physician. Wash skin thoroughly with soap and water or use recognised skin cleanser. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

4.2 Most important symptoms and effects, both acute and delayed

Over-exposure signs/symptoms

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SECTION 4: First aid measures

- Eye contact** : Adverse symptoms may include the following:
pain
watering
redness
- Inhalation** : Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
- Skin contact** : Adverse symptoms may include the following:
pain or irritation
redness
dryness
cracking
blistering may occur
- Ingestion** : Adverse symptoms may include the following:
stomach pains

4.3 Indication of any immediate medical attention and special treatment needed

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

- Suitable extinguishing media** : Use dry chemical, CO₂, water spray (fog) or foam.
- Unsuitable extinguishing media** : Do not use water jet.

5.2 Special hazards arising from the substance or mixture

- Hazards from the substance or mixture** : Highly flammable liquid and vapour. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.
- Hazardous combustion products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
halogenated compounds

5.3 Advice for firefighters

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and material for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product.

6.4 Reference to other sections : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

SECTION 7: Handling and storage

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. Separate from oxidising materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

Seveso Directive - Reporting thresholds

Danger criteria

| Category | Notification and MAPP threshold | Safety report threshold |
|----------|---------------------------------|-------------------------|
| P5c | 5000 tonne | 50000 tonne |

7.3 Specific end use(s)

Recommendations : Not available.

Industrial sector specific solutions : Not available.

SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

8.1 Control parameters

Occupational exposure limits

| Product/ingredient name | Exposure limit values |
|--------------------------------|---|
| No exposure limit value known. | |
| No exposure limit value known. | |
| Propan-2-ol | Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 13/2003. (Bulgaria, 6/2021). Limit value 8 hours: 980 mg/m ³ 8 hours. Limit value 15 min: 1225 mg/m ³ 15 minutes. |
| acetone | Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 13/2003. (Bulgaria, 6/2021). Limit value 8 hours: 600 mg/m ³ 8 hours. Limit value 15 min: 1400 mg/m ³ 15 minutes. |
| 2-butoxyethyl acetate | Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 13/2003. (Bulgaria, 6/2021). Absorbed through skin. Limit value 8 hours: 133 mg/m ³ 8 hours. Limit value 15 min: 333 mg/m ³ 15 minutes. Limit value 8 hours: 20 ppm 8 hours. Limit value 15 min: 50 ppm 15 minutes. |
| 1-Methoxy 2-propanol | Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 13/2003. (Bulgaria, 6/2021). Absorbed through skin. Limit value 8 hours: 375 mg/m ³ 8 hours. Limit value 15 min: 568 mg/m ³ 15 minutes. Limit value 15 min: 150 ppm 15 minutes. Limit value 8 hours: 100 ppm 8 hours. |
| 2-Butoxyethanol | Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 13/2003. (Bulgaria, 6/2021). Absorbed through skin. Limit value 8 hours: 98 mg/m ³ 8 hours. Limit value 15 min: 246 mg/m ³ 15 minutes. Limit value 15 min: 50 ppm 15 minutes. Limit value 8 hours: 20 ppm 8 hours. |

SECTION 8: Exposure controls/personal protection

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| Propan-2-ol | Ministry of Economy, Labour and Entrepreneurship ELV/ STELV (Croatia, 1/2021). STELV: 1250 mg/m ³ 15 minutes. STELV: 500 ppm 15 minutes. ELV: 999 mg/m ³ 8 hours. ELV: 400 ppm 8 hours. |
| acetone | Ministry of Economy, Labour and Entrepreneurship ELV/ STELV (Croatia, 1/2021). ELV: 1210 mg/m ³ 8 hours. ELV: 500 ppm 8 hours. |
| 4-hydroxy-4-methylpentan-2-one | Ministry of Economy, Labour and Entrepreneurship ELV/ STELV (Croatia, 1/2021). STELV: 362 mg/m ³ 15 minutes. STELV: 75 ppm 15 minutes. ELV: 241 mg/m ³ 8 hours. ELV: 50 ppm 8 hours. |
| 2-butoxyethyl acetate | Ministry of Economy, Labour and Entrepreneurship ELV/ STELV (Croatia, 1/2021). Absorbed through skin. STELV: 333 mg/m ³ 15 minutes. STELV: 50 ppm 15 minutes. ELV: 133 mg/m ³ 8 hours. ELV: 20 ppm 8 hours. |
| 1-Methoxy 2-propanol | Ministry of Economy, Labour and Entrepreneurship ELV/ STELV (Croatia, 1/2021). STELV: 568 mg/m ³ 15 minutes. STELV: 150 ppm 15 minutes. ELV: 375 mg/m ³ 8 hours. ELV: 100 ppm 8 hours. |
| 2-Butoxyethanol | Ministry of Economy, Labour and Entrepreneurship ELV/ STELV (Croatia, 1/2021). Absorbed through skin. STELV: 246 mg/m ³ 15 minutes. STELV: 50 ppm 15 minutes. ELV: 98 mg/m ³ 8 hours. ELV: 20 ppm 8 hours. |
| acetone | Department of labour inspection (Cyprus, 7/2021). Absorbed through skin. TWA: 500 ppm 8 hours. TWA: 1210 mg/m ³ 8 hours. |
| 2-butoxyethyl acetate | Department of labour inspection (Cyprus, 7/2021). Absorbed through skin. STEL: 50 ppm 15 minutes. STEL: 333 mg/m ³ 15 minutes. TWA: 20 ppm 8 hours. TWA: 133 mg/m ³ 8 hours. |
| 1-Methoxy 2-propanol | Department of labour inspection (Cyprus, 7/2021). Absorbed through skin. STEL: 150 ppm 15 minutes. STEL: 568 mg/m ³ 15 minutes. TWA: 100 ppm 8 hours. TWA: 375 mg/m ³ 8 hours. |
| 2-Butoxyethanol | Department of labour inspection (Cyprus, 7/2021). Absorbed through skin. STEL: 50 ppm 15 minutes. STEL: 246 mg/m ³ 15 minutes. TWA: 20 ppm 8 hours. TWA: 98 mg/m ³ 8 hours. |
| Propan-2-ol | Government regulation of Czech Republic PEL/NPK-P (Czech Republic, 10/2022). Absorbed through skin. TWA: 500 mg/m ³ 8 hours. TWA: 200 ppm 8 hours. STEL: 1000 mg/m ³ 15 minutes. STEL: 400 ppm 15 minutes. |
| acetone | Government regulation of Czech Republic PEL/NPK-P (Czech Republic, 10/2022). |

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| 4-hydroxy-4-methylpentan-2-one | <p>TWA: 800 mg/m³ 8 hours. STEL: 1500 mg/m³ 15 minutes. STEL: 621 ppm 15 minutes. TWA: 331.2 ppm 8 hours.</p> <p>Government regulation of Czech Republic PEL/NPK-P (Czech Republic, 10/2022). TWA: 200 mg/m³ 8 hours. TWA: 41.4 ppm 8 hours. STEL: 300 mg/m³ 15 minutes. STEL: 62.1 ppm 15 minutes.</p> |
| 2-butoxyethyl acetate | <p>Government regulation of Czech Republic PEL/NPK-P (Czech Republic, 10/2022). Absorbed through skin. TWA: 130 mg/m³ 8 hours. TWA: 19.5 ppm 8 hours. STEL: 300 mg/m³ 15 minutes. STEL: 45 ppm 15 minutes.</p> |
| 1-Methoxy 2-propanol | <p>Government regulation of Czech Republic PEL/NPK-P (Czech Republic, 10/2022). Absorbed through skin. TWA: 270 mg/m³ 8 hours. TWA: 72.09 ppm 8 hours. STEL: 550 mg/m³ 15 minutes. STEL: 146.85 ppm 15 minutes.</p> |
| 2-Butoxyethanol | <p>Government regulation of Czech Republic PEL/NPK-P (Czech Republic, 10/2022). Absorbed through skin. TWA: 100 mg/m³ 8 hours. TWA: 20.4 ppm 8 hours. STEL: 200 mg/m³ 15 minutes. STEL: 40.8 ppm 15 minutes.</p> |
| No exposure limit value known. No exposure limit value known. | |
| acetone | <p>EU OEL (Europe, 1/2022). Notes: list of indicative occupational exposure limit values TWA: 500 ppm 8 hours. TWA: 1210 mg/m³ 8 hours.</p> |
| 2-butoxyethyl acetate | <p>EU OEL (Europe, 1/2022). Absorbed through skin. Notes: list of indicative occupational exposure limit values TWA: 20 ppm 8 hours. TWA: 133 mg/m³ 8 hours. STEL: 50 ppm 15 minutes. STEL: 333 mg/m³ 15 minutes.</p> |
| 1-Methoxy 2-propanol | <p>EU OEL (Europe, 1/2022). Absorbed through skin. Notes: list of indicative occupational exposure limit values TWA: 100 ppm 8 hours. TWA: 375 mg/m³ 8 hours. STEL: 150 ppm 15 minutes. STEL: 568 mg/m³ 15 minutes.</p> |
| 2-Butoxyethanol | <p>EU OEL (Europe, 1/2022). Absorbed through skin. Notes: list of indicative occupational exposure limit values TWA: 20 ppm 8 hours. TWA: 98 mg/m³ 8 hours. STEL: 50 ppm 15 minutes. STEL: 246 mg/m³ 15 minutes.</p> |
| Propan-2-ol | <p>Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021). TWA: 200 ppm 8 hours. TWA: 500 mg/m³ 8 hours. STEL: 250 ppm 15 minutes. STEL: 620 mg/m³ 15 minutes.</p> |
| acetone | <p>Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021). TWA: 500 ppm 8 hours. TWA: 1200 mg/m³ 8 hours. STEL: 630 ppm 15 minutes.</p> |

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| 4-hydroxy-4-methylpentan-2-one | <p>STEL: 1500 mg/m³ 15 minutes. Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021). TWA: 50 ppm 8 hours. TWA: 240 mg/m³ 8 hours. STEL: 75 ppm 15 minutes. STEL: 360 mg/m³ 15 minutes.</p> |
| 2-butoxyethyl acetate | <p>Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021). Absorbed through skin. TWA: 20 ppm 8 hours. TWA: 130 mg/m³ 8 hours. STEL: 50 ppm 15 minutes. STEL: 330 mg/m³ 15 minutes.</p> |
| ethyl (S)-2-hydroxypropionate | <p>Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021). [Ethyl lactate] TWA: 5 ppm 8 hours. TWA: 25 mg/m³ 8 hours. STEL: 10 ppm 15 minutes. STEL: 49 mg/m³ 15 minutes.</p> |
| 1-Methoxy 2-propanol | <p>Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021). Absorbed through skin. TWA: 100 ppm 8 hours. TWA: 370 mg/m³ 8 hours. STEL: 150 ppm 15 minutes. STEL: 560 mg/m³ 15 minutes.</p> |
| 2-Butoxyethanol | <p>Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021). Absorbed through skin. TWA: 20 ppm 8 hours. TWA: 98 mg/m³ 8 hours. STEL: 50 ppm 15 minutes. STEL: 250 mg/m³ 15 minutes.</p> |
| No exposure limit value known. | |
| Propan-2-ol | <p>TRGS 900 OEL (Germany, 6/2022). TWA: 500 mg/m³ 8 hours. PEAK: 1000 mg/m³ 15 minutes. TWA: 200 ppm 8 hours. PEAK: 400 ppm 15 minutes. DFG MAC-values list (Germany, 7/2022). TWA: 200 ppm 8 hours. PEAK: 400 ppm, 4 times per shift, 15 minutes. TWA: 500 mg/m³ 8 hours. PEAK: 1000 mg/m³, 4 times per shift, 15 minutes.</p> |
| acetone | <p>TRGS 900 OEL (Germany, 6/2022). TWA: 1200 mg/m³ 8 hours. PEAK: 2400 mg/m³ 15 minutes. TWA: 500 ppm 8 hours. PEAK: 1000 ppm 15 minutes. DFG MAC-values list (Germany, 7/2022). TWA: 500 ppm 8 hours. PEAK: 1000 ppm, 4 times per shift, 15 minutes. TWA: 1200 mg/m³ 8 hours. PEAK: 2400 mg/m³, 4 times per shift, 15 minutes.</p> |
| 4-hydroxy-4-methylpentan-2-one | <p>TRGS 900 OEL (Germany, 6/2022). Absorbed through skin. TWA: 96 mg/m³ 8 hours. PEAK: 192 mg/m³ 15 minutes. TWA: 20 ppm 8 hours. PEAK: 40 ppm 15 minutes. DFG MAC-values list (Germany, 7/2022). Absorbed through skin. TWA: 20 ppm 8 hours. PEAK: 40 ppm, 4 times per shift, 15 minutes. TWA: 96 mg/m³ 8 hours. PEAK: 192 mg/m³, 4 times per shift, 15 minutes.</p> |
| 2-butoxyethyl acetate | <p>TRGS 900 OEL (Germany, 6/2022). Absorbed through skin.</p> |

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| | <p>TWA: 65 mg/m³ 8 hours. PEAK: 130 mg/m³ 15 minutes. TWA: 10 ppm 8 hours. PEAK: 20 ppm 15 minutes. DFG MAC-values list (Germany, 7/2022). Absorbed through skin. TWA: 10 ppm 8 hours. PEAK: 20 ppm, 4 times per shift, 15 minutes. TWA: 66 mg/m³ 8 hours. PEAK: 132 mg/m³, 4 times per shift, 15 minutes. TRGS 900 OEL (Germany, 6/2022). TWA: 370 mg/m³ 8 hours. PEAK: 740 mg/m³ 15 minutes. TWA: 100 ppm 8 hours. PEAK: 200 ppm 15 minutes. DFG MAC-values list (Germany, 7/2022). TWA: 100 ppm 8 hours. PEAK: 200 ppm, 4 times per shift, 15 minutes. TWA: 370 mg/m³ 8 hours. PEAK: 740 mg/m³, 4 times per shift, 15 minutes.</p> |
| 1-Methoxy 2-propanol | <p>TRGS 900 OEL (Germany, 6/2022). TWA: 370 mg/m³ 8 hours. PEAK: 740 mg/m³ 15 minutes. TWA: 100 ppm 8 hours. PEAK: 200 ppm 15 minutes. DFG MAC-values list (Germany, 7/2022). TWA: 100 ppm 8 hours. PEAK: 200 ppm, 4 times per shift, 15 minutes. TWA: 370 mg/m³ 8 hours. PEAK: 740 mg/m³, 4 times per shift, 15 minutes.</p> |
| 2-Butoxyethanol | <p>TRGS 900 OEL (Germany, 6/2022). Absorbed through skin. TWA: 49 mg/m³ 8 hours. PEAK: 98 mg/m³ 15 minutes. TWA: 10 ppm 8 hours. PEAK: 20 ppm 15 minutes. DFG MAC-values list (Germany, 7/2022). Absorbed through skin. TWA: 10 ppm 8 hours. PEAK: 20 ppm, 4 times per shift, 15 minutes. TWA: 49 mg/m³ 8 hours. PEAK: 98 mg/m³, 4 times per shift, 15 minutes.</p> |
| Propan-2-ol | <p>Presidential Decree 307/1986: Occupational exposure limit values (Greece, 9/2021). TWA: 400 ppm 8 hours. TWA: 980 mg/m³ 8 hours. STEL: 500 ppm 15 minutes. STEL: 1225 mg/m³ 15 minutes.</p> |
| acetone | <p>Presidential Decree 307/1986: Occupational exposure limit values (Greece, 9/2021). TWA: 1780 mg/m³ 8 hours. STEL: 3560 mg/m³ 15 minutes.</p> |
| 4-hydroxy-4-methylpentan-2-one | <p>Presidential Decree 307/1986: Occupational exposure limit values (Greece, 9/2021). TWA: 50 ppm 8 hours. TWA: 240 mg/m³ 8 hours. STEL: 75 ppm 15 minutes. STEL: 360 mg/m³ 15 minutes.</p> |
| 2-butoxyethyl acetate | <p>Presidential Decree 307/1986: Occupational exposure limit values (Greece, 9/2021). TWA: 20 ppm 8 hours. TWA: 135 mg/m³ 8 hours. STEL: 40 ppm 15 minutes. STEL: 270 mg/m³ 15 minutes.</p> |
| 1-Methoxy 2-propanol | <p>Presidential Decree 307/1986: Occupational exposure limit values (Greece, 9/2021). Absorbed through skin. TWA: 100 ppm 8 hours. TWA: 360 mg/m³ 8 hours. STEL: 300 ppm 15 minutes. STEL: 1080 mg/m³ 15 minutes.</p> |
| 2-Butoxyethanol | <p>Presidential Decree 307/1986: Occupational exposure limit values (Greece, 9/2021). Absorbed through skin. TWA: 25 ppm 8 hours. TWA: 120 mg/m³ 8 hours.</p> |

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|--------------------------------|--|
| Propan-2-ol | <p>5/2020. (II. 6.) ITM Decree (Hungary, 12/2022). Absorbed through skin. Skin sensitiser. Inhalation sensitiser. TWA: 500 mg/m³ 8 hours. PEAK: 1000 mg/m³ 15 minutes. PEAK: 400 ppm 15 minutes. TWA: 200 ppm 8 hours.</p> |
| acetone | <p>5/2020. (II. 6.) ITM Decree (Hungary, 12/2022). Skin sensitiser. Inhalation sensitiser. TWA: 1210 mg/m³ 8 hours. TWA: 500 ppm 8 hours.</p> |
| 2-butoxyethyl acetate | <p>5/2020. (II. 6.) ITM Decree (Hungary, 12/2022). Absorbed through skin. TWA: 133 mg/m³ 8 hours. PEAK: 333 mg/m³ 15 minutes. PEAK: 50 ppm 15 minutes. TWA: 20 ppm 8 hours.</p> |
| 1-Methoxy 2-propanol | <p>5/2020. (II. 6.) ITM Decree (Hungary, 12/2022). Absorbed through skin. TWA: 375 mg/m³ 8 hours. PEAK: 568 mg/m³ 15 minutes. PEAK: 150 ppm 15 minutes. TWA: 100 ppm 8 hours.</p> |
| 2-Butoxyethanol | <p>5/2020. (II. 6.) ITM Decree (Hungary, 12/2022). Absorbed through skin. Skin sensitiser. Inhalation sensitiser. TWA: 98 mg/m³ 8 hours. PEAK: 246 mg/m³ 15 minutes. PEAK: 50 ppm 15 minutes. TWA: 20 ppm 8 hours.</p> |
| No exposure limit value known. | |
| No exposure limit value known. | |
| acetone | <p>Legislative Decree No. 819/2008. Title IX. Protection from chemical agents, carcinogens and mutagens (Italy, 6/2020). 8 hours: 500 ppm 8 hours. 8 hours: 1210 mg/m³ 8 hours.</p> |
| 2-butoxyethyl acetate | <p>Legislative Decree No. 819/2008. Title IX. Protection from chemical agents, carcinogens and mutagens (Italy, 6/2020). Absorbed through skin. 8 hours: 20 ppm 8 hours. 8 hours: 133 mg/m³ 8 hours. Short Term: 50 ppm 15 minutes. Short Term: 333 mg/m³ 15 minutes.</p> |
| 1-Methoxy 2-propanol | <p>Legislative Decree No. 819/2008. Title IX. Protection from chemical agents, carcinogens and mutagens (Italy, 6/2020). Absorbed through skin. 8 hours: 100 ppm 8 hours. 8 hours: 375 mg/m³ 8 hours. Short Term: 150 ppm 15 minutes. Short Term: 568 mg/m³ 15 minutes.</p> |
| 2-Butoxyethanol | <p>Legislative Decree No. 819/2008. Title IX. Protection from chemical agents, carcinogens and mutagens (Italy, 6/2020). Absorbed through skin. 8 hours: 20 ppm 8 hours. 8 hours: 98 mg/m³ 8 hours. Short Term: 50 ppm 15 minutes. Short Term: 246 mg/m³ 15 minutes.</p> |
| No exposure limit value known. | |

SECTION 8: Exposure controls/personal protection

| | |
|--------------------------------|---|
| Propan-2-ol | Lithuanian Hygiene Standard HN 23 (Lithuania, 7/2022). TWA: 350 mg/m ³ 8 hours. TWA: 150 ppm 8 hours. STEL: 600 mg/m ³ 15 minutes. STEL: 250 ppm 15 minutes. |
| acetone | Lithuanian Hygiene Standard HN 23 (Lithuania, 7/2022). TWA: 1210 mg/m ³ 8 hours. TWA: 500 ppm 8 hours. STEL: 2420 mg/m ³ 15 minutes. STEL: 1000 ppm 15 minutes. |
| 4-hydroxy-4-methylpentan-2-one | Lithuanian Hygiene Standard HN 23 (Lithuania, 7/2022). TWA: 120 mg/m ³ 8 hours. TWA: 25 ppm 8 hours. STEL: 240 mg/m ³ 15 minutes. STEL: 50 ppm 15 minutes. |
| 2-butoxyethyl acetate | Lithuanian Hygiene Standard HN 23 (Lithuania, 7/2022). Absorbed through skin. TWA: 70 mg/m ³ 8 hours. TWA: 10 ppm 8 hours. STEL: 140 mg/m ³ 15 minutes. STEL: 20 ppm 15 minutes. |
| 1-Methoxy 2-propanol | Lithuanian Hygiene Standard HN 23 (Lithuania, 7/2022). Absorbed through skin. TWA: 190 mg/m ³ 8 hours. TWA: 50 ppm 8 hours. STEL: 300 mg/m ³ 15 minutes. STEL: 75 ppm 15 minutes. |
| 2-Butoxyethanol | Lithuanian Hygiene Standard HN 23 (Lithuania, 7/2022). Absorbed through skin. TWA: 50 mg/m ³ 8 hours. TWA: 10 ppm 8 hours. STEL: 100 mg/m ³ 15 minutes. STEL: 20 ppm 15 minutes. |
| acetone | Grand-Duchy Regulation 2016. Chemical agents. Annex I (Luxembourg, 3/2021). TWA: 500 ppm 8 hours. TWA: 1210 mg/m ³ 8 hours. |
| 2-butoxyethyl acetate | Grand-Duchy Regulation 2016. Chemical agents. Annex I (Luxembourg, 3/2021). Absorbed through skin. TWA: 20 ppm 8 hours. TWA: 133 mg/m ³ 8 hours. STEL: 50 ppm 15 minutes. STEL: 333 mg/m ³ 15 minutes. |
| 1-Methoxy 2-propanol | Grand-Duchy Regulation 2016. Chemical agents. Annex I (Luxembourg, 3/2021). Absorbed through skin. TWA: 100 ppm 8 hours. TWA: 375 mg/m ³ 8 hours. STEL: 150 ppm 15 minutes. STEL: 568 mg/m ³ 15 minutes. |
| 2-Butoxyethanol | Grand-Duchy Regulation 2016. Chemical agents. Annex I (Luxembourg, 3/2021). Absorbed through skin. TWA: 20 ppm 8 hours. TWA: 98 mg/m ³ 8 hours. STEL: 50 ppm 15 minutes. STEL: 246 mg/m ³ 15 minutes. |
| acetone | EU OEL (Europe, 1/2022). Notes: list of indicative occupational exposure limit values TWA: 500 ppm 8 hours. TWA: 1210 mg/m ³ 8 hours. |
| 2-butoxyethyl acetate | EU OEL (Europe, 1/2022). Absorbed through skin. Notes: list of indicative occupational exposure limit values TWA: 20 ppm 8 hours. TWA: 133 mg/m ³ 8 hours. STEL: 50 ppm 15 minutes. |

SECTION 8: Exposure controls/personal protection

| | |
|---|--|
| <p>1-Methoxy 2-propanol</p> | <p>STEL: 333 mg/m³ 15 minutes. EU OEL (Europe, 1/2022). Absorbed through skin. Notes: list of indicative occupational exposure limit values TWA: 100 ppm 8 hours. TWA: 375 mg/m³ 8 hours. STEL: 150 ppm 15 minutes. STEL: 568 mg/m³ 15 minutes.</p> |
| <p>2-Butoxyethanol</p> | <p>EU OEL (Europe, 1/2022). Absorbed through skin. Notes: list of indicative occupational exposure limit values TWA: 20 ppm 8 hours. TWA: 98 mg/m³ 8 hours. STEL: 50 ppm 15 minutes. STEL: 246 mg/m³ 15 minutes.</p> |
| <p>No exposure limit value known. No exposure limit value known. No exposure limit value known. No exposure limit value known. No exposure limit value known. No exposure limit value known. No exposure limit value known. No exposure limit value known. No exposure limit value known. No exposure limit value known. No exposure limit value known.</p> | |

Biological exposure indices

| Product/ingredient name | Exposure indices |
|---|--|
| <p>No exposure indices known. No exposure indices known.</p> | |
| <p>acetone</p> | <p>Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 13/2003. (Bulgaria, 6/2021) BLV: 80 mg/l, acetone [in urine]. Sampling time: after the end of the exposure or the end of the work shift.</p> |
| <p>Propan-2-ol</p> | <p>Ministry of Economy, Labour and Entrepreneurship ILV/STEL (Croatia, 10/2018) BEI: 50 mg/l, acetone [in urine]. Sampling time: at the end of the work shift. BEI: 50 mg/l, acetone [in blood]. Sampling time: at the end of the work shift. BEI: 0.86 µmol/l, acetone [in urine]. Sampling time: at the end of the work shift. BEI: 0.86 µmol/l, acetone [in blood]. Sampling time: at the end of the work shift.</p> |
| <p>acetone</p> | <p>Ministry of Economy, Labour and Entrepreneurship ILV/STEL (Croatia, 10/2018) BEI: 20 mg/g creatinine, acetone [in urine]. Sampling time: at the end of the work shift. BEI: 39 mmol/mol creatinine, acetone [in urine]. Sampling time: at the end of the work shift. BEI: 20 mg/l, acetone [in blood]. Sampling time: at the end of the work shift. BEI: 0.34 mmol/l, acetone [in blood]. Sampling time: at the end of the work shift.</p> |
| <p>No exposure indices known.</p> | |

SECTION 8: Exposure controls/personal protection

| | |
|--|--|
| 2-butoxyethyl acetate | <p>Government regulation of Czech Republic Limit Values of Biological Exposure Tests (Czech Republic, 9/2015) Biological limit values: 0.17 mmol/mmol creatinine, butoxyacetic acid (after hydrolysis) [in urine]. Sampling time: the end of the shift at the end of the week. Biological limit values: 200 mg/g creatinine, butoxyacetic acid (after hydrolysis) [in urine]. Sampling time: the end of the shift at the end of the week.</p> |
| 2-Butoxyethanol | <p>Government regulation of Czech Republic Limit Values of Biological Exposure Tests (Czech Republic, 9/2015) Biological limit values: 0.17 mmol/mmol creatinine, butoxyacetic acid (after hydrolysis) [in urine]. Sampling time: the end of the shift at the end of the week. Biological limit values: 200 mg/g creatinine, butoxyacetic acid (after hydrolysis) [in urine]. Sampling time: the end of the shift at the end of the week.</p> |
| No exposure indices known. No exposure indices known. No exposure indices known. No exposure indices known. No exposure indices known. | |
| Propan-2-ol | <p>DFG BEI-values list (Germany, 7/2022) BEI: 25 mg/l, acetone [in blood]. Sampling time: end of exposure or end of shift. BEI: 25 mg/l, acetone [in urine]. Sampling time: end of exposure or end of shift. TRGS 903 - BEI Values (Germany, 2/2022) BEI: 25 mg/l, acetone [in whole blood]. Sampling time: end of exposure or end of shift. BEI: 25 mg/l, acetone [in urine]. Sampling time: end of exposure or end of shift.</p> |
| acetone | <p>DFG BEI-values list (Germany, 7/2022) BEI: 50 mg/l, acetone [in urine]. Sampling time: end of exposure or end of shift. TRGS 903 - BEI Values (Germany, 2/2022) BEI: 80 mg/l, acetone [in urine]. Sampling time: end of exposure or end of shift.</p> |
| 2-butoxyethyl acetate | <p>DFG BEI-values list (Germany, 7/2022) Notes: danger from percutaneous absorption (see p. 211 and p. 228). BEI: 150 mg/g creatinine, butoxyacetic acid (after hydrolysis) [in urine]. Sampling time: end of exposure or end of shift / for long-term exposures: at the end of the shift after several shifts. TRGS 903 - BEI Values (Germany, 2/2022) BEI: 150 mg/g, butoxy acetic acid (after hydrolysis) [in urine]. Sampling time: end of exposure or end of shift; for long-term exposures: at the end of shift after several shifts.</p> |
| 1-Methoxy 2-propanol | <p>DFG BEI-values list (Germany, 7/2022) BEI: 15 mg/l, propylene glycol 1-methyl ether [in urine]. Sampling time: end of exposure or end of shift. TRGS 903 - BEI Values (Germany, 2/2022) BEI: 15 mg/l, 1-methoxypropan-2-ol [in urine]. Sampling time: end of exposure or end of shift.</p> |
| 2-Butoxyethanol | <p>DFG BEI-values list (Germany, 7/2022) Notes: danger from percutaneous absorption (see p. 211 and p. 228). BEI: 150 mg/g creatinine, butoxyacetic acid (after hydrolysis) [in urine]. Sampling time: end of exposure or end of shift / for long-</p> |

SECTION 8: Exposure controls/personal protection

| Product/ingredient name | Type | Exposure | Value | Population | Effects | |
|--------------------------------|---------|-----------------------|------------------------|------------------------|--------------------|----------|
| Propan-2-ol | DNEL | Long term Oral | 26 mg/kg bw/day | General population | Systemic | |
| | DNEL | Long term Inhalation | 89 mg/m ³ | General population | Systemic | |
| | DNEL | Long term Dermal | 319 mg/kg bw/day | General population | Systemic | |
| | DNEL | Long term Inhalation | 500 mg/m ³ | Workers | Systemic | |
| | DNEL | Long term Dermal | 888 mg/kg bw/day | Workers | Systemic | |
| | acetone | DNEL | Long term Oral | 62 mg/kg bw/day | General population | Systemic |
| | | DNEL | Long term Dermal | 62 mg/kg bw/day | General population | Systemic |
| | | DNEL | Long term Dermal | 186 mg/kg bw/day | Workers | Systemic |
| | | DNEL | Long term Inhalation | 200 mg/m ³ | General population | Systemic |
| | | DNEL | Long term Inhalation | 1210 mg/m ³ | Workers | Systemic |
| DNEL | | Short term Inhalation | 2420 mg/m ³ | Workers | Local | |
| 4-hydroxy-4-methylpentan-2-one | | DNEL | Long term Oral | 1.67 mg/kg bw/day | General population | Systemic |
| | | DNEL | Long term Inhalation | 5.8 mg/m ³ | General population | Systemic |
| | | DNEL | Long term Inhalation | 32.6 mg/m ³ | Workers | Systemic |
| | | DNEL | Long term Dermal | 33 mg/kg bw/day | General population | Systemic |
| | DNEL | Short term Inhalation | 240 mg/m ³ | Workers | Local | |
| | DNEL | Long term Dermal | 467 mg/kg bw/day | Workers | Systemic | |
| 2-butoxyethyl acetate | DNEL | Long term Oral | 8.6 mg/kg bw/day | General population | Systemic | |
| | DNEL | Short term Oral | 36 mg/kg bw/day | General population | Systemic | |
| | DNEL | Short term Dermal | 72 mg/kg bw/day | General population | Systemic | |
| | DNEL | Long term Inhalation | 80 mg/m ³ | General population | Systemic | |
| | DNEL | Long term Dermal | 102 mg/kg bw/day | General population | Systemic | |
| | DNEL | Short term Dermal | 120 mg/kg bw/day | Workers | Systemic | |
| | DNEL | Long term Inhalation | 133 mg/m ³ | Workers | Systemic | |
| | DNEL | Long term Dermal | 169 mg/kg bw/day | Workers | Systemic | |
| | DNEL | Short term Inhalation | 200 mg/m ³ | General population | Local | |
| | DNEL | Short term Inhalation | 333 mg/m ³ | Workers | Local | |
| 1-Methoxy 2-propanol | DNEL | Long term Oral | 33 mg/kg bw/day | General population | Systemic | |
| | DNEL | Long term Inhalation | 43.9 mg/m ³ | General population | Systemic | |
| | DNEL | Long term Dermal | 78 mg/kg bw/day | General population | Systemic | |
| | DNEL | Long term Dermal | 183 mg/kg bw/day | Workers | Systemic | |
| | DNEL | Long term Inhalation | 369 mg/m ³ | Workers | Systemic | |

SECTION 8: Exposure controls/personal protection

| | | | | | |
|-----------------|------|-----------------------|-------------------------|--------------------|----------|
| 2-Butoxyethanol | DNEL | Short term Inhalation | 553.5 mg/m ³ | Workers | Local |
| | DNEL | Short term Inhalation | 553.5 mg/m ³ | Workers | Systemic |
| | DNEL | Long term Oral | 6.3 mg/kg bw/day | General population | Systemic |
| | DNEL | Short term Oral | 26.7 mg/kg bw/day | General population | Systemic |
| | DNEL | Long term Inhalation | 59 mg/m ³ | General population | Systemic |
| | DNEL | Long term Inhalation | 98 mg/m ³ | Workers | Systemic |
| | DNEL | Short term Inhalation | 147 mg/m ³ | General population | Local |
| | DNEL | Short term Inhalation | 246 mg/m ³ | Workers | Local |
| | DNEL | Short term Inhalation | 426 mg/m ³ | General population | Systemic |
| | DNEL | Short term Inhalation | 1091 mg/m ³ | Workers | Systemic |

PNECs

No PNECs available

8.2 Exposure controls

Appropriate engineering controls

: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Individual protection measures

Hygiene measures

: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Hand protection

: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection

: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves. Refer to European Standard EN 1149 for further information on material and design requirements and test methods.

Other skin protection

: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

SECTION 8: Exposure controls/personal protection

- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

9.1 Information on basic physical and chemical properties

Appearance

- Physical state** : Liquid.
- Colour** : Various
- Odour** : Slight
- Odour threshold** : Not available.
- Melting point/freezing point** : Not available.
- Initial boiling point and boiling range** :

| Ingredient name | °C | °F | Method |
|-----------------|-------|-------|--------|
| acetone | 56.05 | 132.9 | |
| Propan-2-ol | 83 | 181.4 | |

- Flammability** : Not available.
- Lower and upper explosion limit** : Lower: 2%
Upper: 13%
- Flash point** : Closed cup: -19°C (-2.2°F)
- Auto-ignition temperature** :

| Ingredient name | °C | °F | Method |
|----------------------|-----|-----|-----------|
| 2-Butoxyethanol | 230 | 446 | DIN 51794 |
| 1-Methoxy 2-propanol | 270 | 518 | |

- Decomposition temperature** : Not available.
- pH** : Not applicable.
- Viscosity** : Not available.
- Solubility(ies)** :
Not available.
- Solubility in water** : Not available.
- Partition coefficient: n-octanol/ water** : Not applicable.
- Vapour pressure** :

| Ingredient name | Vapour Pressure at 20°C | | | Vapour pressure at 50°C | | |
|-----------------|-------------------------|-----|--------|-------------------------|-----|--------|
| | mm Hg | kPa | Method | mm Hg | kPa | Method |
| acetone | 180.01463 | 24 | | | | |
| Propan-2-ol | 33.00268 | 4.4 | | | | |

- Relative density** : Not available.
- Density** : 0.9 g/cm³
- Vapour density** : Not available.
- Explosive properties** : Not available.
- Oxidising properties** : Not available.

SECTION 9: Physical and chemical properties

Particle characteristics

Median particle size : Not applicable.

SECTION 10: Stability and reactivity

10.1 Reactivity : No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability : The product is stable.

10.3 Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid : Avoid all possible sources of ignition (spark or flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

10.5 Incompatible materials : Reactive or incompatible with the following materials:
oxidising materials

10.6 Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

| Product/ingredient name | Result | Species | Dose | Exposure |
|--------------------------------|-------------|---------|-------------|----------|
| Propan-2-ol | LD50 Dermal | Rabbit | 12800 mg/kg | - |
| | LD50 Oral | Rat | 5000 mg/kg | - |
| acetone | LD50 Oral | Rat | 5800 mg/kg | - |
| 4-hydroxy-4-methylpentan-2-one | LD50 Dermal | Rabbit | 13500 mg/kg | - |
| | LD50 Oral | Rat | 2520 mg/kg | - |
| 2-butoxyethyl acetate | LD50 Dermal | Rabbit | 1500 mg/kg | - |
| | LD50 Oral | Rat | 2400 mg/kg | - |
| 1-Methoxy 2-propanol | LD50 Dermal | Rabbit | 13 g/kg | - |
| | LD50 Oral | Rat | 6600 mg/kg | - |

Conclusion/Summary : Based on available data, the classification criteria are not met.

Acute toxicity estimates

| Route | ATE value |
|----------------------|----------------|
| Oral | 24242.42 mg/kg |
| Dermal | 16025.64 mg/kg |
| Inhalation (vapours) | 39.99 mg/l |

Irritation/Corrosion

| Product/ingredient name | Result | Species | Score | Exposure | Observation |
|-------------------------|--------------------------|---------|-------|-----------------|-------------|
| Propan-2-ol | Eyes - Moderate irritant | Rabbit | - | 10 mg | - |
| | Eyes - Moderate irritant | Rabbit | - | 24 hours 100 mg | - |
| acetone | Eyes - Severe irritant | Rabbit | - | 100 mg | - |
| | Skin - Mild irritant | Rabbit | - | 500 mg | - |
| | Eyes - Mild irritant | Human | - | 186300 ppm | - |
| | Eyes - Mild irritant | Rabbit | - | 10 uL | - |
| | Eyes - Moderate irritant | Rabbit | - | 24 hours 20 mg | - |
| | Eyes - Severe irritant | Rabbit | - | 20 mg | - |
| | Skin - Mild irritant | Rabbit | - | 395 mg | - |
| | Skin - Mild irritant | Rabbit | - | 24 hours 500 mg | - |

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| | | | | | |
|--------------------------------|--------------------------|--------|---|-----------------|---|
| 4-hydroxy-4-methylpentan-2-one | Eyes - Severe irritant | Rabbit | - | 24 hours 100 uL | - |
| | Eyes - Severe irritant | Rabbit | - | 20 mg | - |
| 2-butoxyethyl acetate | Skin - Mild irritant | Rabbit | - | 500 mg | - |
| | Eyes - Mild irritant | Rabbit | - | 24 hours 500 mg | - |
| 1-Methoxy 2-propanol | Skin - Mild irritant | Rabbit | - | 500 mg | - |
| | Eyes - Mild irritant | Rabbit | - | 24 hours 500 mg | - |
| 2-Butoxyethanol | Skin - Mild irritant | Rabbit | - | 500 mg | - |
| | Eyes - Moderate irritant | Rabbit | - | 24 hours 100 mg | - |
| | Eyes - Severe irritant | Rabbit | - | 100 mg | - |
| | Skin - Mild irritant | Rabbit | - | 500 mg | - |

Conclusion/Summary : Based on available data, the classification criteria are not met.

Sensitisation

Conclusion/Summary : Based on available data, the classification criteria are not met.

Mutagenicity

Conclusion/Summary : Based on available data, the classification criteria are not met.

Carcinogenicity

Conclusion/Summary : Based on available data, the classification criteria are not met.

Reproductive toxicity

Conclusion/Summary : Based on available data, the classification criteria are not met.

Teratogenicity

Conclusion/Summary : Based on available data, the classification criteria are not met.

Specific target organ toxicity (single exposure)

| Product/ingredient name | Category | Route of exposure | Target organs |
|--------------------------------|------------|-------------------|------------------------------|
| Propan-2-ol | Category 3 | - | Narcotic effects |
| acetone | Category 3 | - | Narcotic effects |
| 4-hydroxy-4-methylpentan-2-one | Category 3 | - | Respiratory tract irritation |
| ethyl (S)-2-hydroxypropionate | Category 3 | - | Respiratory tract irritation |
| 1-Methoxy 2-propanol | Category 3 | - | Narcotic effects |

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.

Skin contact : Defatting to the skin. May cause skin dryness and irritation.

Ingestion : Can cause central nervous system (CNS) depression.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain
watering
redness

SECTION 11: Toxicological information

- Inhalation** : Adverse symptoms may include the following:
 nausea or vomiting
 headache
 drowsiness/fatigue
 dizziness/vertigo
 unconsciousness
- Skin contact** : Adverse symptoms may include the following:
 pain or irritation
 redness
 dryness
 cracking
 blistering may occur
- Ingestion** : Adverse symptoms may include the following:
 stomach pains

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

Conclusion/Summary : Not available.

General : Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties

Not available.

11.2.2 Other information

Not available.

SECTION 12: Ecological information

12.1 Toxicity

| Product/ingredient name | Result | Species | Exposure |
|-------------------------|--------------------------------------|---|--------------------------------|
| Propan-2-ol | Acute EC50 10100 mg/l Fresh water | Daphnia - <i>Daphnia magna</i> | 48 hours |
| | Acute LC50 1400000 µg/l Marine water | Crustaceans - <i>Crangon crangon</i> | 48 hours |
| | Acute LC50 4200000 µg/l Fresh water | Fish - <i>Rasbora heteromorpha</i> | 96 hours |
| | Acute EC50 20.565 mg/l Fresh water | Algae - <i>Ulva pertusa</i> | 96 hours |
| | Acute LC50 6000000 µg/l Fresh water | Crustaceans - <i>Gammarus pulex</i> | 48 hours |
| | Acute LC50 10000 µg/l Fresh water | Daphnia - <i>Daphnia magna</i> | 48 hours |
| | Acute LC50 5600 ppm Fresh water | Fish - <i>Poecilia reticulata</i> | 96 hours |
| | Chronic NOEC 4.95 mg/l Marine water | Algae - <i>Ulva pertusa</i> | 96 hours |
| | Chronic NOEC 0.016 ml/L Fresh water | Crustaceans - <i>Daphniidae</i> | 21 days |
| | Chronic NOEC 0.1 ml/L Fresh water | Daphnia - <i>Daphnia magna</i> - Neonate | 21 days |
| acetone | Chronic NOEC 5 µg/l Marine water | Fish - <i>Gasterosteus aculeatus</i> - Larvae | 42 days |
| | 2-Butoxyethanol | Acute EC50 >1000 mg/l Fresh water | Daphnia - <i>Daphnia magna</i> |

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| | | | |
|--|--------------------------------------|--------------------------------------|----------|
| | Acute LC50 800000 µg/l Marine water | Crustaceans - <i>Crangon crangon</i> | 48 hours |
| | Acute LC50 1250000 µg/l Marine water | Fish - <i>Menidia beryllina</i> | 96 hours |

Conclusion/Summary : Based on available data, the classification criteria are not met.

12.2 Persistence and degradability

Conclusion/Summary : This product has not been tested for biodegradation.

12.3 Bioaccumulative potential

| Product/ingredient name | LogP _{ow} | BCF | Potential |
|--------------------------------|--------------------|-----|-----------|
| Propan-2-ol | 0.05 | - | Low |
| acetone | -0.23 | - | Low |
| 4-hydroxy-4-methylpentan-2-one | -0.14 to 1.03 | - | Low |
| 2-butoxyethyl acetate | 1.51 | - | Low |
| ethyl (S) | 0.31 | - | Low |
| -2-hydroxypropionate | | | |
| 1-Methoxy 2-propanol | <1 | - | Low |
| 2-Butoxyethanol | 0.81 | - | Low |

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

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

12.6 Endocrine disrupting properties

Not available.

12.7 Other adverse effects

No known significant effects or critical hazards.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste : The classification of the product may meet the criteria for a hazardous waste.

European waste catalogue (EWC) : 08.01.11






Packaging

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

SECTION 13: Disposal considerations

Special precautions : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapour from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

| | ADR/RID | ADN | IMDG | IATA |
|---------------------------------|--|--|---|--|
| 14.1 UN number or ID number | UN1993 | UN1993 | UN1993 | UN1993 |
| 14.2 UN proper shipping name | FLAMMABLE LIQUID, N.O.S. (Isopropyl alcohol, acetone) | FLAMMABLE LIQUID, N.O.S. (Isopropyl alcohol, acetone) | FLAMMABLE LIQUID, N.O.S. (Isopropyl alcohol, 4-hydroxy-4-methylpentan-2-one) | FLAMMABLE LIQUID, N.O.S. (Isopropyl alcohol, 4-hydroxy-4-methylpentan-2-one) |
| 14.3 Transport hazard class(es) | 3  | 3  | 3   | 3  |
| 14.4 Packing group | II | II | II | II |
| 14.5 Environmental hazards | No. | Yes. | Yes. | Yes. The environmentally hazardous substance mark is not required. |

Additional information

ADR/RID : **Special provisions** 640 (C)
Tunnel code (D/E)

ADN : The product is only regulated as an environmentally hazardous substance when transported in tank vessels.
Special provisions 640 (C)

IMDG : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.

IATA : The environmentally hazardous substance mark may appear if required by other transportation regulations.

14.6 Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Maritime transport in bulk according to IMO instruments : Not relevant/applicable due to nature of the product.

SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

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SECTION 15: Regulatory information

| Product/ingredient name | % | Designation [Usage] |
|----------------------------|-----|---------------------|
| VARIVA SOLVA 8776-00 SPRAY | ≥90 | 3 |

Labelling :

Other EU regulations

Industrial emissions (integrated pollution prevention and control) - Air : Listed

Industrial emissions (integrated pollution prevention and control) - Water : Not listed

Explosive precursors : Not applicable.

Ozone depleting substances (1005/2009/EU)

Not listed.

Prior Informed Consent (PIC) (649/2012/EU)

Not listed.

Persistent Organic Pollutants

Not listed.

Seveso Directive

This product is controlled under the Seveso Directive.

Danger criteria

Category

P5c

National regulations

Austria

Czech Republic

Storage code : I

Denmark

Finland

France

Germany

Storage class (TRGS 510) : 3

Hazardous incident ordinance

This product is controlled under the Germany Hazardous Incident Ordinance.

Danger criteria

Category

P5c

Reference number

1.2.5.3

Hazard class for water : 1

Technical instruction on air quality control : TA-Luft Number 5.2.5: 95.3%

AOX : The product contains organically bound halogens and can contribute to the AOX value in waste water.

Italy

D.Lgs. 152/06 : Not determined.

Netherlands

Norway

Sweden

Switzerland

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SECTION 15: Regulatory information

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

15.2 Chemical safety assessment

: This product contains substances for which Chemical Safety Assessments are still required.

SECTION 16: Other information

✔ Indicates information that has changed from previously issued version.

Abbreviations and acronyms

: ATE = Acute Toxicity Estimate
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
EUH statement = CLP-specific Hazard statement
N/A = Not available
PBT = Persistent, Bioaccumulative and Toxic
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number
SGG = Segregation Group
vPvB = Very Persistent and Very Bioaccumulative

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

| Classification | Justification |
|---|---|
| Flam. Liq. 2, H225 Eye Dam. 1, H318 STOT SE 3, H336 | On basis of test data Calculation method Calculation method |

Full text of abbreviated H statements

| | |
|--------|---|
| H225 | Highly flammable liquid and vapour. |
| H226 | Flammable liquid and vapour. |
| H302 | Harmful if swallowed. |
| H312 | Harmful in contact with skin. |
| H315 | Causes skin irritation. |
| H318 | Causes serious eye damage. |
| H319 | Causes serious eye irritation. |
| H331 | Toxic if inhaled. |
| H332 | Harmful if inhaled. |
| H335 | May cause respiratory irritation. |
| H336 | May cause drowsiness or dizziness. |
| EUH066 | Repeated exposure may cause skin dryness or cracking. |

Full text of classifications [CLP/GHS]

SECTION 16: Other information

| | |
|---------------|---|
| Acute Tox. 3 | ACUTE TOXICITY - Category 3 |
| Acute Tox. 4 | ACUTE TOXICITY - Category 4 |
| Eye Dam. 1 | SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1 |
| Eye Irrit. 2 | SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2 |
| Flam. Liq. 2 | FLAMMABLE LIQUIDS - Category 2 |
| Flam. Liq. 3 | FLAMMABLE LIQUIDS - Category 3 |
| Skin Irrit. 2 | SKIN CORROSION/IRRITATION - Category 2 |
| STOT SE 3 | SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 3 |

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Date of previous issue : No previous validation

Version : 1

VARIVA SOLVA 8776-00 SPRAY

All variants

Notice to reader

The information in this SDS is based on the present state of our knowledge and on current laws. The product is not to be used for purposes other than those specified under section 1 without first obtaining written handling instructions. It is always the responsibility of the user to take all necessary steps to fulfil the demands set out in the local rules and legislation. The information in this SDS is meant to be a description of the safety requirements for our product. It is not to be considered a guarantee of the product's properties.

