SAFETY DATA SHEET

VARIVA SOLVA 8775-00 WIPE - All variants

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

1.1 Product identifier

Product name : VARIVA SOLVA 8775-00 WIPE - 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
Acute Tox. 4, H332
Eye Dam. 1, H318
STOT SE 3, H335
STOT SE 3, H336

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

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.
H332 - Harmful if inhaled.
H335 - May cause respiratory irritation.
H336 - May cause drowsiness or dizziness.

Precautionary statements

Prevention : P280 - Wear eye or face protection.
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

SECTION 2: Hazards identification

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: 4-hydroxy-4-methylpentan-2-one; 2-butoxyethyl acetate; ethyl (S) -2-hydroxypropionate and 1-Methoxy 2-propanol

Supplemental label elements :

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

2.3 Other hazards

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
4-hydroxy-4-methylpentan-2-one	EC: 204-626-7 CAS: 123-42-2	≥10 - ≤25	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 - ≤25	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	≥10 - ≤25	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 CAS: 107-98-2 Index: 603-064-00-3	≥10 - ≤25	Flam. Liq. 3, H226 STOT SE 3, H336	-	[1] [2]
2-Butoxyethanol	REACH #: 01-2119475108-36 EC: 203-905-0 CAS: 111-76-2 Index: 603-014-00-0	<10	Acute Tox. 4, H302 Acute Tox. 3, H331 Skin Irrit. 2, H315 Eye Irrit. 2, H319	ATE [Oral] = 1200 mg/kg ATE [Inhalation (vapours)] = 3 mg/l	[1] [2]
Propan-2-ol	REACH #: 01-2119457558-25 EC: 200-661-7 CAS: 67-63-0 Index: 603-117-00-0	≤10	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336	-	[1]

SECTION 3: Composition/information on ingredients

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

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 contaminated skin with soap and water. 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

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

SECTION 4: First aid measures

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
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, CO_2, 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".

SECTION 6: Accidental release measures

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. Absorb with an inert 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. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. 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.

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

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. Store locked up. 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. See Section 10 for incompatible materials before handling or use.

Seveso Directive - Reporting thresholds

Danger criteria

Category	Notification and MAPP threshold	Safety report threshold
P5c	5000 tonnes	50000 tonnes

7.3 Specific end use(s)

Recommendations : Not available.

SECTION 7: Handling and storage

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
4-hydroxy-4-methylpentan-2-one	**Regulation on Limit Values - MAC (Austria, 12/2024)** Absorbed through skin. TWA 8 hours: 50 ppm. TWA 8 hours: 240 mg/m³.
2-butoxyethyl acetate	**Regulation on Limit Values - MAC (Austria, 12/2024)** Absorbed through skin. TWA 8 hours: 20 ppm. TWA 8 hours: 133 mg/m³. PEAK 30 minutes: 40 ppm 4 times per shift. PEAK 30 minutes: 270 mg/m³ 4 times per shift.
1-Methoxy 2-propanol	**Regulation on Limit Values - MAC (Austria, 12/2024)** Absorbed through skin. TWA 8 hours: 50 ppm. TWA 8 hours: 187 mg/m³. CEIL: 50 ppm. CEIL: 187 mg/m³.
2-Butoxyethanol	**Regulation on Limit Values - MAC (Austria, 12/2024)** Absorbed through skin. TWA 8 hours: 20 ppm. TWA 8 hours: 98 mg/m³. PEAK 30 minutes: 40 ppm 4 times per shift. PEAK 30 minutes: 200 mg/m³ 4 times per shift.
Propan-2-ol	**Regulation on Limit Values - MAC (Austria, 12/2024)** TWA 8 hours: 200 ppm. TWA 8 hours: 500 mg/m³. PEAK 15 minutes: 800 ppm 4 times per shift. PEAK 15 minutes: 2000 mg/m³ 4 times per shift.
4-hydroxy-4-methylpentan-2-one	**Limit values (Belgium, 12/2023)** TWA 8 hours: 50 ppm. TWA 8 hours: 241 mg/m³.
2-butoxyethyl acetate	**Limit values (Belgium, 12/2023)** Absorbed through skin. TWA 8 hours: 20 ppm. TWA 8 hours: 133 mg/m³. STEL 15 minutes: 50 ppm. STEL 15 minutes: 333 mg/m³.
1-Methoxy 2-propanol	**Limit values (Belgium, 12/2023)** Absorbed through skin. TWA 8 hours: 50 ppm. TWA 8 hours: 184 mg/m³. STEL 15 minutes: 100 ppm. STEL 15 minutes: 369 mg/m³.
2-Butoxyethanol	**Limit values (Belgium, 12/2023)** Absorbed through skin. TWA 8 hours: 20 ppm. TWA 8 hours: 98 mg/m³. STEL 15 minutes: 50 ppm. STEL 15 minutes: 246 mg/m³.
Propan-2-ol	**Limit values (Belgium, 12/2023)** TWA 8 hours: 200 ppm. TWA 8 hours: 500 mg/m³. STEL 15 minutes: 400 ppm. STEL 15 minutes: 1000 mg/m³.

2-butoxyethyl acetate	**Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 13/2003. (Bulgaria, 4/2024)** Absorbed through skin. Limit value 8 hours: 133 mg/m³. Limit value 15 minutes: 333 mg/m³. Limit value 8 hours: 20 ppm. Limit value 15 minutes: 50 ppm.
1-Methoxy 2-propanol	**Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 13/2003. (Bulgaria, 4/2024)** Absorbed through skin. Limit value 8 hours: 375 mg/m³. Limit value 15 minutes: 568 mg/m³. Limit value 15 minutes: 150 ppm. Limit value 8 hours: 100 ppm.
2-Butoxyethanol	**Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 13/2003. (Bulgaria, 4/2024)** Absorbed through skin. Limit value 8 hours: 98 mg/m³. Limit value 15 minutes: 246 mg/m³. Limit value 15 minutes: 50 ppm. Limit value 8 hours: 20 ppm.
Propan-2-ol	**Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 13/2003. (Bulgaria, 4/2024)** Limit value 8 hours: 980 mg/m³. Limit value 15 minutes: 1225 mg/m³.
4-hydroxy-4-methylpentan-2-one	**Ordinance on the protection of workers from exposure to hazardous chemicals at work, exposure limit values (Annex I) (Croatia, 12/2023)** STELV 15 minutes: 362 mg/m³. STELV 15 minutes: 75 ppm. ELV 8 hours: 241 mg/m³. ELV 8 hours: 50 ppm.
2-butoxyethyl acetate	**Ordinance on the protection of workers from exposure to hazardous chemicals at work, exposure limit values (Annex I) (Croatia, 12/2023)** Absorbed through skin. STELV 15 minutes: 333 mg/m³. STELV 15 minutes: 50 ppm. ELV 8 hours: 133 mg/m³. ELV 8 hours: 20 ppm.
1-Methoxy 2-propanol	**Ordinance on the protection of workers from exposure to hazardous chemicals at work, exposure limit values (Annex I) (Croatia, 12/2023)** STELV 15 minutes: 568 mg/m³. STELV 15 minutes: 150 ppm. ELV 8 hours: 375 mg/m³. ELV 8 hours: 100 ppm.
2-Butoxyethanol	**Ordinance on the protection of workers from exposure to hazardous chemicals at work, exposure limit values (Annex I) (Croatia, 12/2023)** Absorbed through skin. STELV 15 minutes: 246 mg/m³. STELV 15 minutes: 50 ppm. ELV 8 hours: 98 mg/m³. ELV 8 hours: 20 ppm.
Propan-2-ol	**Ordinance on the protection of workers from exposure to hazardous chemicals at work, exposure limit values (Annex I) (Croatia, 12/2023)** STELV 15 minutes: 1250 mg/m³. STELV 15 minutes: 500 ppm. ELV 8 hours: 999 mg/m³. ELV 8 hours: 400 ppm.

SECTION 8: Exposure controls/personal protection

2-butoxyethyl acetate	**Department of labour inspection (Cyprus, 7/2021)** Absorbed through skin. STEL 15 minutes: 50 ppm. STEL 15 minutes: 333 mg/m³. TWA 8 hours: 20 ppm. TWA 8 hours: 133 mg/m³.
1-Methoxy 2-propanol	**Department of labour inspection (Cyprus, 7/2021)** Absorbed through skin. STEL 15 minutes: 150 ppm. STEL 15 minutes: 568 mg/m³. TWA 8 hours: 100 ppm. TWA 8 hours: 375 mg/m³.
2-Butoxyethanol	**Department of labour inspection (Cyprus, 7/2021)** Absorbed through skin. STEL 15 minutes: 50 ppm. STEL 15 minutes: 246 mg/m³. TWA 8 hours: 20 ppm. TWA 8 hours: 98 mg/m³.
4-hydroxy-4-methylpentan-2-one	**Government regulation of Czech Republic PEL/NPK-P (Czech Republic, 12/2023)** TWA 8 hours: 200 mg/m³. TWA 8 hours: 41.4 ppm. STEL 15 minutes: 300 mg/m³. STEL 15 minutes: 62.1 ppm.
2-butoxyethyl acetate	**Government regulation of Czech Republic PEL/NPK-P (Czech Republic, 12/2023)** Absorbed through skin. TWA 8 hours: 130 mg/m³. TWA 8 hours: 19.5 ppm. STEL 15 minutes: 300 mg/m³. STEL 15 minutes: 45 ppm.
1-Methoxy 2-propanol	**Government regulation of Czech Republic PEL/NPK-P (Czech Republic, 12/2023)** Absorbed through skin. TWA 8 hours: 270 mg/m³. TWA 8 hours: 72.09 ppm. STEL 15 minutes: 550 mg/m³. STEL 15 minutes: 146.84 ppm.
2-Butoxyethanol	**Government regulation of Czech Republic PEL/NPK-P (Czech Republic, 12/2023)** Absorbed through skin. TWA 8 hours: 98 mg/m³. TWA 8 hours: 20 ppm. STEL 15 minutes: 200 mg/m³. STEL 15 minutes: 40.7 ppm.
Propan-2-ol	**Government regulation of Czech Republic PEL/NPK-P (Czech Republic, 12/2023)** TWA 8 hours: 500 mg/m³. TWA 8 hours: 200 ppm. STEL 15 minutes: 1000 mg/m³. STEL 15 minutes: 400 ppm.
4-hydroxy-4-methylpentan-2-one	**Working Environment Authority (Denmark, 12/2024)** TWA 8 hours: 50 ppm. TWA 8 hours: 240 mg/m³. STEL 15 minutes: 480 mg/m³. STEL 15 minutes: 100 ppm.
2-butoxyethyl acetate	**Working Environment Authority (Denmark, 12/2024)** Absorbed through skin. TWA 8 hours: 20 ppm. TWA 8 hours: 134 mg/m³. STEL 15 minutes: 333 mg/m³. STEL 15 minutes: 50 ppm.
1-Methoxy 2-propanol	**Working Environment Authority (Denmark, 12/2024) [1-methoxy-2-propanol]** Absorbed through skin. TWA 8 hours: 50 ppm.

SECTION 8: Exposure controls/personal protection

	TWA 8 hours: 185 mg/m³. STEL 15 minutes: 568 mg/m³. STEL 15 minutes: 150 ppm.
2-Butoxyethanol	**Working Environment Authority (Denmark, 12/2024)** Absorbed through skin. TWA 8 hours: 20 ppm. TWA 8 hours: 98 mg/m³. STEL 15 minutes: 246 mg/m³. STEL 15 minutes: 50 ppm.
Propan-2-ol	**Working Environment Authority (Denmark, 12/2024)** TWA 8 hours: 200 ppm. TWA 8 hours: 490 mg/m³. STEL 15 minutes: 980 mg/m³. STEL 15 minutes: 400 ppm.
4-hydroxy-4-methylpentan-2-one	**Occupational exposure limits, Regulation No. 293 (Estonia, 4/2024)** TWA 8 hours: 120 mg/m³. TWA 8 hours: 25 ppm. STEL 15 minutes: 240 mg/m³. STEL 15 minutes: 50 ppm.
2-butoxyethyl acetate	**Occupational exposure limits, Regulation No. 293 (Estonia, 4/2024)** Absorbed through skin , Sensitiser. TWA 8 hours: 133 mg/m³. TWA 8 hours: 20 ppm. STEL 15 minutes: 333 mg/m³. STEL 15 minutes: 50 ppm.
1-Methoxy 2-propanol	**Occupational exposure limits, Regulation No. 293 (Estonia, 4/2024)** Absorbed through skin , Sensitiser. TWA 8 hours: 375 mg/m³. TWA 8 hours: 100 ppm. STEL 15 minutes: 568 mg/m³. STEL 15 minutes: 150 ppm.
2-Butoxyethanol	**Occupational exposure limits, Regulation No. 293 (Estonia, 4/2024)** Absorbed through skin , Sensitiser. TWA 8 hours: 98 mg/m³. TWA 8 hours: 20 ppm. STEL 15 minutes: 246 mg/m³. STEL 15 minutes: 50 ppm.
Propan-2-ol	**Occupational exposure limits, Regulation No. 293 (Estonia, 4/2024)** TWA 8 hours: 350 mg/m³. TWA 8 hours: 150 ppm. STEL 15 minutes: 600 mg/m³. STEL 15 minutes: 250 ppm.
2-butoxyethyl acetate	**EU OEL (Europe, 1/2022)** Absorbed through skin. TWA 8 hours: 20 ppm. TWA 8 hours: 133 mg/m³. STEL 15 minutes: 50 ppm. STEL 15 minutes: 333 mg/m³.
1-Methoxy 2-propanol	**EU OEL (Europe, 1/2022)** Absorbed through skin. TWA 8 hours: 100 ppm. TWA 8 hours: 375 mg/m³. STEL 15 minutes: 150 ppm. STEL 15 minutes: 568 mg/m³.
2-Butoxyethanol	**EU OEL (Europe, 1/2022)** Absorbed through skin. TWA 8 hours: 20 ppm. TWA 8 hours: 98 mg/m³. STEL 15 minutes: 50 ppm. STEL 15 minutes: 246 mg/m³.

SECTION 8: Exposure controls/personal protection

4-hydroxy-4-methylpentan-2-one	**Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021)** TWA 8 hours: 50 ppm. TWA 8 hours: 240 mg/m³. STEL 15 minutes: 75 ppm. STEL 15 minutes: 360 mg/m³.
2-butoxyethyl acetate	**Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021)** Absorbed through skin. TWA 8 hours: 20 ppm. TWA 8 hours: 130 mg/m³. STEL 15 minutes: 50 ppm. STEL 15 minutes: 330 mg/m³.
ethyl (S)-2-hydroxypropionate	**Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021) [Etyylilaktaatti]** TWA 8 hours: 5 ppm. TWA 8 hours: 25 mg/m³. STEL 15 minutes: 10 ppm. STEL 15 minutes: 49 mg/m³.
1-Methoxy 2-propanol	**Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021)** Absorbed through skin. TWA 8 hours: 100 ppm. TWA 8 hours: 370 mg/m³. STEL 15 minutes: 150 ppm. STEL 15 minutes: 560 mg/m³.
2-Butoxyethanol	**Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021)** Absorbed through skin. TWA 8 hours: 20 ppm. TWA 8 hours: 98 mg/m³. STEL 15 minutes: 50 ppm. STEL 15 minutes: 250 mg/m³.
Propan-2-ol	**Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021)** TWA 8 hours: 200 ppm. TWA 8 hours: 500 mg/m³. STEL 15 minutes: 250 ppm. STEL 15 minutes: 620 mg/m³.
4-hydroxy-4-methylpentan-2-one	**Ministry of Labor (France, 6/2024)** TWA 8 hours: 50 ppm. Notes: Permissible limit values (circulars) TWA 8 hours: 240 mg/m³. Notes: Permissible limit values (circulars)
2-butoxyethyl acetate	**Ministry of Labor (France, 6/2024)** Absorbed through skin. STEL 15 minutes: 333 mg/m³. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code) STEL 15 minutes: 50 ppm. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code) TWA 8 hours: 66.5 mg/m³. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code) TWA 8 hours: 10 ppm. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code)
1-Methoxy 2-propanol	**Ministry of Labor (France, 6/2024)** Absorbed through skin. TWA 8 hours: 50 ppm. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code) TWA 8 hours: 188 mg/m³. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code) STEL 15 minutes: 375 mg/m³. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code) STEL 15 minutes: 100 ppm. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code)
2-Butoxyethanol	**Ministry of Labor (France, 6/2024)** Absorbed through skin. TWA 8 hours: 10 ppm. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code) TWA 8 hours: 49 mg/m³. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code)

	STEL 15 minutes: 246 mg/m³. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code) STEL 15 minutes: 50 ppm. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code)
Propan-2-ol	**Ministry of Labor (France, 6/2024)** STEL 15 minutes: 400 ppm. Notes: Permissible limit values (circulars) STEL 15 minutes: 980 mg/m³. Notes: Permissible limit values (circulars)
4-hydroxy-4-methylpentan-2-one	**TRGS 900 OEL (Germany, 6/2024)** Absorbed through skin. TWA 8 hours: 96 mg/m³. PEAK 15 minutes: 192 mg/m³. TWA 8 hours: 20 ppm. PEAK 15 minutes: 40 ppm. **DFG MAC-values list (Germany, 7/2024)** Develop D. Absorbed through skin. TWA 8 hours: 20 ppm. PEAK 15 minutes: 40 ppm 4 times per shift [Interval: 1 hour]. TWA 8 hours: 96 mg/m³. PEAK 15 minutes: 192 mg/m³ 4 times per shift [Interval: 1 hour].
2-butoxyethyl acetate	**TRGS 900 OEL (Germany, 6/2024)** Absorbed through skin. TWA 8 hours: 65 mg/m³. PEAK 15 minutes: 130 mg/m³. TWA 8 hours: 10 ppm. PEAK 15 minutes: 20 ppm. **DFG MAC-values list (Germany, 7/2024)** Develop C. Absorbed through skin. TWA 8 hours: 10 ppm. PEAK 15 minutes: 20 ppm 4 times per shift [Interval: 1 hour]. TWA 8 hours: 66 mg/m³. PEAK 15 minutes: 132 mg/m³ 4 times per shift [Interval: 1 hour].
1-Methoxy 2-propanol	**TRGS 900 OEL (Germany, 6/2024)** TWA 8 hours: 370 mg/m³. PEAK 15 minutes: 740 mg/m³. TWA 8 hours: 100 ppm. PEAK 15 minutes: 200 ppm. **DFG MAC-values list (Germany, 7/2024)** Develop C. TWA 8 hours: 100 ppm. PEAK 15 minutes: 200 ppm 4 times per shift [Interval: 1 hour]. TWA 8 hours: 370 mg/m³. PEAK 15 minutes: 740 mg/m³ 4 times per shift [Interval: 1 hour].
2-Butoxyethanol	**TRGS 900 OEL (Germany, 6/2024)** Absorbed through skin. TWA 8 hours: 49 mg/m³. PEAK 15 minutes: 98 mg/m³. TWA 8 hours: 10 ppm. PEAK 15 minutes: 20 ppm. **DFG MAC-values list (Germany, 7/2024)** Develop C. Absorbed through skin. TWA 8 hours: 10 ppm. PEAK 15 minutes: 20 ppm 4 times per shift [Interval: 1 hour]. TWA 8 hours: 49 mg/m³. PEAK 15 minutes: 98 mg/m³ 4 times per shift [Interval: 1 hour].
Propan-2-ol	**TRGS 900 OEL (Germany, 6/2024)** TWA 8 hours: 500 mg/m³. PEAK 15 minutes: 1000 mg/m³. TWA 8 hours: 200 ppm. PEAK 15 minutes: 400 ppm. **DFG MAC-values list (Germany, 7/2024)** Develop C. TWA 8 hours: 200 ppm. PEAK 15 minutes: 400 ppm 4 times per shift [Interval: 1 hour]. TWA 8 hours: 500 mg/m³. PEAK 15 minutes: 1000 mg/m³ 4 times per shift [Interval: 1 hour].

4-hydroxy-4-methylpentan-2-one	**Presidential Decree 307/1986: Occupational exposure limit values (Greece, 8/2024)** TWA 8 hours: 50 ppm. TWA 8 hours: 240 mg/m³. STEL 15 minutes: 75 ppm. STEL 15 minutes: 360 mg/m³.
2-butoxyethyl acetate	**Presidential Decree 307/1986: Occupational exposure limit values (Greece, 8/2024)** TWA 8 hours: 20 ppm. TWA 8 hours: 135 mg/m³. STEL 15 minutes: 40 ppm. STEL 15 minutes: 270 mg/m³.
1-Methoxy 2-propanol	**Presidential Decree 307/1986: Occupational exposure limit values (Greece, 8/2024)** Absorbed through skin. TWA 8 hours: 100 ppm. TWA 8 hours: 360 mg/m³. STEL 15 minutes: 300 ppm. STEL 15 minutes: 1080 mg/m³.
2-Butoxyethanol	**Presidential Decree 307/1986: Occupational exposure limit values (Greece, 8/2024)** Absorbed through skin. TWA 8 hours: 25 ppm. TWA 8 hours: 120 mg/m³.
Propan-2-ol	**Presidential Decree 307/1986: Occupational exposure limit values (Greece, 8/2024)** TWA 8 hours: 400 ppm. TWA 8 hours: 980 mg/m³. STEL 15 minutes: 500 ppm. STEL 15 minutes: 1225 mg/m³.
2-butoxyethyl acetate	**5/2020. (II. 6.) ITM Decree (Hungary, 1/2025)** Absorbed through skin. TWA 8 hours: 133 mg/m³. PEAK 15 minutes: 333 mg/m³. PEAK 15 minutes: 50 ppm. TWA 8 hours: 20 ppm.
1-Methoxy 2-propanol	**5/2020. (II. 6.) ITM Decree (Hungary, 1/2025)** Absorbed through skin. TWA 8 hours: 375 mg/m³. PEAK 15 minutes: 568 mg/m³. PEAK 15 minutes: 150 ppm. TWA 8 hours: 100 ppm.
2-Butoxyethanol	**5/2020. (II. 6.) ITM Decree (Hungary, 1/2025)** Absorbed through skin. TWA 8 hours: 98 mg/m³. PEAK 15 minutes: 246 mg/m³. PEAK 15 minutes: 50 ppm. TWA 8 hours: 20 ppm.
Propan-2-ol	**5/2020. (II. 6.) ITM Decree (Hungary, 1/2025)** Absorbed through skin. TWA 8 hours: 500 mg/m³. PEAK 15 minutes: 1000 mg/m³. PEAK 15 minutes: 400 ppm. TWA 8 hours: 200 ppm.
4-hydroxy-4-methylpentan-2-one	**Ministry of Welfare, List of Exposure Limits (Iceland, 11/2024)** TWA 8 hours: 240 mg/m³. TWA 8 hours: 50 ppm.
2-butoxyethyl acetate	**Ministry of Welfare, List of Exposure Limits (Iceland, 11/2024)** Absorbed through skin. STEL 15 minutes: 333 mg/m³. STEL 15 minutes: 50 ppm. TWA 8 hours: 133 mg/m³. TWA 8 hours: 20 ppm.
1-Methoxy 2-propanol	**Ministry of Welfare, List of Exposure Limits (Iceland, 11/2024)**

	Absorbed through skin. STEL 15 minutes: 568 mg/m³. STEL 15 minutes: 150 ppm. TWA 8 hours: 185 mg/m³. TWA 8 hours: 50 ppm.
2-Butoxyethanol	**Ministry of Welfare, List of Exposure Limits (Iceland, 11/2024)** Absorbed through skin. STEL 15 minutes: 246 mg/m³. STEL 15 minutes: 50 ppm. TWA 8 hours: 100 mg/m³. TWA 8 hours: 20 ppm.
Propan-2-ol	**Ministry of Welfare, List of Exposure Limits (Iceland, 11/2024)** Absorbed through skin. TWA 8 hours: 490 mg/m³. TWA 8 hours: 200 ppm.
4-hydroxy-4-methylpentan-2-one	**NAOSH (Ireland, 4/2024)** Notes: Advisory Occupational Exposure Limit Values (OELVs) OELV 8 hours: 50 ppm. OELV 8 hours: 240 mg/m³.
2-butoxyethyl acetate	**NAOSH (Ireland, 4/2024)** Absorbed through skin. Notes: EU derived Occupational Exposure Limit Values OELV 8 hours: 20 ppm. OELV 8 hours: 133 mg/m³. OELV 15 minutes: 50 ppm. OELV 15 minutes: 333 mg/m³.
1-Methoxy 2-propanol	**NAOSH (Ireland, 4/2024)** Notes: EU derived Occupational Exposure Limit Values OELV 8 hours: 100 ppm. OELV 8 hours: 375 mg/m³. OELV 15 minutes: 150 ppm. OELV 15 minutes: 568 mg/m³.
2-Butoxyethanol	**NAOSH (Ireland, 4/2024)** Absorbed through skin. Notes: EU derived Occupational Exposure Limit Values OELV 8 hours: 20 ppm. OELV 8 hours: 98 mg/m³. OELV 15 minutes: 50 ppm. OELV 15 minutes: 246 mg/m³.
Propan-2-ol	**NAOSH (Ireland, 4/2024)** Absorbed through skin. Notes: Advisory Occupational Exposure Limit Values (OELVs) OELV 8 hours: 200 ppm. OELV 15 minutes: 400 ppm.
2-butoxyethyl acetate	**Legislative Decree No. 81/2008. Title IX. Protection from chemical agents, carcinogens and mutagens (Italy, 9/2024)** Absorbed through skin. Limit value 8 hours: 20 ppm. Limit value 8 hours: 133 mg/m³. Short Term 15 minutes: 50 ppm. Short Term 15 minutes: 333 mg/m³.
1-Methoxy 2-propanol	**Legislative Decree No. 81/2008. Title IX. Protection from chemical agents, carcinogens and mutagens (Italy, 9/2024)** Absorbed through skin. Limit value 8 hours: 100 ppm. Limit value 8 hours: 375 mg/m³. Short Term 15 minutes: 150 ppm. Short Term 15 minutes: 568 mg/m³.
2-Butoxyethanol	**Legislative Decree No. 81/2008. Title IX. Protection from chemical agents, carcinogens and mutagens (Italy, 9/2024)** Absorbed through skin. Limit value 8 hours: 20 ppm. Limit value 8 hours: 98 mg/m³. Short Term 15 minutes: 50 ppm. Short Term 15 minutes: 246 mg/m³.

2-butoxyethyl acetate	**Ministers Cabinet Regulations Nr.325 - AER (Latvia, 3/2024)** Absorbed through skin. STEL 15 minutes: 50 ppm. TWA 8 hours: 133 mg/m³. TWA 8 hours: 20 ppm. STEL 15 minutes: 333 mg/m³.
1-Methoxy 2-propanol	**Ministers Cabinet Regulations Nr.325 - AER (Latvia, 3/2024)** Absorbed through skin. TWA 8 hours: 100 ppm. STEL 15 minutes: 568 mg/m³. TWA 8 hours: 375 mg/m³. STEL 15 minutes: 150 ppm.
2-Butoxyethanol	**Ministers Cabinet Regulations Nr.325 - AER (Latvia, 3/2024)** Absorbed through skin. TWA 8 hours: 98 mg/m³. TWA 8 hours: 20 ppm. STEL 15 minutes: 50 ppm. STEL 15 minutes: 246 mg/m³.
Propan-2-ol	**Ministers Cabinet Regulations Nr.325 - AER (Latvia, 3/2024)** TWA 8 hours: 350 mg/m³. STEL 15 minutes: 600 mg/m³.
4-hydroxy-4-methylpentan-2-one	**Lithuanian Hygiene Standard HN 23 (Lithuania, 1/2024)** TWA 8 hours: 120 mg/m³. TWA 8 hours: 25 ppm. STEL 15 minutes: 240 mg/m³. STEL 15 minutes: 50 ppm.
2-butoxyethyl acetate	**Lithuanian Hygiene Standard HN 23 (Lithuania, 1/2024)** Absorbed through skin. TWA 8 hours: 70 mg/m³. TWA 8 hours: 10 ppm. STEL 15 minutes: 140 mg/m³. STEL 15 minutes: 20 ppm.
1-Methoxy 2-propanol	**Lithuanian Hygiene Standard HN 23 (Lithuania, 1/2024)** Absorbed through skin. TWA 8 hours: 190 mg/m³. TWA 8 hours: 50 ppm. STEL 15 minutes: 300 mg/m³. STEL 15 minutes: 75 ppm.
2-Butoxyethanol	**Lithuanian Hygiene Standard HN 23 (Lithuania, 1/2024)** Absorbed through skin. TWA 8 hours: 50 mg/m³. TWA 8 hours: 10 ppm. STEL 15 minutes: 100 mg/m³. STEL 15 minutes: 20 ppm.
Propan-2-ol	**Lithuanian Hygiene Standard HN 23 (Lithuania, 1/2024)** TWA 8 hours: 350 mg/m³. TWA 8 hours: 150 ppm. STEL 15 minutes: 600 mg/m³. STEL 15 minutes: 250 ppm.
2-butoxyethyl acetate	**Grand-Duchy Regulation 2016. Chemical agents. Annex I (Luxembourg, 3/2021)** Absorbed through skin. TWA 8 hours: 20 ppm. TWA 8 hours: 133 mg/m³. STEL 15 minutes: 50 ppm. STEL 15 minutes: 333 mg/m³.
1-Methoxy 2-propanol	**Grand-Duchy Regulation 2016. Chemical agents. Annex I (Luxembourg, 3/2021)** Absorbed through skin. TWA 8 hours: 100 ppm. TWA 8 hours: 375 mg/m³. STEL 15 minutes: 150 ppm. STEL 15 minutes: 568 mg/m³.
2-Butoxyethanol	**Grand-Duchy Regulation 2016. Chemical agents. Annex I**

	(Luxembourg, 3/2021) Absorbed through skin. TWA 8 hours: 20 ppm. TWA 8 hours: 98 mg/m³. STEL 15 minutes: 50 ppm. STEL 15 minutes: 246 mg/m³.
2-butoxyethyl acetate	**EU OEL (Europe, 1/2022)** Absorbed through skin. TWA 8 hours: 20 ppm. TWA 8 hours: 133 mg/m³. STEL 15 minutes: 50 ppm. STEL 15 minutes: 333 mg/m³.
1-Methoxy 2-propanol	**EU OEL (Europe, 1/2022)** Absorbed through skin. TWA 8 hours: 100 ppm. TWA 8 hours: 375 mg/m³. STEL 15 minutes: 150 ppm. STEL 15 minutes: 568 mg/m³.
2-Butoxyethanol	**EU OEL (Europe, 1/2022)** Absorbed through skin. TWA 8 hours: 20 ppm. TWA 8 hours: 98 mg/m³. STEL 15 minutes: 50 ppm. STEL 15 minutes: 246 mg/m³.
2-butoxyethyl acetate	**Ministry of Social Affairs and Employment, Legal limit values (Netherlands, 5/2024)** Absorbed through skin. TWA 8 hours: 135 mg/m³. STEL 15 minutes: 333 mg/m³. TWA 8 hours: 20.3 ppm. STEL 15 minutes: 50 ppm.
1-Methoxy 2-propanol	**Ministry of Social Affairs and Employment, Legal limit values (Netherlands, 5/2024)** Absorbed through skin. TWA 8 hours: 375 mg/m³. STEL 15 minutes: 563 mg/m³. TWA 8 hours: 100 ppm. STEL 15 minutes: 150 ppm.
2-Butoxyethanol	**Ministry of Social Affairs and Employment, Legal limit values (Netherlands, 5/2024)** Absorbed through skin. TWA 8 hours: 100 mg/m³. STEL 15 minutes: 246 mg/m³. TWA 8 hours: 20.4 ppm. STEL 15 minutes: 50 ppm.
4-hydroxy-4-methylpentan-2-one	**FOR-2011-12-06-1358 (Norway, 5/2024)** TWA 8 hours: 25 ppm. TWA 8 hours: 120 mg/m³.
2-butoxyethyl acetate	**FOR-2011-12-06-1358 (Norway, 5/2024)** Absorbed through skin. TWA 8 hours: 10 ppm. TWA 8 hours: 65 mg/m³.
1-Methoxy 2-propanol	**FOR-2011-12-06-1358 (Norway, 5/2024)** Absorbed through skin. TWA 8 hours: 50 ppm. TWA 8 hours: 180 mg/m³.
2-Butoxyethanol	**FOR-2011-12-06-1358 (Norway, 5/2024)** Absorbed through skin. TWA 8 hours: 10 ppm. TWA 8 hours: 50 mg/m³.
Propan-2-ol	**FOR-2011-12-06-1358 (Norway, 5/2024)** TWA 8 hours: 100 ppm. TWA 8 hours: 245 mg/m³.
4-hydroxy-4-methylpentan-2-one	**Regulation of the Minister of Family, Labor and Social Policy of June 12, 2018 on the maximum permissible concentrations and intensities of factors harmful to health in the work environment (Journal of Laws of 2018, item 1286) (Poland, 7/2024)** TWA 8 hours: 240 mg/m³.
2-butoxyethyl acetate	**Regulation of the Minister of Family, Labor and Social Policy of June 12, 2018 on the maximum permissible concentrations and intensities of factors harmful to health in the work**

	environment (Journal of Laws of 2018, item 1286) (Poland, 7/2024) Absorbed through skin. TWA 8 hours: 100 mg/m³. STEL 15 minutes: 300 mg/m³.
1-Methoxy 2-propanol	**Regulation of the Minister of Family, Labor and Social Policy of June 12, 2018 on the maximum permissible concentrations and intensities of factors harmful to health in the work environment (Journal of Laws of 2018, item 1286) (Poland, 7/2024)** Absorbed through skin. TWA 8 hours: 180 mg/m³. STEL 15 minutes: 360 mg/m³.
2-Butoxyethanol	**Regulation of the Minister of Family, Labor and Social Policy of June 12, 2018 on the maximum permissible concentrations and intensities of factors harmful to health in the work environment (Journal of Laws of 2018, item 1286) (Poland, 7/2024)** Absorbed through skin. TWA 8 hours: 98 mg/m³. STEL 15 minutes: 200 mg/m³.
Propan-2-ol	**Regulation of the Minister of Family, Labor and Social Policy of June 12, 2018 on the maximum permissible concentrations and intensities of factors harmful to health in the work environment (Journal of Laws of 2018, item 1286) (Poland, 7/2024)** Absorbed through skin. TWA 8 hours: 900 mg/m³. STEL 15 minutes: 1200 mg/m³.
4-hydroxy-4-methylpentan-2-one	**Portuguese Institute of Quality (Portugal, 11/2014)** TWA 8 hours: 50 ppm.
2-butoxyethyl acetate	**Portuguese Institute of Quality (Portugal, 11/2014)** A3. TWA 8 hours: 20 ppm. **Decree-Law 24/2012 - Occupational exposure limits for chemical agents (Portugal, 6/2021)** Absorbed through skin. STEL 15 minutes: 50 ppm. STEL 15 minutes: 333 mg/m³. TWA 8 hours: 20 ppm. TWA 8 hours: 133 mg/m³.
1-Methoxy 2-propanol	**Portuguese Institute of Quality (Portugal, 11/2014)** A4. TWA 8 hours: 50 ppm. STEL 15 minutes: 100 ppm. **Decree-Law 24/2012 - Occupational exposure limits for chemical agents (Portugal, 6/2021)** STEL 15 minutes: 150 ppm. STEL 15 minutes: 568 mg/m³. TWA 8 hours: 100 ppm. TWA 8 hours: 375 mg/m³.
2-Butoxyethanol	**Portuguese Institute of Quality (Portugal, 11/2014)** A3. TWA 8 hours: 20 ppm. **Decree-Law 24/2012 - Occupational exposure limits for chemical agents (Portugal, 6/2021)** Absorbed through skin. STEL 15 minutes: 50 ppm. STEL 15 minutes: 246 mg/m³. TWA 8 hours: 20 ppm. TWA 8 hours: 98 mg/m³.
Propan-2-ol	**Portuguese Institute of Quality (Portugal, 11/2014)** A4. TWA 8 hours: 200 ppm. STEL 15 minutes: 400 ppm.
4-hydroxy-4-methylpentan-2-one	**HG 1218/2006, Annex 1, with subsequent modifications and additions (Romania, 3/2024)** VLA 8 hours: 150 mg/m³. VLA 8 hours: 32 ppm. Short term 15 minutes: 250 mg/m³. Short term 15 minutes: 53 ppm.
2-butoxyethyl acetate	**HG 1218/2006, Annex 1, with subsequent modifications and**

	additions (Romania, 3/2024) Absorbed through skin. VLA 8 hours: 133 mg/m³. VLA 8 hours: 20 ppm. Short term 15 minutes: 333 mg/m³. Short term 15 minutes: 50 ppm.
1-Methoxy 2-propanol	**HG 1218/2006, Annex 1, with subsequent modifications and additions (Romania, 3/2024)** Absorbed through skin. VLA 8 hours: 375 mg/m³. VLA 8 hours: 100 ppm. Short term 15 minutes: 568 mg/m³. Short term 15 minutes: 150 ppm.
2-Butoxyethanol	**HG 1218/2006, Annex 1, with subsequent modifications and additions (Romania, 3/2024)** Absorbed through skin. VLA 8 hours: 98 mg/m³. VLA 8 hours: 20 ppm. Short term 15 minutes: 246 mg/m³. Short term 15 minutes: 50 ppm.
Propan-2-ol	**HG 1218/2006, Annex 1, with subsequent modifications and additions (Romania, 3/2024)** VLA 8 hours: 200 mg/m³. VLA 8 hours: 81 ppm. Short term 15 minutes: 500 mg/m³. Short term 15 minutes: 203 ppm.
2-butoxyethyl acetate	**Government regulation SR c. 355/2006 (Slovakia, 6/2024)** Absorbed through skin , Inhalation sensitiser. TWA 8 hours: 133 mg/m³. TWA 8 hours: 20 ppm. STEL 15 minutes: 333 mg/m³. STEL 15 minutes: 50 ppm.
1-Methoxy 2-propanol	**Government regulation SR c. 355/2006 (Slovakia, 6/2024)** Absorbed through skin , Inhalation sensitiser. TWA 8 hours: 375 mg/m³. TWA 8 hours: 100 ppm. STEL 15 minutes: 568 mg/m³. STEL 15 minutes: 150 ppm.
2-Butoxyethanol	**Government regulation SR c. 355/2006 (Slovakia, 6/2024)** Absorbed through skin , Inhalation sensitiser. TWA 8 hours: 98 mg/m³. TWA 8 hours: 20 ppm. STEL 15 minutes: 246 mg/m³. STEL 15 minutes: 50 ppm.
Propan-2-ol	**Government regulation SR c. 355/2006 (Slovakia, 6/2024)** Inhalation sensitiser. TWA 8 hours: 500 mg/m³. TWA 8 hours: 200 ppm. STEL 15 minutes: 1000 mg/m³. STEL 15 minutes: 400 ppm.
4-hydroxy-4-methylpentan-2-one	**Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 4/2024)** Absorbed through skin. TWA 8 hours: 96 mg/m³. TWA 8 hours: 20 ppm. KTV 15 minutes: 40 ppm 4 times per shift [time between two exposure events at this concentration must be at least 60 minutes]. KTV 15 minutes: 192 mg/m³ 4 times per shift [time between two exposure events at this concentration must be at least 60 minutes].
2-butoxyethyl acetate	**Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 4/2024)** Absorbed through skin. TWA 8 hours: 133 mg/m³. TWA 8 hours: 20 ppm. KTV 15 minutes: 333 mg/m³ 4 times per shift [time between two

	exposure events at this concentration must be at least 60 minutes]. KTV 15 minutes: 50 ppm 4 times per shift [time between two exposure events at this concentration must be at least 60 minutes].
1-Methoxy 2-propanol	**Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 4/2024)** Absorbed through skin. TWA 8 hours: 375 mg/m³. TWA 8 hours: 100 ppm. KTV 15 minutes: 568 mg/m³ 4 times per shift [time between two exposure events at this concentration must be at least 60 minutes]. KTV 15 minutes: 150 ppm 4 times per shift [time between two exposure events at this concentration must be at least 60 minutes].
2-Butoxyethanol	**Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 4/2024)** Absorbed through skin. TWA 8 hours: 98 mg/m³. TWA 8 hours: 20 ppm. KTV 15 minutes: 246 mg/m³ 4 times per shift [time between two exposure events at this concentration must be at least 60 minutes]. KTV 15 minutes: 50 ppm 4 times per shift [time between two exposure events at this concentration must be at least 60 minutes].
Propan-2-ol	**Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 4/2024)** TWA 8 hours: 500 mg/m³. TWA 8 hours: 200 ppm. KTV 15 minutes: 1000 mg/m³ 4 times per shift [time between two exposure events at this concentration must be at least 60 minutes]. KTV 15 minutes: 400 ppm 4 times per shift [time between two exposure events at this concentration must be at least 60 minutes].
4-hydroxy-4-methylpentan-2-one	**National institute of occupational safety and health (Spain, 1/2024)** TWA 8 hours: 50 ppm. TWA 8 hours: 241 mg/m³.
2-butoxyethyl acetate	**National institute of occupational safety and health (Spain, 1/2024)** Absorbed through skin. TWA 8 hours: 20 ppm. TWA 8 hours: 133 mg/m³. STEL 15 minutes: 50 ppm. STEL 15 minutes: 333 mg/m³.
1-Methoxy 2-propanol	**National institute of occupational safety and health (Spain, 1/2024)** Absorbed through skin. TWA 8 hours: 100 ppm. TWA 8 hours: 375 mg/m³. STEL 15 minutes: 150 ppm. STEL 15 minutes: 568 mg/m³.
2-Butoxyethanol	**National institute of occupational safety and health (Spain, 1/2024)** Absorbed through skin. TWA 8 hours: 20 ppm. TWA 8 hours: 98 mg/m³. STEL 15 minutes: 245 mg/m³. STEL 15 minutes: 50 ppm.
Propan-2-ol	**National institute of occupational safety and health (Spain, 1/2024)** TWA 8 hours: 200 ppm. TWA 8 hours: 500 mg/m³. STEL 15 minutes: 400 ppm. STEL 15 minutes: 1000 mg/m³.

4-hydroxy-4-methylpentan-2-one	**Work environment authority Regulation 2018:1 (Sweden, 11/2022)** TWA 8 hours: 25 ppm. TWA 8 hours: 120 mg/m³. STEL 15 minutes: 50 ppm. STEL 15 minutes: 240 mg/m³.
2-butoxyethyl acetate	**Work environment authority Regulation 2018:1 (Sweden, 11/2022)** Absorbed through skin. TWA 8 hours: 10 ppm. TWA 8 hours: 70 mg/m³. STEL 15 minutes: 50 ppm. STEL 15 minutes: 333 mg/m³.
1-Methoxy 2-propanol	**Work environment authority Regulation 2018:1 (Sweden, 11/2022)** Absorbed through skin. STEL 15 minutes: 150 ppm. STEL 15 minutes: 568 mg/m³. TWA 8 hours: 190 mg/m³. TWA 8 hours: 50 ppm.
2-Butoxyethanol	**Work environment authority Regulation 2018:1 (Sweden, 11/2022)** Absorbed through skin. TWA 8 hours: 10 ppm. TWA 8 hours: 50 mg/m³. STEL 15 minutes: 50 ppm. STEL 15 minutes: 246 mg/m³.
Propan-2-ol	**Work environment authority Regulation 2018:1 (Sweden, 11/2022)** TWA 8 hours: 150 ppm. TWA 8 hours: 350 mg/m³. STEL 15 minutes: 250 ppm. STEL 15 minutes: 600 mg/m³.
4-hydroxy-4-methylpentan-2-one	**SUVA (Switzerland, 1/2025)** Absorbed through skin. TWA 8 hours: 20 ppm. TWA 8 hours: 96 mg/m³. STEL 15 minutes: 40 ppm. STEL 15 minutes: 192 mg/m³.
2-butoxyethyl acetate	**SUVA (Switzerland, 1/2025)** Absorbed through skin. TWA 8 hours: 10 ppm. Form: vapour and aerosols. TWA 8 hours: 66 mg/m³. Form: vapour and aerosols. STEL 15 minutes: 20 ppm. Form: vapour and aerosols. STEL 15 minutes: 132 mg/m³. Form: vapour and aerosols.
1-Methoxy 2-propanol	**SUVA (Switzerland, 1/2025)** TWA 8 hours: 100 ppm. TWA 8 hours: 360 mg/m³. STEL 15 minutes: 200 ppm. STEL 15 minutes: 720 mg/m³.
2-Butoxyethanol	**SUVA (Switzerland, 1/2025)** Absorbed through skin. TWA 8 hours: 10 ppm. TWA 8 hours: 49 mg/m³. STEL 15 minutes: 20 ppm. STEL 15 minutes: 98 mg/m³.
Propan-2-ol	**SUVA (Switzerland, 1/2025)** TWA 8 hours: 200 ppm. TWA 8 hours: 500 mg/m³. STEL 15 minutes: 400 ppm. STEL 15 minutes: 1000 mg/m³.
4-hydroxy-4-methylpentan-2-one	**EH40/2005 WELs (United Kingdom (UK), 1/2020)** STEL 15 minutes: 362 mg/m³. STEL 15 minutes: 75 ppm. TWA 8 hours: 241 mg/m³. TWA 8 hours: 50 ppm.
2-butoxyethyl acetate	**EH40/2005 WELs (United Kingdom (UK), 1/2020)** Absorbed through skin.

	TWA 8 hours: 20 ppm. STEL 15 minutes: 50 ppm. STEL 15 minutes: 332 mg/m³. TWA 8 hours: 133 mg/m³.
1-Methoxy 2-propanol	**EH40/2005 WELs (United Kingdom (UK), 1/2020)** Absorbed through skin. STEL 15 minutes: 560 mg/m³. STEL 15 minutes: 150 ppm. TWA 8 hours: 375 mg/m³. TWA 8 hours: 100 ppm.
2-Butoxyethanol	**EH40/2005 WELs (United Kingdom (UK), 1/2020)** Absorbed through skin. STEL 15 minutes: 50 ppm. TWA 8 hours: 25 ppm. STEL 15 minutes: 246 mg/m³. TWA 8 hours: 123 mg/m³.
Propan-2-ol	**EH40/2005 WELs (United Kingdom (UK), 1/2020)** STEL 15 minutes: 1250 mg/m³. STEL 15 minutes: 500 ppm. TWA 8 hours: 999 mg/m³. TWA 8 hours: 400 ppm.

Biological exposure indices

Product/ingredient name	Exposure indices
No exposure indices known.	
No exposure indices known.	
No exposure indices known.	
Propan-2-ol	**Ordinance on the protection of workers from exposure to hazardous chemicals at work, biological limit values (Annex IV) (Croatia, 12/2023)** 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.
No exposure indices known.	
2-butoxyethyl acetate	**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.
2-Butoxyethanol	**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.
No exposure indices known.	
No exposure indices known.	
No exposure indices known.	

No exposure indices known.	
2-butoxyethyl acetate	**Biological limit values (BLV) - Labour Code / ANSES (France, 4/2023) [2- butoxyéthanol et son acétate]** BLV: 100 mg/g Cr, 2-butoxyacetic acid [in urine]. Sampling time: end of shift (regardless of the day of the week).
2-Butoxyethanol	**Biological limit values (BLV) - Labour Code / ANSES (France, 4/2023) [2- butoxyéthanol et son acétate]** BLV: 100 mg/g Cr, 2-butoxyacetic acid [in urine]. Sampling time: end of shift (regardless of the day of the week).
2-butoxyethyl acetate	**DFG BEI-values list (Germany, 7/2024)** Notes: danger from percutaneous absorption (see p. 211 and p. 228). BEI: 150 mg/g creatinine, butoxyacetic acid (after hydrolysis) [in urine]. Sampling time: at the end of the shift, for long-term exposures after several previous shifts. **TRGS 903 - BEI Values (Germany, 10/2024)** BEI: 150 mg/g, butoxy acetic acid (after hydrolysis) [in urine]. Sampling time: at the end of the shift, for long-term exposure after several previous shifts.
1-Methoxy 2-propanol	**DFG BEI-values list (Germany, 7/2024)** 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, 10/2024)** BEI: 15 mg/l, 1-methoxypropan-2-ol [in urine]. Sampling time: end of exposure or end of shift.
2-Butoxyethanol	**DFG BEI-values list (Germany, 7/2024)** Notes: danger from percutaneous absorption (see p. 211 and p. 228). BEI: 150 mg/g creatinine, butoxyacetic acid (after hydrolysis) [in urine]. Sampling time: at the end of the shift, for long-term exposures after several previous shifts. **TRGS 903 - BEI Values (Germany, 10/2024)** BEI: 150 mg/g creatinine, butoxy acetic acid (after hydrolysis) [in urine]. Sampling time: at the end of the shift, for long-term exposure after several previous shifts.
Propan-2-ol	**DFG BEI-values list (Germany, 7/2024)** 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, 10/2024)** 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.
No exposure indices known.	
Propan-2-ol	**5/2020. (II. 6.) ITM Decree (Hungary, 12/2023)** BEI: 430 µmol/l, acetone [in urine]. Sampling time: at the end of the shift. BEI: 25 mg/l, acetone [in urine]. Sampling time: at the end of the shift.
No exposure indices known.	
2-Butoxyethanol	**NAOSH BGVs (Ireland, 1/2011)** BMGV: 200 mg/g creatinine, BAA [in urine]. Sampling time: end of shift - As soon as possible after exposure ceases.
Propan-2-ol	**NAOSH BGVs (Ireland, 1/2011)** BMGV: 40 mg/l, acetone [in urine]. Sampling time: end of shift at end of workweek.

No exposure indices known.	
Propan-2-ol	**Minister Cabinet Regulations No.325 - BEI (Latvia, 3/2024)** BEI: 25 mg/l, acetone [in urine]. Sampling time: at the end of the exposure or at the end of the shift. BEI: 25 mg/l, acetone [in blood]. Sampling time: at the end of the exposure or at the end of the shift.
No exposure indices known.	
No exposure indices known.	
No exposure indices known.	
No exposure indices known.	
No exposure indices known.	
No exposure indices known.	
2-Butoxyethanol	**Portuguese Institute of Quality (Portugal, 11/2014)** BEI: 200 mg/g creatinine, butoxyacetic acid (BAA) [in urine]. Sampling time: end of shift.
Propan-2-ol	**Portuguese Institute of Quality (Portugal, 11/2014)** BEI: 40 mg/l, acetone [in urine]. Sampling time: end of shift at the end of the workweek.
Propan-2-ol	**HG 1218/2006, Annex 2, with subsequent modifications and additions (Romania, 3/2024)** OBLV: 50 mg/l, acetone [in urine]. Sampling time: end of shift.
No exposure indices known.	
2-butoxyethyl acetate	**Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 4/2024)** BAT: 150 mg/g creatinine, butoxyacetic acid (after hydrolysis) [in urine]. Sampling time: at the end of the work shift, at long-term exposure: at the end of the work shift after several consecutive workdays.
1-Methoxy 2-propanol	**Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 4/2024)** BAT: 15 mg/l, 1-methoxypropan-2-ol [in urine]. Sampling time: at the end of the work shift.
2-Butoxyethanol	**Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 4/2024)** BAT: 150 mg/g creatinine, butoxyacetic acid (after hydrolysis) [in urine]. Sampling time: at the end of the work shift, at long-term exposure: at the end of the work shift after several consecutive workdays.
Propan-2-ol	**Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 4/2024)** BAT: 25 mg/l, acetone [in urine]. Sampling time: at the end of the work shift. BAT: 25 mg/l, acetone [in blood]. Sampling time: at the end of the work shift.
2-Butoxyethanol	**National institute of occupational safety and health (Spain, 1/2024)** VLB: 200 mg/g creatinine, butoxyacetic acid [in urine]. Sampling time: end of shift.
Propan-2-ol	**National institute of occupational safety and health (Spain, 1/2024)** VLB: 40 mg/l, acetone [in urine]. Sampling time: end of workweek.
No exposure indices known.	

2-butoxyethyl acetate	**SUVA (Switzerland, 1/2025)** BEI: 150 mg/g creatinine, 2-butoxy acetic acid (after hydrolisis) [in urine]. Sampling time: immediately after exposure or after working hours. In case of long-term exposure: after more than one shift.
1-Methoxy 2-propanol	**SUVA (Switzerland, 1/2025)** BEI: 20 mg/l, 1-methoxypropanol-2 [in urine]. Sampling time: immediately after exposure or after working hours. BEI: 221.9 µmol/l, 1-methoxypropanol-2 [in urine]. Sampling time: immediately after exposure or after working hours.
2-Butoxyethanol	**SUVA (Switzerland, 1/2025)** BEI: 150 mg/g creatinine, 2-butoxy acetic acid (after hydrolisis) [in urine]. Sampling time: immediately after exposure or after working hours. In case of long-term exposure: after more than one shift.
Propan-2-ol	**SUVA (Switzerland, 1/2025)** BEI: 0.4 mmol/l, acetone [in blood]. Sampling time: immediately after exposure or after working hours. BEI: 25 mg/l, acetone [in blood]. Sampling time: immediately after exposure or after working hours. BEI: 0.4 mmol/l, acetone [in urine]. Sampling time: immediately after exposure or after working hours. BEI: 25 mg/l, acetone [in urine]. Sampling time: immediately after exposure or after working hours.
2-Butoxyethanol	**EH40/2005 BMGVs (United Kingdom (UK), 1/2020)** BGV: 240 mmol/mol creatinine, butoxyacetic acid [in urine]. Sampling time: post shift.

Recommended monitoring procedures : Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

Product/ingredient name	Result
4-hydroxy-4-methylpentan-2-one	**DNEL - General population - Long term - Oral** 1.67 mg/kg bw/day Effects: Systemic **DNEL - General population - Long term - Inhalation** 5.8 mg/m³ Effects: Systemic **DNEL - Workers - Long term - Inhalation** 32.6 mg/m³ Effects: Systemic **DNEL - General population - Long term - Dermal** 33 mg/kg bw/day Effects: Systemic **DNEL - Workers - Short term - Inhalation** 240 mg/m³ Effects: Local **DNEL - Workers - Long term - Dermal** 467 mg/kg bw/day Effects: Systemic

2-butoxyethyl acetate

DNEL - General population - Long term - Inhalation
80 mg/m³
Effects: Systemic

DNEL - Workers - Long term - Inhalation
133 mg/m³
Effects: Systemic

DNEL - General population - Short term - Inhalation
200 mg/m³
Effects: Local

DNEL - General population - Long term - Oral
8.6 mg/kg bw/day
Effects: Systemic

DNEL - General population - Short term - Oral
36 mg/kg bw/day
Effects: Systemic

DNEL - General population - Short term - Dermal
72 mg/kg bw/day
Effects: Systemic

DNEL - General population - Long term - Dermal
102 mg/kg bw/day
Effects: Systemic

DNEL - Workers - Short term - Dermal
120 mg/kg bw/day
Effects: Systemic

DNEL - Workers - Long term - Dermal
169 mg/kg bw/day
Effects: Systemic

DNEL - Workers - Short term - Inhalation
333 mg/m³
Effects: Local

1-Methoxy 2-propanol

DNEL - General population - Long term - Oral
33 mg/kg bw/day
Effects: Systemic

DNEL - General population - Long term - Inhalation
43.9 mg/m³
Effects: Systemic

DNEL - General population - Long term - Dermal
78 mg/kg bw/day
Effects: Systemic

DNEL - Workers - Long term - Dermal
183 mg/kg bw/day
Effects: Systemic

DNEL - Workers - Long term - Inhalation
369 mg/m³
Effects: Systemic

DNEL - Workers - Short term - Inhalation
553.5 mg/m³
Effects: Local

DNEL - Workers - Short term - Inhalation

	553.5 mg/m³ Effects: Systemic
2-Butoxyethanol	**DNEL - General population - Long term - Oral** 6.3 mg/kg bw/day Effects: Systemic **DNEL - General population - Short term - Oral** 26.7 mg/kg bw/day Effects: Systemic **DNEL - General population - Long term - Inhalation** 59 mg/m³ Effects: Systemic **DNEL - Workers - Long term - Inhalation** 98 mg/m³ Effects: Systemic **DNEL - General population - Short term - Inhalation** 147 mg/m³ Effects: Local **DNEL - Workers - Short term - Inhalation** 246 mg/m³ Effects: Local **DNEL - General population - Short term - Inhalation** 426 mg/m³ Effects: Systemic **DNEL - Workers - Short term - Inhalation** 1091 mg/m³ Effects: Systemic
Propan-2-ol	**DNEL - Workers - Long term - Inhalation** 500 mg/m³ Effects: Systemic **DNEL - Workers - Long term - Dermal** 888 mg/kg bw/day Effects: Systemic **DNEL - General population - Long term - Oral** 26 mg/kg bw/day Effects: Systemic **DNEL - General population - Short term - Oral** 51 mg/kg bw/day Effects: Systemic **DNEL - General population - Long term - Inhalation** 89 mg/m³ Effects: Systemic **DNEL - General population - Short term - Inhalation** 178 mg/m³ Effects: Systemic **DNEL - General population - Long term - Dermal** 319 mg/kg bw/day Effects: Systemic **DNEL - Workers - Short term - Inhalation** 1000 mg/m³

Effects: Systemic

PNECs

Not 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.

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

SECTION 9: Physical and chemical properties

Odour : Slight

Odour threshold : Not available.

Melting point/freezing point : Not available.

Initial boiling point and boiling range :

Ingredient name	°C	°F	Method
Propan-2-ol	83	181.4	
1-Methoxy 2-propanol	120.17	248.3	OECD 103

Flammability : Not available.

Lower and upper explosion limit : Lower: 2% (Isopropyl alcohol)
Upper: 12% (Isopropyl alcohol)

Flash point : Closed cup: 13°C (55.4°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 available.

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
Propan-2-ol	33.00268	4.4				
1-Methoxy 2-propanol	8.5	1.1				

Relative density : Not available.

Density : 1 g/cm³

Vapour density : Not available.

Particle characteristics

Median particle size : Not applicable.

9.2 Other information

9.2.1 Information with regard to physical hazard classes

Explosive properties : Not available.

Oxidising properties : Not available.

9.2.2 Other safety characteristics

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.

SECTION 10: Stability and reactivity

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
4-hydroxy-4-methylpentan-2-one	**Rat - Oral - LD50** 2520 mg/kg Toxic effects: Behavioral - Tremor Behavioral - Convulsions or effect on seizure threshold Liver - Other changes **Rabbit - Dermal - LD50** 13500 mg/kg
2-butoxyethyl acetate	**Rat - Oral - LD50** 2400 mg/kg Toxic effects: Kidney, Ureter, and Bladder - Hematuria Kidney, Ureter, and Bladder - Other changes in urine composition **Rabbit - Dermal - LD50** 1500 mg/kg Toxic effects: Kidney, Ureter, and Bladder - Hematuria Kidney, Ureter, and Bladder - Other changes in urine composition Blood - Normocytic anemia
1-Methoxy 2-propanol	**Rabbit - Dermal - LD50** 13 g/kg **Rat - Oral - LD50** 6600 mg/kg Toxic effects: Brain and Coverings - Other degenerative changes Behavioral - General anesthetic Lung, Thorax, or Respiration - Dyspnea
Propan-2-ol	**Rabbit - Dermal - LD50** 12800 mg/kg **Rat - Oral - LD50** 5000 mg/kg Toxic effects: Behavioral - General anesthetic

Conclusion/Summary [Product] : Not available.

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)

VARIVA SOLVA 8775-00 WIPE	12121.2	8012.8	N/A	20.0	N/A
4-hydroxy-4-methylpentan-2-one	2520	13500	N/A	N/A	N/A
2-butoxyethyl acetate	2400	1500	N/A	11	N/A
1-Methoxy 2-propanol	6600	13000	N/A	N/A	N/A
2-Butoxyethanol	1200	N/A	N/A	3	N/A
Propan-2-ol	5000	12800	N/A	N/A	N/A

Skin corrosion/irritation

Product/ingredient name	Result
4-hydroxy-4-methylpentan-2-one	**Rabbit - Skin - Mild irritant** Amount/concentration applied: 500 mg
2-butoxyethyl acetate	**Rabbit - Skin - Mild irritant** Amount/concentration applied: 500 mg
1-Methoxy 2-propanol	**Rabbit - Skin - Mild irritant** Amount/concentration applied: 500 mg
2-Butoxyethanol	**Rabbit - Skin - Mild irritant** Amount/concentration applied: 500 mg
Propan-2-ol	**Rabbit - Skin - Mild irritant** Amount/concentration applied: 500 mg

Conclusion/Summary [Product] : Not available.

Serious eye damage/eye irritation

Product/ingredient name	Result
4-hydroxy-4-methylpentan-2-one	**Rabbit - Eyes - Severe irritant** Amount/concentration applied: 20 mg **Rabbit - Eyes - Severe irritant** Duration of treatment/exposure: 24 hours Amount/concentration applied: 100 uL
2-butoxyethyl acetate	**Rabbit - Eyes - Mild irritant** Duration of treatment/exposure: 24 hours Amount/concentration applied: 500 mg
1-Methoxy 2-propanol	**Rabbit - Eyes - Mild irritant** Duration of treatment/exposure: 24 hours Amount/concentration applied: 500 mg
2-Butoxyethanol	**Rabbit - Eyes - Moderate irritant** Duration of treatment/exposure: 24 hours Amount/concentration applied: 100 mg **Rabbit - Eyes - Severe irritant** Amount/concentration applied: 100 mg
Propan-2-ol	**Rabbit - Eyes - Moderate irritant** Duration of treatment/exposure: 24 hours Amount/concentration applied: 100 mg **Rabbit - Eyes - Moderate irritant** Amount/concentration applied: 10 mg **Rabbit - Eyes - Severe irritant** Amount/concentration applied: 100 mg

Conclusion/Summary [Product] : Not available.

SECTION 11: Toxicological information

Respiratory corrosion/irritation

Not available.

Conclusion/Summary [Product] : Not available.

Respiratory or skin sensitization

Not available.

Skin

Conclusion/Summary [Product] : Not available.

Respiratory

Conclusion/Summary [Product] : Not available.

Germ cell mutagenicity

Not available.

Conclusion/Summary [Product] : Not available.

Carcinogenicity

Not available.

Conclusion/Summary [Product] : Not available.

Reproductive toxicity

Not available.

Conclusion/Summary [Product] : Not available.

Specific target organ toxicity (single exposure)

Product/ingredient name	Result
4-hydroxy-4-methylpentan-2-one	STOT SE 3, H335 (Respiratory tract irritation)
ethyl (S)-2-hydroxypropionate	STOT SE 3, H335 (Respiratory tract irritation)
1-Methoxy 2-propanol	STOT SE 3, H336 (Narcotic effects)
Propan-2-ol	STOT SE 3, H336 (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 : Harmful if inhaled. Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation.

Skin contact : No known significant effects or critical hazards.

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

Symptoms related to the physical, chemical and toxicological characteristics

SECTION 11: Toxicological information

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

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
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 [Product] : Not available.

General : No known significant effects or critical hazards.

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.

Conclusion/Summary [Product] : The product does not meet the criteria to be considered as having endocrine disrupting properties according to the criteria set out in either Regulation (EC) No. 1907/2006 or Regulation (EC) No 1272/2008.

11.2.2 Other information

Not available.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result
2-Butoxyethanol	**Acute - LC50 - Marine water** Fish - Inland silverside - *Menidia beryllina* Size: 40 to 100 mm 1250000 µg/l [96 hours] Effect: Mortality **Acute - LC50 - Marine water** Crustaceans - Common shrimp, sand shrimp - *Crangon crangon* 800000 µg/l [48 hours] Effect: Mortality

Propan-2-ol

Acute - LC50 - Marine water
Crustaceans - Common shrimp, sand shrimp - *Crangon crangon*
1400000 µg/l [48 hours]
Effect: Mortality

Acute - LC50 - Fresh water
Fish - Harlequinfish, red rasbora - *Rasbora heteromorpha*
Size: 1 to 3 cm
4200000 µg/l [96 hours]
Effect: Mortality

Conclusion/Summary [Product] : Not available.

12.2 Persistence and degradability

Not available.

Conclusion/Summary [Product] : Not available.

12.3 Bioaccumulative potential

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

12.4 Mobility in soil

Soil/water partition coefficient

Product/ingredient name	logKoc	Koc
4-hydroxy-4-methylpentan-2-one	1.2	15.2986
2-butoxyethyl acetate	2.1	112.842
ethyl (S)-2-hydroxypropionate	1.3	17.9589
1-Methoxy 2-propanol	1	10.447
2-Butoxyethanol	1.8	67.3685
Propan-2-ol	0.54	3.4364

Results of PMT and vPvM assessment

Product/ingredient name	PMT	P	M	T	vPvM	vP	vM
4-hydroxy-4-methylpentan-2-one	No	No	No	No	No	No	No
2-butoxyethyl acetate	No	No	No	No	No	No	No
ethyl (S)-2-hydroxypropionate	No	No	No	No	No	No	No
1-Methoxy 2-propanol	No	No	No	No	No	No	No
2-Butoxyethanol	No	No	No	No	No	No	No
Propan-2-ol	No	No	No	No	No	No	No

Mobility : Not available.

Conclusion/Summary : The product does not meet the criteria to be considered as a PMT or vPvM.

12.5 Results of PBT and vPvB assessment

Regulation (EC) No. 1907/2006 [REACH]

SECTION 12: Ecological information

Product/ingredient name	PBT	P	B	T	vPvB	vP	vB
4-hydroxy-4-methylpentan-2-one	No	N/A	N/A	No	N/A	N/A	N/A
2-butoxyethyl acetate	No	N/A	N/A	No	N/A	N/A	N/A
ethyl (S) -2-hydroxypropionate	No	N/A	N/A	No	N/A	N/A	N/A
1-Methoxy 2-propanol	No	N/A	N/A	No	N/A	N/A	N/A
2-Butoxyethanol	No	N/A	N/A	No	N/A	N/A	N/A
Propan-2-ol	No	N/A	N/A	No	N/A	N/A	N/A

Regulation (EC) No. 1272/2008 [CLP]

Product/ingredient name	PBT	P	B	T	vPvB	vP	vB
4-hydroxy-4-methylpentan-2-one	No	No	No	No	No	No	No
2-butoxyethyl acetate	No	No	No	No	No	No	No
ethyl (S) -2-hydroxypropionate	No	No	No	No	No	No	No
1-Methoxy 2-propanol	No	No	No	No	No	No	No
2-Butoxyethanol	No	No	No	No	No	No	No
Propan-2-ol	No	No	No	No	No	No	No

Conclusion/Summary Regulation (EC) No. 1272/2008 [CLP] : The product does not meet the criteria to be considered as a PBT or vPvB.

12.6 Endocrine disrupting properties

Not available.

Conclusion/Summary [Product] : The product does not meet the criteria to be considered as having endocrine disrupting properties according to the criteria set out in either Regulation (EC) No. 1907/2006 or Regulation (EC) No 1272/2008.

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.

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	UN1263	UN1263	UN1263	UN1263
14.2 UN proper shipping name	PAINT	PAINT	PAINT	PAINT
14.3 Transport hazard class(es)	3 	3 	3 	3 
14.4 Packing group	II	II	II	II
14.5 Environmental hazards	No.	No.	No.	No.

Additional information

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

ADN : **Special provisions** 640 (C)

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

Product/ingredient name	%	Designation [Usage]
VARIVA SOLVA 8775-00 WIPE	≥90	3

Labelling :

Other EU regulations

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

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

Explosive precursors : Not applicable.

SECTION 15: Regulatory information

Ozone depleting substances (EU 2024/590)

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

VbF class : Category 2

Limitation of the use of organic solvents : Permitted.

Belgium

Czech Republic

Storage code : I

Denmark

Fire class : I-1

Executive Order No. 1795/2015

Ingredient name	Annex I Section A	Annex I Section B
Propan-2-ol	Listed	-

MAL-code : 5-3

Protection based on MAL : **According to the regulations on work involving coded products, the following stipulations apply to the use of personal protective equipment:**

General: Gloves must be worn for all work that may result in soiling. Apron/coveralls/protective clothing must be worn when soiling is so great that regular work clothes do not adequately protect skin against contact with the product. A face shield must be worn in work involving spattering if a full mask is not required. In this case, other recommended use of eye protection is not required.

In all spraying operations in which there is return spray, respiratory protection with air supply and arm protectors/apron/coveralls/protective clothing must be worn as appropriate or as instructed.

MAL-code: 5-3

Application: When spraying in new* booths if the operator is outside the spray zone. During non-atomising spraying in existing* facilities of the combined-cabin, spray-cabin and spray-booth type where the operator is working inside the spray zone. When using scraper or knife, brush, roller, etc. for pre- and post-treatments outside a closed facility, spray booth or spray cabin.

- Air-supplied full mask must be worn.

When using scraper or knife, brush, roller, etc, for pre- and post-treatments in cabins or booths of the existing* facility type, if the operator is inside the spray zone. During downtimes, cleaning and repair in closed facilities, spray booths or cabins, if there is a risk of contact with wet paint or organic solvents.

- Air-supplied full mask and coveralls must be worn.

When spraying in existing* spray booths, if the operator is outside the spray zone.

- Air-supplied full mask, arm protectors and apron must be worn.

During all spraying where atomisation occurs in cabins or spray booths where the operator is inside the spray zone and during spraying outside a closed facility, cabin or booth.

- Air-supplied full mask, coveralls and hood must be worn.

Drying: Items for drying/drying ovens that are temporarily placed on such things as rack trolleys, etc, must be equipped with a mechanical exhaust system to prevent fumes from wet items from passing through workers' inhalation zone.

Polishing: When polishing treated surfaces, a mask with dust filter must be worn. When machine grinding, eye protection must be worn. Work gloves must always be worn.

Caution The regulations contain other stipulations in addition to the above.

*See Regulations.

Low-boiling liquids : This product contains low-boiling point liquids. Any respiratory protective equipment should be air-fed.

Restrictions on use : Not to be used by professional users below 18 years of age. See the National Working Environment Authorities Executive Order regarding Young People At Work.

List of undesirable substances : Not listed

Carcinogenic waste : Waste containers must be labeled: Contains a substance or substances regulated by Danish working environment legislation on cancer risks.

Finland

France

Social Security Code, Articles L 461-1 to L 461-7 :

4-hydroxy-4-methylpentan-2-one	RG 84
2-butoxyethyl acetate	RG 84
1-Methoxy 2-propanol	RG 84
2-Butoxyethanol	RG 84
Propan-2-ol	RG 84

Reinforced medical surveillance : Act of July 11, 1977 determining the list of activities which require reinforced medical surveillance: not applicable

Germany

Storage class (TRGS 510) : 3

Hazardous incident ordinance

This product is controlled under the Germany Hazardous Incident Ordinance.

Danger criteria

Category	Reference number
P5c	1.2.5.3

Hazard class for water : 1

Technical instruction on air quality control (TA Luft)

Number [Class]	Description	%
5.2.1	Total dust	9
5.2.5	Organic substances	91
5.2.5 [I]	Organic substances	73
5.2.7.1.3	Reproductive toxic substances	0.016

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

SECTION 15: Regulatory information

Italy

D.Lgs. 152/06 : Not determined.

Netherlands

Water Discharge Policy (ABM) : B(4) Low hazard for aquatic organisms. Decontamination effort: B

Norway

Sweden

Flammable liquid class (SRVFS 2005:10) : 1

Switzerland

VOC content : VOC (w/w): 73%

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	On basis of test data
Acute Tox. 4, H332	Calculation method
Eye Dam. 1, H318	Calculation method
STOT SE 3, H335	Calculation method
STOT SE 3, H336	Calculation method

Full text of abbreviated H statements

SECTION 16: Other information

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.

Full text of classifications [CLP/GHS]

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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Version : 1.02

VARIVA SOLVA 8775-00 WIPE 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.