SAFETY DATA SHEET

KORRO PVB - All variants

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

1.1 Product identifier

Product name : KORRO PVB - 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

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
Skin Irrit. 2, H315
Eye Dam. 1, H318
Skin Sens. 1, H317
STOT SE 3, H335
STOT SE 3, H336
STOT RE 2, H373
Aquatic Chronic 2, H411

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.
H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.
H318 - Causes serious eye damage.
H335 - May cause respiratory irritation.
H336 - May cause drowsiness or dizziness.
H373 - May cause damage to organs through prolonged or repeated exposure.
H411 - Toxic to aquatic life with long lasting effects.

Precautionary statements

SECTION 2: Hazards identification

Prevention : P280 - Wear protective gloves. Wear eye or face protection.
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P273 - Avoid release to the environment.

Response : P391 - Collect spillage.

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; Xylene; iso-butanol and reaction product: bisphenol-A-(epichlorhydrin); epoxy resin

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
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]
Xylene	REACH #: 01-2119488216-32 EC: 215-535-7 CAS: 1330-20-7 Index: 601-022-00-9	≥10 - ≤25	Flam. Liq. 3, H226 Acute Tox. 4, H312 Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335 STOT RE 2, H373 (oral, inhalation) Asp. Tox. 1, H304 Aquatic Chronic 3, H412	ATE [Dermal] = 1100 mg/kg ATE [Inhalation (vapours)] = 11 mg/l	[1] [2]
iso-butanol	REACH #: 01-2119484609-23 EC: 201-148-0 CAS: 78-83-1 Index: 603-108-00-1	≤10	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 3, H335 STOT SE 3, H336	-	[1]
Trizinc bis(orthophosphate)	REACH #: 01-2119485044-40 EC: 231-944-3 CAS: 7779-90-0 Index: 030-011-00-6	≤10	Aquatic Acute 1, H400 Aquatic Chronic 1, H410	M [Acute] = 1 M [Chronic] = 1	[1]

SECTION 3: Composition/information on ingredients

Ethylbenzene	REACH #: 01-2119489370-35 EC: 202-849-4 CAS: 100-41-4 Index: 601-023-00-4	≤5	Flam. Liq. 2, H225 Acute Tox. 4, H332 STOT RE 2, H373 (hearing organs) (oral, inhalation) Asp. Tox. 1, H304 Aquatic Chronic 3, H412	ATE [Inhalation (vapours)] = 11 mg/l	[1] [2]
Urea-formaldehyde-polymer	CAS: 68002-18-6	≤3	Aquatic Chronic 4, H413	-	[1]
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin	EC: 500-033-5 CAS: 25068-38-6	≤3	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317	-	[1]
Butan-1-ol	REACH #: 01-2119484630-38 EC: 200-751-6 CAS: 71-36-3 Index: 603-004-00-6	≤3	Flam. Liq. 3, H226 Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 3, H335 STOT SE 3, H336	ATE [Oral] = 790 mg/kg	[1]
Phenol	REACH #: 01-2119471329-32 EC: 203-632-7 CAS: 108-95-2 Index: 604-001-00-2	≤0.8	Acute Tox. 3, H301 Acute Tox. 3, H311 Acute Tox. 3, H331 Skin Corr. 1B, H314 Eye Dam. 1, H318 Muta. 2, H341 STOT RE 2, H373	ATE [Oral] = 100 mg/kg ATE [Dermal] = 630 mg/kg ATE [Inhalation (vapours)] = 3 mg/l Skin Corr. 1B, H314: C ≥ 3% Skin Irrit. 2, H315: 1% ≤ C < 3% Eye Dam. 1, H318: C ≥ 3% Eye Irrit. 2, H319: 1% ≤ C < 3%	[1] [2]
Zinc oxide	REACH #: 01-2119463881-32 EC: 215-222-5 CAS: 1314-13-2 Index: 030-013-00-7	≤0.3	Aquatic Acute 1, H400 Aquatic Chronic 1, H410	M [Acute] = 1 M [Chronic] = 1	[1]
Fatty acids, tall-oil, compds. with oleylamine	REACH #: 01-2119974148-28 EC: 288-315-1 CAS: 85711-55-3	<0.1	Eye Dam. 1, H318 Skin Sens. 1A, H317 STOT RE 2, H373	-	[1]
Formaldehyde	REACH #: 01-2119488953-20 EC: 200-001-8 CAS: 50-00-0 Index: 605-001-00-5	<0.1	Acute Tox. 4, H302 Acute Tox. 2, H330 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1A, H317 Muta. 2, H341 Carc. 1B, H350 STOT SE 3, H335 EUH071	ATE [Oral] = 500 mg/kg ATE [Inhalation (gases)] = 100 ppm Skin Corr. 1B, H314: C ≥ 25% Skin Irrit. 2, H315: 5% ≤ C < 25% Eye Dam. 1, H318: C ≥ 25% Eye Irrit. 2, H319: 5% ≤ C < 25% STOT SE 3, H335: C ≥ 5%	[1] [2]

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 with plenty of 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. In the event of any complaints or symptoms, avoid further exposure. 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. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous combustion products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
phosphorus oxides
halogenated compounds
metal oxide/oxides

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). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

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). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Avoid release to the environment. 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. 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. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. 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 E2	5000 tonnes 200 tonnes	50000 tonnes 500 tonnes

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
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.
Xylene	**Regulation on Limit Values - MAC (Austria, 12/2024) [Xylol (alle Isomeren, rein)]** PEAK 15 minutes: 442 mg/m³ 4 times per shift. TWA 8 hours: 50 ppm. PEAK 15 minutes: 100 ppm 4 times per shift. TWA 8 hours: 221 mg/m³.
iso-butanol	**Regulation on Limit Values - MAC (Austria, 12/2024) [Butanol (alle Isomeren außer 2-Methyl-2-propanol)]** PEAK 15 minutes: 200 ppm 4 times per shift. TWA 8 hours: 150 mg/m³. TWA 8 hours: 50 ppm. PEAK 15 minutes: 600 mg/m³ 4 times per shift.
Ethylbenzene	**Regulation on Limit Values - MAC (Austria, 12/2024)** Absorbed through skin. TWA 8 hours: 100 ppm. TWA 8 hours: 440 mg/m³. CEIL 5 minutes: 200 ppm 8 times per shift. CEIL 5 minutes: 880 mg/m³ 8 times per shift.
Butan-1-ol	**Regulation on Limit Values - MAC (Austria, 12/2024) [Butanol (alle Isomeren außer 2-Methyl-2-propanol)]** PEAK 15 minutes: 200 ppm 4 times per shift. TWA 8 hours: 150 mg/m³. TWA 8 hours: 50 ppm. PEAK 15 minutes: 600 mg/m³ 4 times per shift.
Phenol	**Regulation on Limit Values - MAC (Austria, 12/2024)** Absorbed through skin. TWA 8 hours: 2 ppm. TWA 8 hours: 8 mg/m³.

	PEAK 15 minutes: 16 mg/m³ 4 times per shift. PEAK 15 minutes: 4 ppm 4 times per shift.
Formaldehyde	**Regulation on Limit Values - MAC (Austria, 12/2024)** Carc A2. Skin sensitiser. TWA 8 hours: 0.3 ppm. TWA 8 hours: 0.37 mg/m³. CEIL: 0.6 ppm. CEIL: 0.74 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.
Xylene	**Limit values (Belgium, 12/2023) [Xyleen]** Absorbed through skin. TWA 8 hours: 50 ppm. TWA 8 hours: 221 mg/m³. STEL 15 minutes: 100 ppm. STEL 15 minutes: 442 mg/m³.
iso-butanol	**Limit values (Belgium, 12/2023)** TWA 8 hours: 50 ppm. TWA 8 hours: 154 mg/m³.
Ethylbenzene	**Limit values (Belgium, 12/2023)** Absorbed through skin. TWA 8 hours: 20 ppm. TWA 8 hours: 87 mg/m³. STEL 15 minutes: 125 ppm. STEL 15 minutes: 551 mg/m³.
Butan-1-ol	**Limit values (Belgium, 12/2023)** Absorbed through skin. TWA 8 hours: 20 ppm. TWA 8 hours: 62 mg/m³.
Phenol	**Limit values (Belgium, 12/2023)** Absorbed through skin. TWA 8 hours: 2 ppm. TWA 8 hours: 8 mg/m³. STEL 15 minutes: 16 mg/m³. STEL 15 minutes: 4 ppm.
Formaldehyde	**Limit values (Belgium, 12/2023)** C. Limit value - M: 0.3 ppm. Limit value - M: 0.38 mg/m³.
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.
Xylene	**Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 13/2003. (Bulgaria, 4/2024) [Xylene]** Absorbed through skin. Limit value 8 hours: 221 mg/m³. Limit value 15 minutes: 442 mg/m³. Limit value 15 minutes: 100 ppm. Limit value 8 hours: 50 ppm.
Ethylbenzene	**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: 435 mg/m³. Limit value 15 minutes: 545 mg/m³.
Butan-1-ol	**Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 13/2003. (Bulgaria, 4/2024)** Limit value 8 hours: 100 mg/m³. Limit value 15 minutes: 150 mg/m³.
Phenol	**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: 8 mg/m³. Limit value 15 minutes: 4 ppm.

SECTION 8: Exposure controls/personal protection

	Limit value 15 minutes: 16 mg/m³. Limit value 8 hours: 2 ppm.
Formaldehyde	**Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 10/2003 (OEL). (Bulgaria, 4/2024)** Skin sensitiser. Limit value 15 minutes: 0.74 mg/m³. Limit value 8 hours: 0.37 mg/m³. Limit value 15 minutes: 0.5 ppm. Form: For the healthcare, funeral and embalming sectors. Limit value 8 hours: 0.62 mg/m³. Form: For the healthcare, funeral and embalming sectors. Limit value 15 minutes: 0.6 ppm. Limit value 8 hours: 0.3 ppm.
Propan-2-ol	**Ordinance on the protection of workers from exposure to hazardous chemicals at work, exposure limit values (Annex I) (Croatia, 1/2025)** STELV 15 minutes: 1250 mg/m³. STELV 15 minutes: 500 ppm. ELV 8 hours: 999 mg/m³. ELV 8 hours: 400 ppm.
Xylene	**Ordinance on the protection of workers from exposure to hazardous chemicals at work, exposure limit values (Annex I) (Croatia, 1/2025) [ksilen]** Absorbed through skin. STELV 15 minutes: 442 mg/m³. STELV 15 minutes: 100 ppm. ELV 8 hours: 221 mg/m³. ELV 8 hours: 50 ppm.
iso-butanol	**Ordinance on the protection of workers from exposure to hazardous chemicals at work, exposure limit values (Annex I) (Croatia, 1/2025)** Absorbed through skin. STELV 15 minutes: 231 mg/m³. STELV 15 minutes: 75 ppm. ELV 8 hours: 154 mg/m³. ELV 8 hours: 50 ppm.
Ethylbenzene	**Ordinance on the protection of workers from exposure to hazardous chemicals at work, exposure limit values (Annex I) (Croatia, 1/2025)** Absorbed through skin. STELV 15 minutes: 884 mg/m³. STELV 15 minutes: 200 ppm. ELV 8 hours: 442 mg/m³. ELV 8 hours: 100 ppm.
Butan-1-ol	**Ordinance on the protection of workers from exposure to hazardous chemicals at work, exposure limit values (Annex I) (Croatia, 1/2025)** Absorbed through skin. STELV 15 minutes: 154 mg/m³. STELV 15 minutes: 50 ppm.
Phenol	**Ordinance on the protection of workers from exposure to hazardous chemicals at work, exposure limit values (Annex I) (Croatia, 1/2025)** Absorbed through skin. ELV 8 hours: 8 mg/m³. ELV 8 hours: 2 ppm. STELV 15 minutes: 16 mg/m³. STELV 15 minutes: 4 ppm.
Formaldehyde	**Ordinance on the protection of workers from exposure to hazardous chemicals at work, exposure limit values (Annex I) (Croatia, 1/2025)** Carc 1B. Skin sensitiser. STELV 15 minutes: 0.74 mg/m³. STELV 15 minutes: 0.6 ppm. ELV 8 hours: 0.37 mg/m³. ELV 8 hours: 0.3 ppm.

Xylene	**Department of labour inspection (Cyprus, 7/2021) [Ξυλένιο, μικτά ισομερή, καθαρά]** Absorbed through skin. STEL 15 minutes: 100 ppm. STEL 15 minutes: 442 mg/m³. TWA 8 hours: 50 ppm. TWA 8 hours: 221 mg/m³.
Ethylbenzene	**Department of labour inspection (Cyprus, 7/2021)** Absorbed through skin. STEL 15 minutes: 884 mg/m³. TWA 8 hours: 100 ppm. TWA 8 hours: 442 mg/m³. STEL 15 minutes: 200 ppm.
Phenol	**Department of labour inspection (Cyprus, 7/2021)** Absorbed through skin. STEL 15 minutes: 4 ppm. STEL 15 minutes: 16 mg/m³. TWA 8 hours: 2 ppm. TWA 8 hours: 8 mg/m³.
Formaldehyde	**EU OEL (Europe, 3/2024)** Skin sensitiser. STEL 15 minutes: 0.6 ppm. STEL 15 minutes: 0.74 mg/m³. TWA 8 hours: 0.3 ppm. TWA 8 hours: 0.37 mg/m³.
Propan-2-ol	**Government regulation of Czech Republic PEL/NPK-P (Czech Republic, 2/2025)** TWA 8 hours: 500 mg/m³. TWA 8 hours: 200 ppm. STEL 15 minutes: 1000 mg/m³. STEL 15 minutes: 400 ppm.
Xylene	**Government regulation of Czech Republic PEL/NPK-P (Czech Republic, 2/2025) [xylen]** Absorbed through skin. TWA 8 hours: 200 mg/m³. TWA 8 hours: 45.33 ppm. STEL 15 minutes: 400 mg/m³. STEL 15 minutes: 90.66 ppm.
iso-butanol	**Government regulation of Czech Republic PEL/NPK-P (Czech Republic, 2/2025) [butanol]** TWA 8 hours: 300 mg/m³. TWA 8 hours: 97 ppm. STEL 15 minutes: 600 mg/m³. STEL 15 minutes: 194 ppm.
Ethylbenzene	**Government regulation of Czech Republic PEL/NPK-P (Czech Republic, 2/2025)** Absorbed through skin. TWA 8 hours: 200 mg/m³. TWA 8 hours: 45.33 ppm. STEL 15 minutes: 500 mg/m³. STEL 15 minutes: 113.32 ppm.
Butan-1-ol	**Government regulation of Czech Republic PEL/NPK-P (Czech Republic, 2/2025) [butanol]** TWA 8 hours: 300 mg/m³. TWA 8 hours: 97 ppm. STEL 15 minutes: 600 mg/m³. STEL 15 minutes: 194 ppm.
Phenol	**Government regulation of Czech Republic PEL/NPK-P (Czech Republic, 2/2025)** Absorbed through skin. TWA 8 hours: 7.5 mg/m³. TWA 8 hours: 1.92 ppm. STEL 15 minutes: 15 mg/m³. STEL 15 minutes: 3.83 ppm.
Formaldehyde	**Government regulation of Czech Republic PEL/NPK-P (Czech Republic, 2/2025)** Carc. Sensitiser. TWA 8 hours: 0.37 mg/m³. TWA 8 hours: 0.3 ppm.

	STEL 15 minutes: 0.74 mg/m³. STEL 15 minutes: 0.6 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.
Xylene	**Working Environment Authority (Denmark, 12/2024) [xylen, alle isomere]** Absorbed through skin. TWA 8 hours: 25 ppm. TWA 8 hours: 109 mg/m³. STEL 15 minutes: 442 mg/m³. STEL 15 minutes: 100 ppm.
iso-butanol	**Working Environment Authority (Denmark, 12/2024) [butanol, alle isomere]** Absorbed through skin. CEIL: 50 ppm. CEIL: 150 mg/m³.
Ethylbenzene	**Working Environment Authority (Denmark, 12/2024)** K. Absorbed through skin. TWA 8 hours: 50 ppm. TWA 8 hours: 217 mg/m³. STEL 15 minutes: 434 mg/m³. STEL 15 minutes: 100 ppm.
Butan-1-ol	**Working Environment Authority (Denmark, 12/2024) [butanol, alle isomere]** Absorbed through skin. CEIL: 50 ppm. CEIL: 150 mg/m³.
Phenol	**Working Environment Authority (Denmark, 12/2024)** Absorbed through skin. TWA 8 hours: 1 ppm. TWA 8 hours: 4 mg/m³. STEL 15 minutes: 16 mg/m³. STEL 15 minutes: 4 ppm.
Formaldehyde	**Working Environment Authority (Denmark, 12/2024)** K. Skin sensitiser. TWA 8 hours: 0.37 mg/m³. TWA 8 hours: 0.3 ppm. STEL 15 minutes: 0.74 mg/m³. STEL 15 minutes: 0.6 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.
Xylene	**Occupational exposure limits, Regulation No. 293 (Estonia, 4/2024) [ksüleen]** Absorbed through skin. TWA 8 hours: 50 ppm. STEL 15 minutes: 100 ppm. STEL 15 minutes: 450 mg/m³. TWA 8 hours: 200 mg/m³.
iso-butanol	**Occupational exposure limits, Regulation No. 293 (Estonia, 4/2024)** TWA 8 hours: 150 mg/m³. TWA 8 hours: 50 ppm.
Ethylbenzene	**Occupational exposure limits, Regulation No. 293 (Estonia, 4/2024)** Absorbed through skin , Sensitiser. TWA 8 hours: 442 mg/m³. TWA 8 hours: 100 ppm. STEL 15 minutes: 884 mg/m³. STEL 15 minutes: 200 ppm.
Butan-1-ol	**Occupational exposure limits, Regulation No. 293 (Estonia,**

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	4/2024) Absorbed through skin. TWA 8 hours: 45 mg/m³. TWA 8 hours: 15 ppm. STEL 5 minutes: 90 mg/m³. STEL 5 minutes: 30 ppm.
Phenol	**Occupational exposure limits, Regulation No. 293 (Estonia, 4/2024)** Absorbed through skin. TWA 8 hours: 8 mg/m³. TWA 8 hours: 2 ppm. STEL 15 minutes: 16 mg/m³. STEL 15 minutes: 4 ppm.
Formaldehyde	**Occupational exposure limits, Regulation No. 293 (Estonia, 4/2024)** Carc. Sensitiser. TWA 8 hours: 0.37 mg/m³. TWA 8 hours: 0.3 ppm. STEL 5 minutes: 0.6 ppm. STEL 5 minutes: 0.74 mg/m³. TWA 8 hours: 0.5 ppm. Form: In the healthcare, funeral and embalming sector. TWA 8 hours: 0.62 mg/m³. Form: In the healthcare, funeral and embalming sector.
Xylene	**EU OEL (Europe, 1/2022) [xylene, mixed isomers]** Absorbed through skin. TWA 8 hours: 50 ppm. TWA 8 hours: 221 mg/m³. STEL 15 minutes: 100 ppm. STEL 15 minutes: 442 mg/m³.
Ethylbenzene	**EU OEL (Europe, 1/2022)** Absorbed through skin. TWA 8 hours: 100 ppm. TWA 8 hours: 442 mg/m³. STEL 15 minutes: 200 ppm. STEL 15 minutes: 884 mg/m³.
Phenol	**EU OEL (Europe, 1/2022)** Absorbed through skin. TWA 8 hours: 2 ppm. TWA 8 hours: 8 mg/m³. STEL 15 minutes: 16 mg/m³. STEL 15 minutes: 4 ppm.
Formaldehyde	**EU OEL (Europe, 3/2024)** Skin sensitiser. STEL 15 minutes: 0.6 ppm. STEL 15 minutes: 0.74 mg/m³. TWA 8 hours: 0.3 ppm. TWA 8 hours: 0.37 mg/m³.
Propan-2-ol	**Institute of Occupational Health, Ministry of Social Affairs (Finland, 2/2025)** TWA 8 hours: 200 ppm. TWA 8 hours: 500 mg/m³. STEL 15 minutes: 250 ppm. STEL 15 minutes: 620 mg/m³.
Xylene	**Institute of Occupational Health, Ministry of Social Affairs (Finland, 2/2025) [Ksyleeni]** Absorbed through skin. STEL 15 minutes: 440 mg/m³. TWA 8 hours: 220 mg/m³. TWA 8 hours: 50 ppm. STEL 15 minutes: 100 ppm.
iso-butanol	**Institute of Occupational Health, Ministry of Social Affairs (Finland, 2/2025)** Absorbed through skin. TWA 8 hours: 50 ppm. TWA 8 hours: 150 mg/m³. STEL 15 minutes: 75 ppm. STEL 15 minutes: 230 mg/m³.
Ethylbenzene	**Institute of Occupational Health, Ministry of Social Affairs (Finland, 2/2025)** Absorbed through skin.

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	TWA 8 hours: 50 ppm. TWA 8 hours: 220 mg/m³. STEL 15 minutes: 200 ppm. STEL 15 minutes: 880 mg/m³.
Butan-1-ol	**Institute of Occupational Health, Ministry of Social Affairs (Finland, 2/2025)** Absorbed through skin. TWA 8 hours: 50 ppm. TWA 8 hours: 150 mg/m³. STEL 15 minutes: 75 ppm. STEL 15 minutes: 230 mg/m³.
Phenol	**Institute of Occupational Health, Ministry of Social Affairs (Finland, 2/2025)** Absorbed through skin. TWA 8 hours: 2 ppm. TWA 8 hours: 8 mg/m³. STEL 15 minutes: 4 ppm. STEL 15 minutes: 16 mg/m³.
Formaldehyde	**Institute of Occupational Health, Ministry of Social Affairs (Finland, 2/2025)** CARC. Skin sensitiser. TWA 8 hours: 0.3 ppm. TWA 8 hours: 0.37 mg/m³. STEL 15 minutes: 0.74 mg/m³. STEL 15 minutes: 0.6 ppm.
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)
Xylene	**Ministry of Labor (France, 6/2024) [xylènes, isomères mixtes, purs]** Absorbed through skin. STEL 15 minutes: 442 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) TWA 8 hours: 221 mg/m³. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code) TWA 8 hours: 50 ppm. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code)
iso-butanol	**Ministry of Labor (France, 6/2024)** TWA 8 hours: 50 ppm. Notes: Permissible limit values (circulars) TWA 8 hours: 150 mg/m³. Notes: Permissible limit values (circulars)
Ethylbenzene	**Ministry of Labor (France, 6/2024)** Absorbed through skin. TWA 8 hours: 20 ppm. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code) TWA 8 hours: 88.4 mg/m³. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code) STEL 15 minutes: 442 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)
Butan-1-ol	**Ministry of Labor (France, 6/2024)** STEL 15 minutes: 50 ppm. Notes: Permissible limit values (circulars) STEL 15 minutes: 150 mg/m³. Notes: Permissible limit values (circulars)
Phenol	**Ministry of Labor (France, 6/2024)** Muta 2. Absorbed through skin. TWA 8 hours: 2 ppm. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code) TWA 8 hours: 7.8 mg/m³. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code) STEL 15 minutes: 15.6 mg/m³. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code)

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	STEL 15 minutes: 4 ppm. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code)
Formaldehyde	**Ministry of Labor (France, 6/2024)** Carc 1B, Muta 2. Skin sensitiser. TWA 8 hours: 0.3 ppm. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code) STEL 15 minutes: 0.6 ppm. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code) STEL 15 minutes: 0.74 mg/m³. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code) TWA 8 hours: 0.37 mg/m³. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code)
Propan-2-ol	**TRGS 900 OEL (Germany, 3/2025)** 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, 7/2025)** 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].
Xylene	**TRGS 900 OEL (Germany, 3/2025) [Xylol]** Absorbed through skin. TWA 8 hours: 220 mg/m³. PEAK 15 minutes: 440 mg/m³. TWA 8 hours: 50 ppm. PEAK 15 minutes: 100 ppm. **DFG MAC-values list (Germany, 7/2025) [Xylene]** Develop D. Absorbed through skin. TWA 8 hours: 50 ppm. PEAK 15 minutes: 100 ppm 4 times per shift [Interval: 1 hour]. TWA 8 hours: 220 mg/m³. PEAK 15 minutes: 440 mg/m³ 4 times per shift [Interval: 1 hour].
iso-butanol	**TRGS 900 OEL (Germany, 3/2025)** TWA 8 hours: 310 mg/m³. PEAK 15 minutes: 310 mg/m³. TWA 8 hours: 100 ppm. PEAK 15 minutes: 100 ppm. **DFG MAC-values list (Germany, 7/2025)** Develop C. TWA 8 hours: 100 ppm. PEAK 15 minutes: 100 ppm 4 times per shift [Interval: 1 hour]. TWA 8 hours: 310 mg/m³. PEAK 15 minutes: 310 mg/m³ 4 times per shift [Interval: 1 hour].
Ethylbenzene	**TRGS 900 OEL (Germany, 3/2025)** Absorbed through skin. TWA 8 hours: 88 mg/m³. PEAK 15 minutes: 176 mg/m³. TWA 8 hours: 20 ppm. PEAK 15 minutes: 40 ppm. **DFG MAC-values list (Germany, 7/2025)** Carc 4, Develop C. Absorbed through skin. PEAK 15 minutes: 40 ppm 4 times per shift [Interval: 1 hour]. PEAK 15 minutes: 176 mg/m³ 4 times per shift [Interval: 1 hour]. TWA 8 hours: 88 mg/m³. TWA 8 hours: 20 ppm.
Butan-1-ol	**TRGS 900 OEL (Germany, 3/2025)** TWA 8 hours: 310 mg/m³. PEAK 15 minutes: 310 mg/m³. TWA 8 hours: 100 ppm. PEAK 15 minutes: 100 ppm. **DFG MAC-values list (Germany, 7/2025)** Develop C. TWA 8 hours: 100 ppm. PEAK 15 minutes: 100 ppm 4 times per shift [Interval: 1 hour]. TWA 8 hours: 310 mg/m³.

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	PEAK 15 minutes: 310 mg/m³ 4 times per shift [Interval: 1 hour].
Phenol	**TRGS 900 OEL (Germany, 3/2025)** Absorbed through skin. TWA 8 hours: 8 mg/m³. TWA 8 hours: 2 ppm. PEAK 15 minutes: 16 mg/m³. PEAK 15 minutes: 4 ppm. **DFG MAC-values list (Germany, 7/2025)** Carc 3B, Muta 3B. Absorbed through skin.
Formaldehyde	**TRGS 900 OEL (Germany, 3/2025)** Skin sensitiser. TWA 8 hours: 0.37 mg/m³. TWA 8 hours: 0.3 ppm. PEAK 15 minutes: 0.6 ppm. PEAK 15 minutes: 0.74 mg/m³. **DFG MAC-values list (Germany, 7/2025)** Carc 4, Muta 5, Develop C. Skin sensitiser. TWA 8 hours: 0.3 ppm. CEIL: 1 ml/m³. TWA 8 hours: 0.37 mg/m³. CEIL: 1.2 mg/m³. PEAK 15 minutes: 0.74 mg/m³ 4 times per shift [Interval: 1 hour]. PEAK 15 minutes: 0.6 ppm 4 times per shift [Interval: 1 hour].
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.
Xylene	**Presidential Decree 307/1986: Occupational exposure limit values (Greece, 8/2024) [ξυλόλια (όλα τα ισομερή)]** Absorbed through skin. TWA 8 hours: 100 ppm. TWA 8 hours: 435 mg/m³. STEL 15 minutes: 150 ppm. STEL 15 minutes: 650 mg/m³.
iso-butanol	**Presidential Decree 307/1986: Occupational exposure limit values (Greece, 8/2024)** TWA 8 hours: 100 ppm. TWA 8 hours: 300 mg/m³. STEL 15 minutes: 100 ppm. STEL 15 minutes: 300 mg/m³.
Ethylbenzene	**Presidential Decree 307/1986: Occupational exposure limit values (Greece, 8/2024)** TWA 8 hours: 100 ppm. TWA 8 hours: 435 mg/m³. STEL 15 minutes: 125 ppm. STEL 15 minutes: 545 mg/m³.
Butan-1-ol	**Presidential Decree 307/1986: Occupational exposure limit values (Greece, 8/2024)** Absorbed through skin. TWA 8 hours: 100 ppm. TWA 8 hours: 300 mg/m³. STEL 15 minutes: 100 ppm. STEL 15 minutes: 300 mg/m³.
Phenol	**Presidential Decree 307/1986: Occupational exposure limit values (Greece, 8/2024)** Absorbed through skin. TWA 8 hours: 2 ppm. TWA 8 hours: 8 mg/m³. STEL 15 minutes: 4 ppm. STEL 15 minutes: 16 mg/m³.
Formaldehyde	**Presidential Decree 307/1986: Occupational exposure limit values (Greece, 8/2024)** Skin sensitiser. TWA 8 hours: 0.3 ppm. TWA 8 hours: 0.37 mg/m³. STEL 15 minutes: 0.6 ppm.

	STEL 15 minutes: 0.74 mg/m³.
Propan-2-ol	**5/2020. (II. 6.) ITM Decree (Hungary, 2/2026)** 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.
Xylene	**5/2020. (II. 6.) ITM Decree (Hungary, 2/2026) [xilol izomerek keveréke]** Absorbed through skin. TWA 8 hours: 221 mg/m³. PEAK 15 minutes: 442 mg/m³. PEAK 15 minutes: 100 ppm. TWA 8 hours: 50 ppm.
Ethylbenzene	**5/2020. (II. 6.) ITM Decree (Hungary, 2/2026)** Absorbed through skin. TWA 8 hours: 442 mg/m³. PEAK 15 minutes: 884 mg/m³. PEAK 15 minutes: 200 ppm. TWA 8 hours: 100 ppm.
Butan-1-ol	**5/2020. (II. 6.) ITM Decree (Hungary, 2/2026)** Absorbed through skin. TWA 8 hours: 45 mg/m³. PEAK 15 minutes: 90 mg/m³.
Phenol	**5/2020. (II. 6.) ITM Decree (Hungary, 2/2026)** Absorbed through skin. TWA 8 hours: 8 mg/m³. PEAK 15 minutes: 16 mg/m³. PEAK 15 minutes: 4 ppm. TWA 8 hours: 2 ppm.
Formaldehyde	**5/2020. (II. 6.) ITM Decree (Hungary, 2/2026)** k(1B). Absorbed through skin , Sensitiser. TWA 8 hours: 0.37 mg/m³. PEAK 15 minutes: 0.74 mg/m³. PEAK 15 minutes: 0.6 ppm. TWA 8 hours: 0.3 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.
Xylene	**Ministry of Welfare, List of Exposure Limits (Iceland, 11/2024) [Xýlen, allir ísómerar]** Absorbed through skin. STEL 15 minutes: 442 mg/m³. STEL 15 minutes: 100 ppm. TWA 8 hours: 109 mg/m³. TWA 8 hours: 25 ppm.
iso-butanol	**Ministry of Welfare, List of Exposure Limits (Iceland, 11/2024) [Bútanól, allir ísomerar nema n-bútanól]** Absorbed through skin. STEL 15 minutes: 150 mg/m³. STEL 15 minutes: 50 ppm.
Ethylbenzene	**Ministry of Welfare, List of Exposure Limits (Iceland, 11/2024)** Absorbed through skin. STEL 15 minutes: 884 mg/m³. STEL 15 minutes: 200 ppm. TWA 8 hours: 200 mg/m³. TWA 8 hours: 50 ppm.
Butan-1-ol	**Ministry of Welfare, List of Exposure Limits (Iceland, 11/2024)** Absorbed through skin. STEL 15 minutes: 150 mg/m³. STEL 15 minutes: 50 ppm. TWA 8 hours: 80 mg/m³. TWA 8 hours: 25 ppm.
Phenol	**Ministry of Welfare, List of Exposure Limits (Iceland, 11/2024)**

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	Absorbed through skin. TWA 8 hours: 4 mg/m³. TWA 8 hours: 1 ppm.
Formaldehyde	**Ministry of Welfare, List of Exposure Limits (Iceland, 11/2024)** K. Absorbed through skin. STEL 15 minutes: 0.74 mg/m³. STEL 15 minutes: 0.6 ppm. TWA 8 hours: 0.37 mg/m³. TWA 8 hours: 0.3 ppm.
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.
Xylene	**NAOSH (Ireland, 4/2024) [xylene]** Absorbed through skin. Notes: EU derived Occupational Exposure Limit Values OELV 8 hours: 50 ppm. OELV 8 hours: 221 mg/m³. OELV 15 minutes: 100 ppm. OELV 15 minutes: 442 mg/m³.
iso-butanol	**NAOSH (Ireland, 4/2024)** Notes: Advisory Occupational Exposure Limit Values (OELVs) OELV 8 hours: 150 ppm. OELV 8 hours: 700 mg/m³.
Ethylbenzene	**NAOSH (Ireland, 4/2024)** Absorbed through skin. Notes: EU derived Occupational Exposure Limit Values OELV 8 hours: 100 ppm. OELV 8 hours: 442 mg/m³. OELV 15 minutes: 200 ppm. OELV 15 minutes: 884 mg/m³.
Butan-1-ol	**NAOSH (Ireland, 4/2024)** Notes: Advisory Occupational Exposure Limit Values (OELVs) OELV 8 hours: 20 ppm.
Phenol	**NAOSH (Ireland, 4/2024)** Absorbed through skin. Notes: EU derived Occupational Exposure Limit Values OELV 8 hours: 2 ppm. OELV 8 hours: 8 mg/m³. OELV 15 minutes: 16 mg/m³. OELV 15 minutes: 4 ppm.
Zinc oxide	**NAOSH (Ireland, 4/2024)** Notes: Advisory Occupational Exposure Limit Values (OELVs) OELV 8 hours: 2 mg/m³. Form: respirable fraction. OELV 15 minutes: 10 mg/m³. Form: fume.
Formaldehyde	**NAOSH (Ireland, 4/2024)** Carc 1B. Sensitiser. Notes: EU derived Occupational Exposure Limit Values OELV 8 hours: 0.3 ppm. OELV 15 minutes: 0.6 ppm. OELV 15 minutes: 0.738 mg/m³. OELV 8 hours: 0.37 mg/m³.
Xylene	**Legislative Decree No. 81/2008. Title IX. Protection from chemical agents, carcinogens and mutagens (Italy, 9/2024) [xilene, isomeri misti, puro]** Absorbed through skin. Limit value 8 hours: 50 ppm. Limit value 8 hours: 221 mg/m³. Short Term 15 minutes: 100 ppm. Short Term 15 minutes: 442 mg/m³.
Ethylbenzene	**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: 442 mg/m³. Short Term 15 minutes: 200 ppm. Short Term 15 minutes: 884 mg/m³.

Phenol	**Legislative Decree No. 81/2008. Title IX. Protection from chemical agents, carcinogens and mutagens (Italy, 9/2024)** Absorbed through skin. Limit value 8 hours: 2 ppm. Limit value 8 hours: 8 mg/m³. Short Term 15 minutes: 4 ppm. Short Term 15 minutes: 16 mg/m³.
Formaldehyde	**Legislative Decree No. 81/2008. Title IX. Protection from chemical agents, carcinogens and mutagens (Italy, 9/2024)** Skin sensitiser. Short Term 15 minutes: 0.6 ppm. Short Term 15 minutes: 0.74 mg/m³. Limit value 8 hours: 0.3 ppm. Limit value 8 hours: 0.37 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.
Xylene	**Ministers Cabinet Regulations Nr.325 - AER (Latvia, 3/2024)** **[Ksilols]** Absorbed through skin. TWA 8 hours: 221 mg/m³. TWA 8 hours: 50 ppm. STEL 15 minutes: 100 ppm. STEL 15 minutes: 442 mg/m³.
iso-butanol	**Ministers Cabinet Regulations Nr.325 - AER (Latvia, 3/2024)** **[Butilspirti]** TWA 8 hours: 10 mg/m³.
Ethylbenzene	**Ministers Cabinet Regulations Nr.325 - AER (Latvia, 3/2024)** Absorbed through skin. TWA 8 hours: 442 mg/m³. TWA 8 hours: 100 ppm. STEL 15 minutes: 200 ppm. STEL 15 minutes: 884 mg/m³.
Butan-1-ol	**Ministers Cabinet Regulations Nr.325 - AER (Latvia, 3/2024)** **[Butilspirti]** TWA 8 hours: 10 mg/m³.
Phenol	**Ministers Cabinet Regulations Nr.325 - AER (Latvia, 3/2024)** Absorbed through skin. TWA 8 hours: 8 mg/m³. TWA 8 hours: 2 ppm. STEL 15 minutes: 4 ppm. STEL 15 minutes: 16 mg/m³.
Formaldehyde	**Ministers Cabinet Regulations No. 803 of 2008 - OEL (Latvia, 3/2024)** Carc. 1B. Skin sensitiser. STEL 15 minutes: 0.6 ppm. STEL 15 minutes: 0.74 mg/m³. TWA 8 hours: 0.3 ppm. TWA 8 hours: 0.37 mg/m³.
Propan-2-ol	**Lithuanian Hygiene Standard HN 23 (Lithuania, 10/2025)** TWA 8 hours: 350 mg/m³. TWA 8 hours: 150 ppm. STEL 15 minutes: 600 mg/m³. STEL 15 minutes: 250 ppm.
Xylene	**Lithuanian Hygiene Standard HN 23 (Lithuania, 10/2025)** **[ksilenas, mišrūs izomerai, grynas]** Absorbed through skin. STEL 15 minutes: 442 mg/m³. TWA 8 hours: 50 ppm. STEL 15 minutes: 100 ppm. TWA 8 hours: 221 mg/m³.
iso-butanol	**Lithuanian Hygiene Standard HN 23 (Lithuania, 10/2025)** Absorbed through skin. TWA 8 hours: 10 mg/m³.
Ethylbenzene	**Lithuanian Hygiene Standard HN 23 (Lithuania, 10/2025)**

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	Absorbed through skin. TWA 8 hours: 442 mg/m³. TWA 8 hours: 100 ppm. STEL 15 minutes: 884 mg/m³. STEL 15 minutes: 200 ppm.
Butan-1-ol	**Lithuanian Hygiene Standard HN 23 (Lithuania, 10/2025)** Absorbed through skin. TWA 8 hours: 45 mg/m³. TWA 8 hours: 15 ppm. CEIL: 90 mg/m³. CEIL: 30 ppm.
Phenol	**Lithuanian Hygiene Standard HN 23 (Lithuania, 10/2025)** Absorbed through skin. TWA 8 hours: 8 mg/m³. TWA 8 hours: 2 ppm. STEL 15 minutes: 16 mg/m³. STEL 15 minutes: 4 ppm.
Zinc oxide	**Lithuanian Hygiene Standard HN 23 (Lithuania, 10/2025)** TWA 8 hours: 5 mg/m³.
Formaldehyde	**Lithuanian Hygiene Standard HN 23 (Lithuania, 10/2025)** Carc. Sensitiser. TWA 8 hours: 0.37 mg/m³. TWA 8 hours: 0.3 ppm. STEL 15 minutes: 0.6 ppm. STEL 15 minutes: 0.74 mg/m³.
Xylene	**Grand-Duchy Regulation 2016. Chemical agents. Annex I (Luxembourg, 3/2021) [xylène Isomères mixtes, pures]** Absorbed through skin. TWA 8 hours: 50 ppm. TWA 8 hours: 221 mg/m³. STEL 15 minutes: 100 ppm. STEL 15 minutes: 442 mg/m³.
Ethylbenzene	**Grand-Duchy Regulation 2016. Chemical agents. Annex I (Luxembourg, 3/2021)** Absorbed through skin. TWA 8 hours: 100 ppm. TWA 8 hours: 442 mg/m³. STEL 15 minutes: 200 ppm. STEL 15 minutes: 884 mg/m³.
Phenol	**Grand-Duchy Regulation 2016. Chemical agents. Annex I (Luxembourg, 3/2021)** Absorbed through skin. TWA 8 hours: 2 ppm. TWA 8 hours: 8 mg/m³. STEL 15 minutes: 4 ppm. STEL 15 minutes: 16 mg/m³.
Formaldehyde	**Grand-Duchy Regulation 2016. Carcinogens or mutagens agents. Annex III (Luxembourg, 3/2025)** Skin sensitiser. STEL 15 minutes: 0.6 ppm. STEL 15 minutes: 0.74 mg/m³. TWA 8 hours: 0.3 ppm. TWA 8 hours: 0.37 mg/m³.
Xylene	**EU OEL (Europe, 1/2022) [xylene, mixed isomers]** Absorbed through skin. TWA 8 hours: 50 ppm. TWA 8 hours: 221 mg/m³. STEL 15 minutes: 100 ppm. STEL 15 minutes: 442 mg/m³.
Ethylbenzene	**EU OEL (Europe, 1/2022)** Absorbed through skin. TWA 8 hours: 100 ppm. TWA 8 hours: 442 mg/m³. STEL 15 minutes: 200 ppm. STEL 15 minutes: 884 mg/m³.
Phenol	**EU OEL (Europe, 1/2022)** Absorbed through skin.

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	TWA 8 hours: 2 ppm. TWA 8 hours: 8 mg/m³. STEL 15 minutes: 16 mg/m³. STEL 15 minutes: 4 ppm.
Formaldehyde	**Ministry of Health (Malta, 4/2024)** Skin sensitiser. TWA 8 hours: 0.3 ppm. TWA 8 hours: 0.37 mg/m³. STEL 15 minutes: 0.74 mg/m³. STEL 15 minutes: 0.6 ppm.
Xylene	**Ministry of Social Affairs and Employment, Legal limit values (Netherlands, 5/2024) [xyleen, o-, m-, p-isomeren]** Absorbed through skin. TWA 8 hours: 210 mg/m³. STEL 15 minutes: 442 mg/m³. STEL 15 minutes: 100 ppm. TWA 8 hours: 47.5 ppm.
Ethylbenzene	**Ministry of Social Affairs and Employment, Legal limit values (Netherlands, 5/2024)** Absorbed through skin. TWA 8 hours: 215 mg/m³. STEL 15 minutes: 430 mg/m³. STEL 15 minutes: 97.3 ppm. TWA 8 hours: 48.6 ppm.
Phenol	**Ministry of Social Affairs and Employment, Legal limit values (Netherlands, 5/2024)** Absorbed through skin. TWA 8 hours: 8 mg/m³. TWA 8 hours: 2 ppm.
Formaldehyde	**Ministry of Social Affairs and Employment, Legal limit values (Netherlands, 5/2024)** Carc B1. Skin sensitiser. TWA 8 hours: 0.15 mg/m³. STEL 15 minutes: 0.5 mg/m³. STEL 15 minutes: 0.41 ppm. TWA 8 hours: 0.12 ppm.
Propan-2-ol	**FOR-2011-12-06-1358 (Norway, 5/2024)** TWA 8 hours: 100 ppm. TWA 8 hours: 245 mg/m³.
Xylene	**FOR-2011-12-06-1358 (Norway, 5/2024) [xylen]** Absorbed through skin. TWA 8 hours: 25 ppm. TWA 8 hours: 108 mg/m³.
iso-butanol	**FOR-2011-12-06-1358 (Norway, 5/2024)** Absorbed through skin. CEIL: 75 mg/m³. CEIL: 25 ppm.
Ethylbenzene	**FOR-2011-12-06-1358 (Norway, 5/2024)** Carc. Absorbed through skin. TWA 8 hours: 5 ppm. TWA 8 hours: 20 mg/m³.
Butan-1-ol	**FOR-2011-12-06-1358 (Norway, 5/2024)** Absorbed through skin. CEIL: 75 mg/m³. CEIL: 25 ppm.
Phenol	**FOR-2011-12-06-1358 (Norway, 5/2024)** Absorbed through skin. TWA 8 hours: 1 ppm. TWA 8 hours: 4 mg/m³. STEL 15 minutes: 12 mg/m³. STEL 15 minutes: 3 ppm.
Formaldehyde	**FOR-2011-12-06-1358 (Norway, 5/2024)** Carc. Sensitiser. TWA 8 hours: 0.3 ppm. TWA 8 hours: 0.37 mg/m³. CEIL: 1 ppm. CEIL: 1.2 mg/m³. STEL 15 minutes: 0.74 mg/m³. STEL 15 minutes: 0.6 ppm.

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.
Xylene	**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) [xylene – mixed isomers (1,2-, 1,3-, 1,4-)]** Absorbed through skin. TWA 8 hours: 100 mg/m³. STEL 15 minutes: 200 mg/m³.
iso-butanol	**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: 200 mg/m³.
Ethylbenzene	**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: 200 mg/m³. STEL 15 minutes: 400 mg/m³.
Butan-1-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: 50 mg/m³. STEL 15 minutes: 150 mg/m³.
Phenol	**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: 7.8 mg/m³. STEL 15 minutes: 16 mg/m³.
Formaldehyde	**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 , Skin sensitiser. TWA 8 hours: 0.37 mg/m³. STEL 15 minutes: 0.74 mg/m³.
Propan-2-ol	**Portuguese Institute of Quality (Portugal, 11/2014)** A4. TWA 8 hours: 200 ppm. STEL 15 minutes: 400 ppm.
Xylene	**Portuguese Institute of Quality (Portugal, 11/2014) [xileno (isómeros o, m & p)]** A4. TWA 8 hours: 100 ppm. STEL 15 minutes: 150 ppm. **Decree-Law 24/2012 - Occupational exposure limits for chemical agents (Portugal, 6/2021) [xilenos]** Absorbed through skin. STEL 15 minutes: 100 ppm. STEL 15 minutes: 442 mg/m³. TWA 8 hours: 50 ppm.

	TWA 8 hours: 221 mg/m³.
iso-butanol	**Portuguese Institute of Quality (Portugal, 11/2014)** TWA 8 hours: 50 ppm.
Ethylbenzene	**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: 200 ppm. STEL 15 minutes: 884 mg/m³. TWA 8 hours: 100 ppm. TWA 8 hours: 442 mg/m³.
Butan-1-ol	**Portuguese Institute of Quality (Portugal, 11/2014)** TWA 8 hours: 20 ppm.
Phenol	**Portuguese Institute of Quality (Portugal, 11/2014)** A4. Absorbed through skin. TWA 8 hours: 5 ppm. **Decree-Law 24/2012 - Occupational exposure limits for chemical agents (Portugal, 6/2021)** Absorbed through skin. STEL 15 minutes: 4 ppm. STEL 15 minutes: 16 mg/m³. TWA 8 hours: 2 ppm. TWA 8 hours: 8 mg/m³.
Formaldehyde	**Portuguese Institute of Quality (Portugal, 11/2014)** A2. Sensitiser. CEIL: 0.3 ppm. **Decree-Law 301/2000 - Occupational exposure limits for carcinogenic and mutagenic agents (Portugal, 5/2025)** Skin sensitiser. STEL 15 minutes: 0.6 ppm. STEL 15 minutes: 0.74 mg/m³. TWA 8 hours: 0.3 ppm. TWA 8 hours: 0.37 mg/m³.
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.
Xylene	**HG 1218/2006, Annex 1, with subsequent modifications and additions (Romania, 3/2024) [xilen]** Absorbed through skin. VLA 8 hours: 221 mg/m³. VLA 8 hours: 50 ppm. Short term 15 minutes: 442 mg/m³. Short term 15 minutes: 100 ppm.
iso-butanol	**HG 1218/2006, Annex 1, with subsequent modifications and additions (Romania, 3/2024)** VLA 8 hours: 100 mg/m³. VLA 8 hours: 33 ppm. Short term 15 minutes: 200 mg/m³. Short term 15 minutes: 66 ppm.
Ethylbenzene	**HG 1218/2006, Annex 1, with subsequent modifications and additions (Romania, 3/2024)** Absorbed through skin. VLA 8 hours: 442 mg/m³. VLA 8 hours: 100 ppm. Short term 15 minutes: 884 mg/m³. Short term 15 minutes: 200 ppm.
Butan-1-ol	**HG 1218/2006, Annex 1, with subsequent modifications and additions (Romania, 3/2024)** VLA 8 hours: 100 mg/m³. VLA 8 hours: 33 ppm. Short term 15 minutes: 200 mg/m³. Short term 15 minutes: 66 ppm.
Phenol	**HG 1218/2006, Annex 1, with subsequent modifications and**

	additions (Romania, 3/2024) M2. Absorbed through skin. VLA 8 hours: 8 mg/m³. VLA 8 hours: 2 ppm. Short term 15 minutes: 4 ppm. Short term 15 minutes: 16 mg/m³.
Formaldehyde	**HG 1218/2006, Annex 1, with subsequent modifications and additions (Romania, 3/2024)** C2. Skin sensitiser. VLA 8 hours: 0.37 mg/m³. VLA 8 hours: 0.3 ppm. Short term 15 minutes: 0.74 mg/m³. Short term 15 minutes: 0.6 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.
Xylene	**Government regulation SR c. 355/2006 (Slovakia, 6/2024) [xylén, zmiešané izoméry]** Absorbed through skin , Inhalation sensitiser. TWA 8 hours: 221 mg/m³. TWA 8 hours: 50 ppm. STEL 15 minutes: 442 mg/m³. STEL 15 minutes: 100 ppm.
iso-butanol	**Government regulation SR c. 355/2006 (Slovakia, 6/2024) [butylalkoholy]** Inhalation sensitiser. TWA 8 hours: 310 mg/m³. TWA 8 hours: 100 ppm.
Ethylbenzene	**Government regulation SR c. 355/2006 (Slovakia, 6/2024)** Absorbed through skin , Inhalation sensitiser. TWA 8 hours: 442 mg/m³. TWA 8 hours: 100 ppm. STEL 15 minutes: 884 mg/m³. STEL 15 minutes: 200 ppm.
Butan-1-ol	**Government regulation SR c. 355/2006 (Slovakia, 6/2024) [butylalkoholy]** Inhalation sensitiser. TWA 8 hours: 310 mg/m³. TWA 8 hours: 100 ppm.
Phenol	**Government regulation SR c. 355/2006 (Slovakia, 6/2024)** Absorbed through skin , Inhalation sensitiser. TWA 8 hours: 8 mg/m³. TWA 8 hours: 2 ppm. STEL 15 minutes: 16 mg/m³. STEL 15 minutes: 4 ppm.
Formaldehyde	**Government regulation SR c. 356/2006 (Slovakia, 9/2020)** Carc 1B. Sensitiser. STEL 15 minutes: 0.74 mg/m³. STEL 15 minutes: 0.6 ppm. Technical guidance value 8 hours: 0.37 mg/m³. Technical guidance value 8 hours: 0.3 ppm.
Propan-2-ol	**Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 4/2025)** 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].
Xylene	**Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 4/2025) [ksilen]** Absorbed through skin. TWA 8 hours: 221 mg/m³.

	TWA 8 hours: 50 ppm. KTV 15 minutes: 442 mg/m³ 4 times per shift [time between two exposure events at this concentration must be at least 60 minutes]. KTV 15 minutes: 100 ppm 4 times per shift [time between two exposure events at this concentration must be at least 60 minutes].
iso-butanol	**Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 4/2025)** TWA 8 hours: 310 mg/m³. TWA 8 hours: 100 ppm. KTV 15 minutes: 310 mg/m³ 4 times per shift [time between two exposure events at this concentration must be at least 60 minutes]. KTV 15 minutes: 100 ppm 4 times per shift [time between two exposure events at this concentration must be at least 60 minutes].
Ethylbenzene	**Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 4/2025)** Absorbed through skin. TWA 8 hours: 442 mg/m³. TWA 8 hours: 100 ppm. KTV 15 minutes: 884 mg/m³ 4 times per shift [time between two exposure events at this concentration must be at least 60 minutes]. KTV 15 minutes: 200 ppm 4 times per shift [time between two exposure events at this concentration must be at least 60 minutes].
Butan-1-ol	**Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 4/2025)** TWA 8 hours: 310 mg/m³. TWA 8 hours: 100 ppm. KTV 15 minutes: 310 mg/m³ 4 times per shift [time between two exposure events at this concentration must be at least 60 minutes]. KTV 15 minutes: 100 ppm 4 times per shift [time between two exposure events at this concentration must be at least 60 minutes].
Phenol	**Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 4/2025)** Muta 2. Absorbed through skin. TWA 8 hours: 8 mg/m³. TWA 8 hours: 2 ppm. KTV 15 minutes: 16 mg/m³ 4 times per shift [time between two exposure events at this concentration must be at least 60 minutes]. KTV 15 minutes: 4 ppm 4 times per shift [time between two exposure events at this concentration must be at least 60 minutes].
Formaldehyde	**Regulation on the protection of workers from the risks related to exposure to carcinogens, mutagens or reprotoxic substances at work (OEL) (Slovenia, 4/2025)** Carc 1B, Muta 2. Absorbed through skin , Skin sensitiser. Peak 15 minutes: 0.6 ppm 4 times per shift [time between two exposure events at this concentration must be at least 60 minutes]. Peak 15 minutes: 0.74 mg/m³ 4 times per shift [time between two exposure events at this concentration must be at least 60 minutes]. TWA 8 hours: 0.3 ppm. TWA 8 hours: 0.37 mg/m³.
Propan-2-ol	**National institute of occupational safety and health (Spain, 3/2025)** TWA 8 hours: 200 ppm. TWA 8 hours: 500 mg/m³. STEL 15 minutes: 400 ppm. STEL 15 minutes: 1000 mg/m³.
Xylene	**National institute of occupational safety and health (Spain, 3/2025) [xileno, mezcla isómeros]** Absorbed through skin. TWA 8 hours: 50 ppm. TWA 8 hours: 221 mg/m³. STEL 15 minutes: 100 ppm. STEL 15 minutes: 442 mg/m³.
iso-butanol	**National institute of occupational safety and health (Spain, 3/2025)**

	TWA 8 hours: 50 ppm. TWA 8 hours: 154 mg/m³.
Ethylbenzene	**National institute of occupational safety and health (Spain, 3/2025)** Absorbed through skin. TWA 8 hours: 100 ppm. TWA 8 hours: 441 mg/m³. STEL 15 minutes: 200 ppm. STEL 15 minutes: 884 mg/m³.
Butan-1-ol	**National institute of occupational safety and health (Spain, 3/2025)** STEL 15 minutes: 50 ppm. STEL 15 minutes: 154 mg/m³. TWA 8 hours: 20 ppm. TWA 8 hours: 61 mg/m³.
Phenol	**National institute of occupational safety and health (Spain, 3/2025)** Absorbed through skin. TWA 8 hours: 2 ppm. TWA 8 hours: 8 mg/m³. STEL 15 minutes: 16 mg/m³. STEL 15 minutes: 4 ppm.
Formaldehyde	**National institute of occupational safety and health (Spain, 3/2025)** Carc 1B. Skin sensitiser. STEL 15 minutes: 0.6 ppm. STEL 15 minutes: 0.74 mg/m³. TWA 8 hours: 0.37 mg/m³. TWA 8 hours: 0.3 ppm.
Propan-2-ol	**Work environment authority Regulation 2023:14 (Sweden, 6/2025)** TWA 8 hours: 150 ppm. TWA 8 hours: 350 mg/m³. STEL 15 minutes: 250 ppm. STEL 15 minutes: 600 mg/m³.
Xylene	**Work environment authority Regulation 2023:14 (Sweden, 6/2025) [xylene]** Absorbed through skin. TWA 8 hours: 50 ppm. TWA 8 hours: 221 mg/m³. STEL 15 minutes: 100 ppm. STEL 15 minutes: 442 mg/m³.
iso-butanol	**Work environment authority Regulation 2023:14 (Sweden, 6/2025)** Absorbed through skin. TWA 8 hours: 50 ppm. TWA 8 hours: 150 mg/m³. STEL 15 minutes: 75 ppm. STEL 15 minutes: 250 mg/m³.
Ethylbenzene	**Work environment authority Regulation 2023:14 (Sweden, 6/2025)** Absorbed through skin. TWA 8 hours: 50 ppm. TWA 8 hours: 220 mg/m³. STEL 15 minutes: 200 ppm. STEL 15 minutes: 884 mg/m³.
Butan-1-ol	**Work environment authority Regulation 2023:14 (Sweden, 6/2025)** Absorbed through skin. TWA 8 hours: 15 ppm. TWA 8 hours: 45 mg/m³. STEL 15 minutes: 30 ppm. STEL 15 minutes: 90 mg/m³.
Phenol	**Work environment authority Regulation 2023:14 (Sweden, 6/2025)** Absorbed through skin. TWA 8 hours: 1 ppm. TWA 8 hours: 4 mg/m³. STEL 15 minutes: 4 ppm. STEL 15 minutes: 16 mg/m³.
Zinc oxide	**Work environment authority Regulation 2023:14 (Sweden,**

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	6/2025) TWA 8 hours: 5 mg/m³. Form: Total dust.
Formaldehyde	**Work environment authority Regulation 2023:14 (Sweden, 6/2025)** Carc. Absorbed through skin , Skin sensitiser. TWA 8 hours: 0.3 ppm. TWA 8 hours: 0.37 mg/m³. STEL 15 minutes: 0.6 ppm. STEL 15 minutes: 0.74 mg/m³.
Propan-2-ol	**SUVA (Switzerland, 7/2025)** TWA 8 hours: 200 ppm. TWA 8 hours: 500 mg/m³. STEL 15 minutes: 400 ppm. STEL 15 minutes: 1000 mg/m³.
Xylene	**SUVA (Switzerland, 7/2025) [Xylol]** Absorbed through skin. TWA 8 hours: 50 ppm. TWA 8 hours: 220 mg/m³. STEL 15 minutes: 100 ppm. STEL 15 minutes: 440 mg/m³.
iso-butanol	**SUVA (Switzerland, 7/2025)** TWA 8 hours: 50 ppm. TWA 8 hours: 150 mg/m³. STEL 15 minutes: 50 ppm. STEL 15 minutes: 150 mg/m³.
Ethylbenzene	**SUVA (Switzerland, 7/2025)** Absorbed through skin , Ototoxicant. TWA 8 hours: 50 ppm. TWA 8 hours: 220 mg/m³. STEL 15 minutes: 50 ppm. STEL 15 minutes: 220 mg/m³.
Butan-1-ol	**SUVA (Switzerland, 7/2025)** TWA 8 hours: 100 ppm. TWA 8 hours: 310 mg/m³. STEL 15 minutes: 100 ppm. STEL 15 minutes: 310 mg/m³.
Phenol	**SUVA (Switzerland, 7/2025)** Muta 2. Absorbed through skin. TWA 8 hours: 5 ppm. Form: vapour and aerosols. TWA 8 hours: 19 mg/m³. Form: vapour and aerosols. STEL 15 minutes: 5 ppm. Form: vapour and aerosols. STEL 15 minutes: 19 mg/m³. Form: vapour and aerosols.
Formaldehyde	**SUVA (Switzerland, 7/2025)** Carc 1B. Sensitiser. TWA 8 hours: 0.3 ppm. TWA 8 hours: 0.37 mg/m³. STEL 15 minutes: 0.6 ppm. STEL 15 minutes: 0.74 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.
Xylene	**EH40/2005 WELs (United Kingdom (UK), 1/2020) [xylene, o-,m-, p- or mixed isomers]** Absorbed through skin. STEL 15 minutes: 441 mg/m³. TWA 8 hours: 50 ppm. TWA 8 hours: 220 mg/m³. STEL 15 minutes: 100 ppm.
iso-butanol	**EH40/2005 WELs (United Kingdom (UK), 1/2020)** STEL 15 minutes: 231 mg/m³. STEL 15 minutes: 75 ppm. TWA 8 hours: 154 mg/m³. TWA 8 hours: 50 ppm.
Ethylbenzene	**EH40/2005 WELs (United Kingdom (UK), 1/2020)** Absorbed through skin. STEL 15 minutes: 552 mg/m³.

	STEL 15 minutes: 125 ppm. TWA 8 hours: 100 ppm. TWA 8 hours: 441 mg/m³.
Butan-1-ol	**EH40/2005 WELs (United Kingdom (UK), 1/2020)** Absorbed through skin. STEL 15 minutes: 154 mg/m³. STEL 15 minutes: 50 ppm.
Phenol	**EH40/2005 WELs (United Kingdom (UK), 1/2020)** Absorbed through skin. TWA 8 hours: 2 ppm. STEL 15 minutes: 16 mg/m³. STEL 15 minutes: 4 ppm. TWA 8 hours: 7.8 mg/m³.
Formaldehyde	**EH40/2005 WELs (United Kingdom (UK), 1/2020)** Carc. STEL 15 minutes: 2.5 mg/m³. STEL 15 minutes: 2 ppm. TWA 8 hours: 2 ppm. TWA 8 hours: 2.5 mg/m³.

Biological exposure indices

Product/ingredient name	Exposure indices
Xylene	**VGU BEI (Austria, 9/2020) [Xylole]** BEI Fitness: 1000 µg/l, xylene [in blood]. Sampling time: one year. BEI Fitness: 1.5 g/l, methylhippuricacid [in urine]. Sampling time: one year.
No exposure indices known.	
Ethylbenzene	**Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 13/2003. (Bulgaria, 4/2024)** Notes: significant skin resorption possible BLV: 2000 mg/g creatinine, mandelic acid and phenylglyoxylic acid – in total [in urine]. Sampling time: at the end of the exposure or at the end of the work shift.
Phenol	**Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 13/2003. (Bulgaria, 4/2024)** BLV: 200 mg/l, phenol [in urine]. Sampling time: at the end of the exposure or at the end of the work shift.
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.
Xylene	**Ordinance on the protection of workers from exposure to hazardous chemicals at work, biological limit values (Annex IV) (Croatia, 12/2023) [ksilen]** BEI: 1.5 mg/l, xylene [in blood]. Sampling time: at the end of the work shift. BEI: 14.13 µmol/l, xylene [in blood]. Sampling time: at the end of the work shift. BEI: 0.88 mol/mol creatinine, methylhippuric acid [in urine]. Sampling time: at the end of the work shift. BEI: 1.5 g/g creatinine, methylhippuric acid [in urine]. Sampling time: at the end of the work shift.
Ethylbenzene	**Ordinance on the protection of workers from exposure to**

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	hazardous chemicals at work, biological limit values (Annex IV) (Croatia, 12/2023) BEI: 1.5 mg/l, ethylbenzene [in blood]. Sampling time: during exposure. BEI: 14.1 µmol/l, ethylbenzene [in blood]. Sampling time: during exposure. BEI: 1.12 mol/mol creatinine, almond acid [in urine]. Sampling time: at the end of the work shift and at the end of the working week. BEI: 1.5 g/g creatinine, almond acid [in urine]. Sampling time: at the end of the work shift and at the end of the working week.
Phenol	**Ordinance on the protection of workers from exposure to hazardous chemicals at work, biological limit values (Annex IV) (Croatia, 12/2023)** BEI: 120 mg/g creatinine, phenol [in urine]. Sampling time: at the end of the work shift. BEI: 0.14 mol/mol creatinine, phenol [in urine]. Sampling time: at the end of the work shift.
No exposure indices known.	
☒ Xylene	**Government regulation of Czech Republic Limit Values of Biological Exposure Tests (Czech Republic, 9/2015) [Xyleny]** Biological limit values: 820 µmol/mmol creatinine, methylhippuric acid [in urine]. Sampling time: end of the shift. Biological limit values: 1400 mg/g creatinine, methylhippuric acid [in urine]. Sampling time: end of the shift.
Ethylbenzene	**Government regulation of Czech Republic Limit Values of Biological Exposure Tests (Czech Republic, 9/2015)** Biological limit values: 1100 µmol/mmol creatinine, almond acid [in urine]. Sampling time: end of the shift. Biological limit values: 1500 mg/g creatinine, almond acid [in urine]. Sampling time: end of the shift.
Phenol	**Government regulation of Czech Republic Limit Values of Biological Exposure Tests (Czech Republic, 9/2015)** Biological limit values: 360 µmol/mmol creatinine, phenol [in urine]. Sampling time: end of the shift. Biological limit values: 300 mg/g creatinine, phenol [in urine]. Sampling time: end of the shift.
No exposure indices known.	
No exposure indices known.	
No exposure indices known.	
☒ Xylene	**Institute of Occupational Health, Ministry of Social Affairs (Finland, 2/2025) [Ksyleeni]** BEI: 5 mmol/l, methylhippuricacid [in urine]. Sampling time: at the end of the work shift.
Ethylbenzene	**Institute of Occupational Health, Ministry of Social Affairs (Finland, 2/2025)** BEI: 5.2 mmol/l, mandelic acid [in urine]. Sampling time: after work shift at the end of the working week or exposure period.
Phenol	**Institute of Occupational Health, Ministry of Social Affairs (Finland, 2/2025) [Fenoli]** BEI: 1.3 mmol/l, total of phenols [in urine]. Sampling time: at the end of the work shift.
No exposure indices known.	

Propan-2-ol	**DFG BEI-values list (Germany, 7/2025)** 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.
Xylene	**DFG BEI-values list (Germany, 7/2025) [Xylene (all isomers)]** Notes: danger from percutaneous absorption (see p. 211 and p. 228). BEI: 1800 mg/g creatinine, methylhippuric acids (=toluric acids) (all isomers) [in urine]. Sampling time: end of exposure or end of shift. **TRGS 903 - BEI Values (Germany, 10/2024) [Xylol alle Isomeren]** BEI: 2000 mg/l, methylhippuric acid [in urine]. Sampling time: end of exposure or end of shift.
Ethylbenzene	**DFG BEI-values list (Germany, 7/2025)** Notes: danger from percutaneous absorption (see p. 211 and p. 228). BEI: 250 mg/g creatinine, mandelic acid plus phenyl glyoxylic acid [in urine]. Sampling time: end of exposure or end of shift. **TRGS 903 - BEI Values (Germany, 10/2024)** BEI: 250 mg/g creatinine, mandelic acid plus phenylglyoxylic acid [in urine]. Sampling time: end of exposure or end of shift.
Butan-1-ol	**DFG BEI-values list (Germany, 7/2025)** BEI: 2 mg/g creatinine, 1-butanol [in urine]. Sampling time: at the beginning of the next shift. BEI: 10 mg/g creatinine, 1-butanol [in urine]. Sampling time: end of exposure or end of shift. **TRGS 903 - BEI Values (Germany, 10/2024)** BEI: 2 mg/g creatinine, butan-1-ol (butanol-1) (after hydrolysis) [in urine]. Sampling time: at the beginning of the next shift. BEI: 10 mg/g creatinine, butan-1-ol (butanol-1) (after hydrolysis) [in urine]. Sampling time: end of exposure or end of shift.
Phenol	**DFG BEI-values list (Germany, 7/2025)** Notes: danger from percutaneous absorption (see p. 211 and p. 228). BGV: 200 mg/l, phenol (after hydrolysis) [in urine]. Sampling time: end of exposure or end of shift. **TRGS 903 - BEI Values (Germany, 10/2024)** BEI: 120 mg/g creatinine, phenol (after hydrolysis) [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.
Xylene	**5/2020. (II. 6.) ITM Decree (Hungary, 12/2023) [xilol]** BEI: 1500 mg/g creatinine, methylhippuric acid [in urine]. Sampling time: at the end of the shift. BEI: 860 µmol/mmol creatinine, methylhippuric acid [in urine]. Sampling time: at the end of the shift.
Ethylbenzene	**5/2020. (II. 6.) ITM Decree (Hungary, 12/2023)** BEI: 1500 mg/g creatinine, mandelic acid [in urine]. Sampling time:

	at the end of the working week; at the end of the shift. BEI: 1110 µmol/mmol creatinine, mandelic acid [in urine]. Sampling time: at the end of the working week; at the end of the shift.
Butan-1-ol	**5/2020. (II. 6.) ITM Decree (Hungary, 12/2023)** BEI: 15 µmol/mmol creatinine, n-butyl-alcohol (after hydrolysis) [in urine]. Sampling time: at the end of the shift. BEI: 10 mg/g creatinine, n-butyl-alcohol (after hydrolysis) [in urine]. Sampling time: at the end of the shift. BEI: 3 µmol/mmol creatinine, n-butyl-alcohol (after hydrolysis) [in urine]. Sampling time: before the next shift. BEI: 2 mg/g creatinine, n-butyl-alcohol (after hydrolysis) [in urine]. Sampling time: before the next shift.
Phenol	**5/2020. (II. 6.) ITM Decree (Hungary, 12/2023)** BEI: 120 mg/g creatinine, phenol [in urine]. Sampling time: at the end of the shift. BEI: 144 µmol/mmol creatinine, phenol [in urine]. Sampling time: at the end of the shift.
No exposure indices known.	
Propan-2-ol	**NAOSH BGVs (Ireland, 1/2011)** BMGV: 40 mg/l, acetone [in urine]. Sampling time: end of shift at end of workweek.
Xylene	**NAOSH BGVs (Ireland, 1/2011) [Xylene]** BMGV: 1.5 g/g creatinine, methylhippuric acids [in urine]. Sampling time: end of shift - As soon as possible after exposure ceases.
Ethylbenzene	**NAOSH BGVs (Ireland, 1/2011)** BMGV: Semi-quantitative, the biological analyte is an indicator of exposure to the substance but the quantitative interpretation of the measurement is ambiguous. These analytes should be used as a screening test if a quantitative test is not practical; or as a confirmatory test if the quantitative test is not specific and the origin of the determinant is in question., ethylbenzene [in endexhaled air]. Sampling time: not critical. BMGV: 0.7 g/g creatinine [Semi-quantitative, the biological analyte is an indicator of exposure to the substance but the quantitative interpretation of the measurement is ambiguous. These analytes should be used as a screening test if a quantitative test is not practical; or as a confirmatory test if the quantitative test is not specific and the origin of the determinant is in question.], mandelic acid and phenylglyoxylic acid [in urine]. Sampling time: end of shift at end of workweek.
Phenol	**NAOSH BGVs (Ireland, 1/2011)** BMGV: 120 mg/g creatinine, phenol [in urine]. Sampling time: end of shift - As soon as possible after exposure ceases.
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.
Xylene	**Minister Cabinet Regulations No.325 - BEI (Latvia, 3/2024) [ksiloli (visi izomēri)]** BEI: 2000 mg/l, methylhippuric (toluric) acid (all isomers) [in urine]. Sampling time: at the end of the exposure or at the end of the shift.
Phenol	**Minister Cabinet Regulations No.325 - BEI (Latvia, 3/2024)**

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	BEI: 120 mg/g creatinine, phenol after hydrolysis [in urine]. Sampling time: 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.	
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.
Xylene	**Portuguese Institute of Quality (Portugal, 11/2014) [Xilenos (graus técnico e comercial)]** BEI: 1.5 g/g creatinine, (o, m, p) -methyl-boronic acids [in urine]. Sampling time: end of shift.
Ethylbenzene	**Portuguese Institute of Quality (Portugal, 11/2014)** BEI: 0.7 g/g creatinine, sum of mandelic acid and phenylglyoxylic acid [in urine]. Sampling time: end of shift.
Phenol	**Portuguese Institute of Quality (Portugal, 11/2014)** BEI: 250 mg/g creatinine, phenol [in urine]. Sampling time: end of shift.
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.
Xylene	**HG 1218/2006, Annex 2, with subsequent modifications and additions (Romania, 3/2024) [xilen]** OBLV: 3 g/l, methylhippuric acid [in urine]. Sampling time: end of shift.
Ethylbenzene	**HG 1218/2006, Annex 2, with subsequent modifications and additions (Romania, 3/2024)** OBLV: 1.5 g/g creatinine, mandelic acid [in urine]. Sampling time: end of the week.
Phenol	**HG 1218/2006, Annex 2, with subsequent modifications and additions (Romania, 3/2024)** OBLV: 120 mg/l, total phenol [in urine]. Sampling time: end of shift.
Xylene	**Government regulation SR c. 355/2006 (Slovakia, 6/2024) [xylén (všetky izoméry)]** BLV: 781 µmol/mmol creatinine, as sum of 2,3,4-methylhippuroic acids [in urine]. Sampling time: at the end of exposure or work shift. BLV: 1334 mg/g creatinine, as sum of 2,3,4-methylhippuroic acids [in urine]. Sampling time: at the end of exposure or work shift. BLV: 10355 µmol/l, as sum of 2,3,4-methylhippuroic acids [in urine]. Sampling time: at the end of exposure or work shift. BLV: 14.6 µmol/l, as xylene [in blood]. Sampling time: at the end of exposure or work shift. BLV: 2000 mg/l, as sum of 2,3,4-methylhippuroic acids [in urine]. Sampling time: at the end of exposure or work shift. BLV: 1.5 mg/l, as xylene [in blood]. Sampling time: at the end of exposure or work shift.
Ethylbenzene	**Government regulation SR c. 355/2006 (Slovakia, 6/2024)** BLV: 799 µmol/mmol creatinine, as mandelic acid and phenylglyoxylic acid [in urine]. Sampling time: at the end of exposure or work shift; long-term exposure: after several work

	shifts. BLV: 7.44 µmol/mmol creatinine, as 2 or 4-etylfenol [in urine]. Sampling time: at the end of exposure or work shift; long-term exposure: after several work shifts. BLV: 1067 mg/g creatinine, as mandelic acid and phenylglyoxylic acid [in urine]. Sampling time: at the end of exposure or work shift; long-term exposure: after several work shifts. BLV: 8.03 mg/g creatinine, as 2 or 4-etylfenol [in urine]. Sampling time: at the end of exposure or work shift; long-term exposure: after several work shifts. BLV: 10590 µmol/l, as mandelic acid and phenylglyoxylic acid [in urine]. Sampling time: at the end of exposure or work shift; long-term exposure: after several work shifts. BLV: 98.6 µmol/l, as 2 or 4-etylfenol [in urine]. Sampling time: at the end of exposure or work shift; long-term exposure: after several work shifts. BLV: 1600 mg/l, as mandelic acid and phenylglyoxylic acid [in urine]. Sampling time: at the end of exposure or work shift; long-term exposure: after several work shifts. BLV: 12 mg/l, as 2 or 4-etylfenol [in urine]. Sampling time: at the end of exposure or work shift; long-term exposure: after several work shifts.
Butan-1-ol	**Government regulation SR c. 355/2006 (Slovakia, 6/2024)** BLV: 15.34 µmol/mmol creatinine, as n-butyl alcohol [in urine]. Sampling time: at the end of exposure or work shift. BLV: 10 mg/g creatinine, as n-butyl alcohol [in urine]. Sampling time: at the end of exposure or work shift. BLV: 3.13 µmol/mmol creatinine, as n-butyl alcohol [in urine]. Sampling time: before the next work shift. BLV: 2 mg/g creatinine, as n-butyl alcohol [in urine]. Sampling time: before the next work shift.
Phenol	**Government regulation SR c. 355/2006 (Slovakia, 6/2024)** BLV: 160.7 µmol/mmol creatinine, as phenol [in urine]. Sampling time: at the end of exposure or work shift. BLV: 133.7 mg/g creatinine, as phenol [in urine]. Sampling time: at the end of exposure or work shift. BLV: 2130 µmol/l, as phenol [in urine]. Sampling time: at the end of exposure or work shift. BLV: 200 mg/l, as phenol [in urine]. Sampling time: at the end of exposure or work shift.
Propan-2-ol	**Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 4/2025)** 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.
Xylene	**Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 4/2025) [ksilen (vse izomere)]** BAT: 2 g/l, methylhippuric acid (all isomers) [in urine]. Sampling time: at the end of the work shift.
Ethylbenzene	**Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 4/2025)** BAT: 250 mg/g creatinine, mandelic acid and phenylglyoxylic acid [in urine]. Sampling time: at the end of the work shift.
Butan-1-ol	**Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 4/2025)** BAT: 10 mg/g creatinine, 1-butanol (after hydrolysis) [in urine].

SECTION 8: Exposure controls/personal protection

	Sampling time: at the end of the work shift. BAT: 2 mg/g creatinine, 1-butanol (after hydrolysis) [in urine]. Sampling time: before the work shift.
Phenol	**Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 4/2025)** BAT: 120 mg/g creatinine, phenol (after hydrolysis) [in urine]. Sampling time: at the end of the work shift.
Propan-2-ol	**National institute of occupational safety and health (Spain, 3/2025)** VLB: 40 mg/l, acetone [in urine]. Sampling time: end of workweek.
Xylene	**National institute of occupational safety and health (Spain, 3/2025) [Xilenos]** VLB: 1 g/g creatinine, methylhippuric acids [in urine]. Sampling time: end of shift.
Ethylbenzene	**National institute of occupational safety and health (Spain, 3/2025)** VLB: 700 mg/g creatinine, sum of mandelic acid and acid and phenylglyoxylic acid [in urine]. Sampling time: end of workweek.
Phenol	**National institute of occupational safety and health (Spain, 3/2025)** VLB: 120 mg/g creatinine, phenol [in urine]. Sampling time: end of shift.
No exposure indices known.	
Propan-2-ol	**SUVA (Switzerland, 7/2025)** 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.
Xylene	**SUVA (Switzerland, 7/2025) [Xylol (alle Isomere)]** BEI: 2 g/l, methyl hippuric acid [in urine]. Sampling time: immediately after exposure or after working hours.
Ethylbenzene	**SUVA (Switzerland, 7/2025)** BEI: 600 mg/g creatinine, mandelic acid + phenylglyoxylic acid [in urine]. Sampling time: immediately after exposure or after working hours.
Butan-1-ol	**SUVA (Switzerland, 7/2025)** BEI: 2 mg/g creatinine, n-butanol [in urine]. Sampling time: before the next shift or 4pm.
Phenol	**SUVA (Switzerland, 7/2025)** BEI: 250 mg/g creatinine, phenol [in urine]. Sampling time: immediately after exposure or after working hours. BEI: 300.5 µmol/mmol creatinine, phenol [in urine]. Sampling time: immediately after exposure or after working hours.
Xylene	**EH40/2005 BMGVs (United Kingdom (UK), 1/2020) [Xylene, o-, m-, p- or mixed isomers]** BGV: 650 mmol/mol creatinine, methyl hippuric acid [in urine]. Sampling time: post shift.

SECTION 8: Exposure controls/personal protection

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
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
Xylene	**DNEL - General population - Long term - Oral** 5 mg/kg bw/day Effects: Systemic **DNEL - General population - Long term - Inhalation** 65.3 mg/m³ Effects: Local **DNEL - General population - Long term - Inhalation** 65.3 mg/m³ Effects: Systemic **DNEL - General population - Long term - Dermal** 125 mg/kg bw/day Effects: Systemic **DNEL - Workers - Long term - Dermal** 212 mg/kg bw/day Effects: Systemic **DNEL - Workers - Long term - Inhalation**

	221 mg/m³ Effects: Local **DNEL - Workers - Long term - Inhalation** 221 mg/m³ Effects: Systemic **DNEL - General population - Short term - Inhalation** 260 mg/m³ Effects: Local **DNEL - General population - Short term - Inhalation** 260 mg/m³ Effects: Systemic **DNEL - Workers - Short term - Inhalation** 442 mg/m³ Effects: Local **DNEL - Workers - Short term - Inhalation** 442 mg/m³ Effects: Systemic
iso-butanol	**DNEL - General population - Long term - Inhalation** 55 mg/m³ Effects: Local **DNEL - Workers - Long term - Inhalation** 310 mg/m³ Effects: Local
Ethylbenzene	**DMEL - Workers - Long term - Inhalation** 442 mg/m³ Effects: Local **DMEL - Workers - Short term - Inhalation** 884 mg/m³ Effects: Systemic **DNEL - General population - Long term - Oral** 1.6 mg/kg bw/day Effects: Systemic **DNEL - General population - Long term - Inhalation** 15 mg/m³ Effects: Systemic **DNEL - Workers - Long term - Inhalation** 77 mg/m³ Effects: Systemic **DNEL - Workers - Long term - Dermal** 180 mg/kg bw/day Effects: Systemic **DNEL - Workers - Short term - Inhalation** 293 mg/m³ Effects: Local
Butan-1-ol	**DNEL - General population - Long term - Oral** 1.5625 mg/kg bw/day Effects: Systemic **DNEL - General population - Long term - Dermal** 3.125 mg/kg bw/day Effects: Systemic

	DNEL - General population - Long term - Inhalation 55.357 mg/m³ Effects: Systemic **DNEL - General population - Long term - Inhalation** 155 mg/m³ Effects: Local **DNEL - Workers - Long term - Inhalation** 310 mg/m³ Effects: Local
Phenol	**DNEL - General population - Long term - Inhalation** 0.452 mg/m³ Effects: Systemic **DNEL - General population - Long term - Oral** 0.5 mg/kg bw/day Effects: Systemic **DNEL - General population - Long term - Dermal** 0.5 mg/kg bw/day Effects: Systemic **DNEL - Workers - Long term - Dermal** 1.23 mg/kg bw/day Effects: Systemic **DNEL - Workers - Long term - Inhalation** 8 mg/m³ Effects: Systemic **DNEL - Workers - Short term - Inhalation** 16 mg/m³ Effects: Local
Fatty acids, tall-oil, compds. with oleylamine	**DNEL - General population - Long term - Oral** 0.012 mg/kg bw/day Effects: Systemic **DNEL - General population - Long term - Dermal** 0.012 mg/kg bw/day Effects: Systemic **DNEL - Workers - Long term - Dermal** 0.024 mg/kg bw/day Effects: Systemic
Formaldehyde	**DNEL - General population - Long term - Dermal** 12 µg/cm² Effects: Local **DNEL - Workers - Long term - Dermal** 37 µg/cm² Effects: Local **DNEL - General population - Long term - Inhalation** 0.1 mg/m³ Effects: Local **DNEL - Workers - Long term - Inhalation** 0.375 mg/m³ Effects: Local

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

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

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

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

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

DNEL - Workers - Long term - Dermal
240 mg/kg bw/day
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. Contaminated work clothing should not be allowed out of the workplace. 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.

Recommendations : Wear suitable gloves tested to EN374.

< 1 hour (breakthrough time):	Nitrile gloves. thickness > 0.3 mm
1 - 4 hours (breakthrough time):	polyvinyl alcohol (PVA) thickness > 0.3 mm or 4H / Silver Shield® gloves.
> 8 hours (breakthrough time):	Viton® thickness > 0.3 mm gloves

SECTION 8: Exposure controls/personal protection

Wash hands before breaks and immediately after handling the product.

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.

Filter type: A

Filter type (spray application): A P

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
Propan-2-ol	83	181.4	
water	100	212	

Flammability : Not available.

Lower and upper explosion limit : Lower: 0.8% (xylene)
Upper: 12% (Isopropyl alcohol)

Flash point : Closed cup: 6°C (42.8°F)

Auto-ignition temperature :

Ingredient name	°C	°F	Method
Butan-1-ol	355	671	EU A.15
iso-butanol	415	779	

Decomposition temperature : Not available.

pH : Not applicable.

Viscosity : Kinematic (40°C): >20.5 mm^2/s

Solubility(ies) :

Not available.

Solubility in water : Not available.

Partition coefficient: n-octanol/water : Not applicable.

SECTION 9: Physical and chemical properties

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				
water	17.5	2.3				

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.

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
Propan-2-ol	**Rabbit - Dermal - LD50** 12800 mg/kg **Rat - Oral - LD50** 5000 mg/kg Toxic effects: Behavioral - General anesthetic
Xylene	**Rat - Oral - LD50** 4300 mg/kg Toxic effects: Liver - Other changes Kidney, Ureter, and Bladder - Other changes **Rat - Inhalation - LC50 Vapour** 21.7 mg/l [4 hours]
iso-butanol	**Rat - Oral - LD50**

	2460 mg/kg **Rabbit - Dermal - LD50** 3400 mg/kg **Rat - Inhalation - LC50 Vapour** 19200 mg/m³ [4 hours]
Ethylbenzene	**Rat - Oral - LD50** 3500 mg/kg **Rabbit - Dermal - LD50** 15400 mg/kg **Rat - Inhalation - LC50 Dusts and mists** 29000 mg/l [4 hours]
Urea-formaldehyde-polymer	**Rat - Oral - LD50** >5 g/kg Toxic effects: Olfaction - Other changes Behavioral - Somnolence (general depressed activity) Behavioral - Food intake (animal) **Rabbit - Dermal - LD50** >5 g/kg Toxic effects: Skin After systemic exposure - Dermatitis, other
Butan-1-ol	**Rat - Oral - LD50** 790 mg/kg Toxic effects: Liver - Fatty liver degeneration Kidney, Ureter, and Bladder - Other changes Blood - Other changes **Rabbit - Dermal - LD50** 3400 mg/kg **Rat - Inhalation - LC50 Vapour** 24000 mg/m³ [4 hours]
Phenol	**Rat - Oral - LD50** 317 mg/kg Toxic effects: Behavioral - Convulsions or effect on seizure threshold **Rat - Dermal - LD50** 669 mg/kg Toxic effects: Behavioral - Tremor Kidney, Ureter, and Bladder - Hematuria Skin After topical exposure - Cutaneous sensitization (experimental) **Rabbit - Dermal - LD50** 630 mg/kg **Rat - Inhalation - LC50 Vapour** 316 mg/m³ [4 hours]
Formaldehyde	**Rat - Oral - LD50** 100 mg/kg **Rabbit - Dermal - LD50** 270 mg/kg **Rat - Inhalation - LC50 Gas.** 250 ppm [4 hours]

Conclusion/Summary [Product] : Not available.

SECTION 11: Toxicological information

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)
KORRO PVB	20705.6	5848.9	N/A	46.8	N/A
Propan-2-ol	5000	12800	N/A	N/A	N/A
Xylene	4300	1100	N/A	11	N/A
iso-butanol	2460	3400	N/A	N/A	N/A
Ethylbenzene	3500	15400	N/A	11	29000
Butan-1-ol	790	3400	N/A	24	N/A
Phenol	100	630	N/A	3	N/A
Formaldehyde	500	N/A	100	N/A	N/A

Skin corrosion/irritation

Product/ingredient name	Result
Propan-2-ol	**Rabbit - Skin - Mild irritant** Amount/concentration applied: 500 mg
Xylene	**Rat - Skin - Mild irritant** Duration of treatment/exposure: 8 hours Amount/concentration applied: 60 uL **Rabbit - Skin - Moderate irritant** Duration of treatment/exposure: 24 hours Amount/concentration applied: 500 mg **Rabbit - Skin - Moderate irritant** Amount/concentration applied: 100 %
Ethylbenzene	**Rabbit - Skin - Mild irritant** Duration of treatment/exposure: 24 hours Amount/concentration applied: 15 mg
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin	**Rabbit - Skin - Moderate irritant** Duration of treatment/exposure: 24 hours Amount/concentration applied: 500 uL **Rabbit - Skin - Severe irritant** Duration of treatment/exposure: 24 hours Amount/concentration applied: 2 mg
Butan-1-ol	**Rabbit - Skin - Moderate irritant** Duration of treatment/exposure: 24 hours Amount/concentration applied: 20 mg
Phenol	**Pig - Skin - Severe irritant** Duration of treatment/exposure: 0.5 minutes Amount/concentration applied: 400 uL **Rabbit - Skin - Mild irritant** Amount/concentration applied: 100 mg **Rabbit - Skin - Severe irritant** Amount/concentration applied: 535 mg
Zinc oxide	**Rabbit - Skin - Mild irritant** Duration of treatment/exposure: 24 hours Amount/concentration applied: 500 mg
Formaldehyde	**Human - Skin - Mild irritant** Duration of treatment/exposure: 72 hours

Amount/concentration applied: 150 ug l

Human - Skin - Severe irritant
Amount/concentration applied: 0.01 %

Rabbit - Skin - Mild irritant
Amount/concentration applied: 540 mg

Rabbit - Skin - Moderate irritant
Duration of treatment/exposure: 24 hours
Amount/concentration applied: 50 mg

Rabbit - Skin - Severe irritant
Duration of treatment/exposure: 24 hours
Amount/concentration applied: 2 mg

Rabbit - Skin - Severe irritant
Amount/concentration applied: 0.8 %

Mouse - Skin - Moderate irritant
Amount/concentration applied: 7 %

Rat - Skin - Moderate irritant
Amount/concentration applied: 7 %

Rabbit - Skin - Severe irritant
Duration of treatment/exposure: 72 hours
Amount/concentration applied: 0.8 %

Conclusion/Summary [Product] : Not available.

Serious eye damage/eye irritation

Product/ingredient name	Result
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
Xylene	**Rabbit - Eyes - Mild irritant** Amount/concentration applied: 87 mg **Rabbit - Eyes - Severe irritant** Duration of treatment/exposure: 24 hours Amount/concentration applied: 5 mg
Ethylbenzene	**Rabbit - Eyes - Severe irritant** Amount/concentration applied: 500 mg
Urea-formaldehyde-polymer	**Rabbit - Eyes - Severe irritant** Duration of treatment/exposure: 24 hours Amount/concentration applied: 100 uL
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin	**Rabbit - Eyes - Mild irritant** Amount/concentration applied: 100 mg
Butan-1-ol	**Rabbit - Eyes - Severe irritant** Duration of treatment/exposure: 24 hours Amount/concentration applied: 2 mg **Rabbit - Eyes - Severe irritant**

	Amount/concentration applied: 0.005 Ml **Rabbit - Eyes - Severe irritant** Amount/concentration applied: 1.62 mg
Phenol	**Rabbit - Eyes - Mild irritant** Duration of treatment/exposure: 0.5 minutes Amount/concentration applied: 5 mg **Rabbit - Eyes - Severe irritant** Amount/concentration applied: 5 mg
Zinc oxide	**Rabbit - Eyes - Mild irritant** Duration of treatment/exposure: 24 hours Amount/concentration applied: 500 mg
Formaldehyde	**Human - Eyes - Mild irritant** Duration of treatment/exposure: 6 minutes Amount/concentration applied: 1 ppm **Rabbit - Eyes - Severe irritant** Duration of treatment/exposure: 24 hours Amount/concentration applied: 750 ug **Rabbit - Eyes - Severe irritant** Amount/concentration applied: 750 ug **Rabbit - Eyes - Severe irritant** Amount/concentration applied: 37 % **Rabbit - Eyes - Severe irritant** Amount/concentration applied: 10 mg **Mouse - Eyes - Moderate irritant** Amount/concentration applied: 3 %

Conclusion/Summary [Product] : Not available.

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.

SECTION 11: Toxicological information

Conclusion/Summary [Product] : Not available.

Reproductive toxicity

Not available.

Conclusion/Summary [Product] : Not available.

Specific target organ toxicity (single exposure)

Product/ingredient name	Result
Propan-2-ol	STOT SE 3, H336 (Narcotic effects)
Xylene	STOT SE 3, H335 (Respiratory tract irritation)
iso-butanol	STOT SE 3, H335 (Respiratory tract irritation) STOT SE 3, H336 (Narcotic effects)
Butan-1-ol	STOT SE 3, H335 (Respiratory tract irritation) STOT SE 3, H336 (Narcotic effects)
Formaldehyde	STOT SE 3, H335 (Respiratory tract irritation)

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Result
Xylene	STOT RE 2, H373 (oral, inhalation)
Ethylbenzene	STOT RE 2, H373 (hearing organs) (oral, inhalation)
Phenol	STOT RE 2, H373
Fatty acids, tall-oil, compds. with oleylamine	STOT RE 2, H373

Aspiration hazard

Product/ingredient name	Result
Xylene	ASPIRATION HAZARD - Category 1
Ethylbenzene	ASPIRATION HAZARD - Category 1

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. May cause respiratory irritation.

Skin contact : Causes skin irritation. May cause an allergic skin reaction.

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

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

SECTION 11: Toxicological information

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 : May cause damage to organs through prolonged or repeated exposure. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

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
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
iso-butanol	**Acute - LC50 - Fresh water** Fish - Rainbow trout,donaldson trout - *Oncorhynchus mykiss* Weight: 1.67 g 1330000 µg/l [96 hours] Effect: Mortality **Acute - LC50 - Marine water** Crustaceans - Brine shrimp - *Artemia salina* 600 mg/l [48 hours] Effect: Mortality
Trizinc bis(orthophosphate)	**Acute - EC50** Crustaceans - *Ceriodaphnia dubia* 0.96 mg/l [48 hours] **Acute - EC50** Algae - *Selenastrum capricornutum*

0.32 mg/l [72 hours]

Butan-1-ol

Acute - LC50 - Fresh water
Fish - Fathead minnow - *Pimephales promelas*
Age: 33 days; Size: 20.6 mm; Weight: 0.119 g
1730000 µg/l [96 hours]
Effect: Mortality

Acute - EC50 - Fresh water
Daphnia - Water flea - *Daphnia magna*
Age: 6 to 24 hours
1983000 µg/l [48 hours]
Effect: Intoxication

Phenol

Acute - LC50 - Fresh water
Fish - common carp - *Cyprinus carpio* - Larvae
Size: 8 mm
1.75 µg/l [96 hours]
Effect: Mortality

Acute - LC50 - Marine water
Crustaceans - Opossum shrimp - *Archaeomysis kokuboi* - Juvenile (Fledgling, Hatchling, Weanling)
800 µg/l [48 hours]
Effect: Mortality

Chronic - NOEC - Fresh water
Fish - Rainbow trout,donaldson trout - *Oncorhynchus mykiss*
118 µg/l [90 days]
Effect: Mortality

Acute - EC50 - Fresh water
Algae - Green algae - *Pseudokirchneriella subcapitata*
Age: 4 to 7 days
61.1 µg/l [96 hours]
Effect: Population

Chronic - NOEC - Fresh water
Daphnia - Water flea - *Daphnia magna*
Age: <24 hours
1.5 mg/l [21 days]
Effect: Reproduction

Chronic - NOEC - Marine water
Algae - Neptune's Necklace - *Hormosira banksii* - Gamete
16 µg/l [72 hours]
Effect: Development

Zinc oxide

Acute - LC50 - Fresh water
Daphnia - Water flea - *Daphnia magna* - Neonate
Age: <24 hours
98 µg/l [48 hours]
Effect: Mortality

Acute - IC50 - Fresh water
Algae - Green algae - *Pseudokirchneriella subcapitata* - Exponential growth phase
46 µg/l [72 hours]
Effect: Population

Acute - LC50 - Fresh water
US EPA
Fish - Rainbow trout,donaldson trout - *Oncorhynchus mykiss*
Weight: 0.78 g
1.1 ppm [96 hours]

Effect: Mortality

Formaldehyde

Acute - EC50 - Fresh water
Daphnia - Water flea - *Daphnia pulex* - Neonate
Age: <24 hours
5800 µg/l [48 hours]
Effect: Intoxication

Acute - EC50 - Marine water
Algae - Green algae - *Ulva pertusa*
0.788 mg/l [96 hours]
Effect: Reproduction

Acute - LC50 - Fresh water
US EPA
Fish - Rainbow trout,donaldson trout - *Oncorhynchus mykiss*
1.41 ppm [96 hours]
Effect: Mortality

Chronic - NOEC - Fresh water
Fish - Chinook salmon - *Oncorhynchus tshawytscha* - Egg
953.9 ppm [43 days]
Effect: Mortality

Chronic - NOEC - Marine water
Algae - Haptophyte - *Isochrysis galbana* - Exponential growth phase
Age: 4 to 5 days
0.005 mg/l [96 hours]
Effect: Population

Conclusion/Summary [Product] : Not available.

12.2 Persistence and degradability

Product/ingredient name	Result
iso-butanol	74% [28 days] - Readily

Conclusion/Summary [Product] : Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
iso-butanol	-	-	Readily

12.3 Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Propan-2-ol	0.05	-	Low
Xylene	3.12	8.1 to 25.9	Low
iso-butanol	1	-	Low
Trizinc bis(orthophosphate)	-	60960	High
Ethylbenzene	3.6	-	Low
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin	2.64 to 3.78	31	Low
Butan-1-ol	1	-	Low
Phenol	1.47	647 [OECD 305 E]	High
Zinc oxide	-	28960	High
Formaldehyde	0.35	-	Low

12.4 Mobility in soil

Soil/water partition coefficient

SECTION 12: Ecological information

Product/ingredient name	logKoc	Koc
Propan-2-ol	0.54	3.4364
iso-butanol	1.1	12.0246
Ethylbenzene	2.2	170.406
Butan-1-ol	0.51	3.22078
Phenol	1.4	27.0339
Formaldehyde	0.44	2.72646

Results of PMT and vPvM assessment

Product/ingredient name	PMT	P	M	T	vPvM	vP	vM
Propan-2-ol	No	No	No	No	No	No	No
Xylene	No	No	No	No	No	No	No
iso-butanol	No	No	No	No	No	No	No
Trizinc bis(orthophosphate)	No	No	No	No	No	No	No
Ethylbenzene	No	No	No	No	No	No	No
Urea-formaldehyde-polymer	No	No	No	No	No	No	No
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin	No	No	No	No	No	No	No
Butan-1-ol	No	No	No	No	No	No	No
Phenol	No	No	No	No	No	No	No
Zinc oxide	No	No	No	No	No	No	No
Fatty acids, tall-oil, compds. with oleylamine	No	No	No	No	No	No	No
Formaldehyde	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]

Product/ingredient name	PBT	P	B	T	vPvB	vP	vB
Propan-2-ol	No	N/A	N/A	No	N/A	N/A	N/A
Xylene	No	N/A	No	Yes	No	N/A	No
iso-butanol	No	N/A	N/A	No	N/A	N/A	N/A
Trizinc bis(orthophosphate)	No	No	No	No	No	No	No
Ethylbenzene	N/A	N/A	N/A	Yes	N/A	N/A	N/A
Urea-formaldehyde-polymer	No	N/A	N/A	No	N/A	N/A	N/A
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin	No	N/A	No	No	No	N/A	No
Butan-1-ol	No	N/A	N/A	No	N/A	N/A	N/A
Phenol	No	N/A	No	Yes	No	N/A	No
Zinc oxide	No	No	No	No	No	No	No
Fatty acids, tall-oil, compds. with oleylamine	N/A	N/A	N/A	Yes	N/A	N/A	N/A
Formaldehyde	N/A	N/A	N/A	Yes	N/A	N/A	N/A

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

Product/ingredient name	PBT	P	B	T	vPvB	vP	vB
Propan-2-ol	No	No	No	No	No	No	No
Xylene	No	No	No	No	No	No	No
iso-butanol	No	No	No	No	No	No	No
Trizinc bis(orthophosphate)	No	No	No	No	No	No	No
Ethylbenzene	No	No	No	No	No	No	No
Urea-formaldehyde-polymer	No	No	No	No	No	No	No
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin	No	No	No	No	No	No	No
Butan-1-ol	No	No	No	No	No	No	No
Phenol	No	No	No	No	No	No	No

SECTION 12: Ecological information

Zinc oxide	No	No	No	No	No	No	No
Fatty acids, tall-oil, compds. with oleylamine	No	No	No	No	No	No	No
Formaldehyde	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 : Avoid release to the environment. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Dispose of contents and container in accordance with all local, regional, national and international regulations.

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

European waste catalogue (EWC) : 080111*, 200127*

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	Yes.	Yes.	Yes.	Yes. The environmentally hazardous substance mark is not required.

SECTION 14: Transport information

Additional information

ADR/RID : The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.
Special provisions 640 (C)
Tunnel code (D/E)

ADN : The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.
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

Product/ingredient name	%	Designation [Usage]
KORRO PVB	≥90	3
Formaldehyde	<0.1	72

Labelling :

Synthetic polymer microparticles - Designation 78

Generic identity of polymer(s) : 3905 - Polymers of vinyl acetate or of other vinyl esters; other vinyl polymers.

Total percentage of synthetic polymer microparticles : 6.7%

The synthetic polymer microparticles supplied is subject to conditions laid down by entry 78 of Annex XVII to Regulation (EC) No 1907/2006 of the European Parliament and of the Council.

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.

Ozone depleting substances (EU 2024/590)

SECTION 15: Regulatory information

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 E2

National regulations

Austria

VbF class : Category 2

Limitation of the use of organic solvents : Permitted.

Belgium

Book VI carcinogenic agents annex VI.2-1 - VI.2-3

Ingredient name	Status
Noirs de charbon	Listed
Silice	Listed

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	-
titanium dioxide	Listed	-
Ethylbenzene	Listed	-

MAL-code : 4-5

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: 4-5

Application: When using scraper or knife, brush, roller etc. for pre- and post-treatments in a spray booth where the operator is outside the spray zone and when working in similar new* facilities of the combined-cabin, spray-cabin and spray-booth type where the operator is working inside the spray zone. When spraying in new* booths and cabins with non-atomizing guns.

- Protective clothing 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. When using scraper or knife, brush, roller, etc. for pre- and post-treatments outside a closed facility, spray booth or spray cabin.

- Air-supplied half mask, protective clothing and eye protection must be worn.

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

- Air-supplied half mask and eye protection must be worn.

When spraying in existing* spray 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. 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 protective clothing 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, protective clothing 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 :

Propan-2-ol	RG 84
Xylene	RG 4bis, RG 84
iso-butanol	RG 84
Ethylbenzene	RG 84
Butan-1-ol	RG 84
Formaldehyde	RG 43, RG 43bis, 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.

SECTION 15: Regulatory information

Danger criteria

Category	Reference number
P5c E2	1.2.5.3 1.3.2

Hazard class for water : 2

Technical instruction on air quality control (TA Luft)

Number [Class]	Description	%
5.2.1 5.2.5 5.2.5 [I] 5.2.7.1.1 [Formaldehyde] 5.2.10	Total dust Organic substances Organic substances Carcinogenic substances Soil polluting substances	25.8 66.8 64.6 0.03 6

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

Ministry of Social Affairs and Employment (SZW) - Carcinogenic substances and processes, mutagenic or reprotoxic substances

Ingredient name	Carcinogen	Mutagen	Reproductive toxicity - Fertility	Reproductive toxicity - Development	Harmful via breastfeeding
xyleen ethanol Solvent naphtha (petroleum), light arom.	- Listed Listed	- - Listed	- Fertility 1A -	Development 2 Development 1A -	- Listed -

Water Discharge Policy (ABM) : Z(1) Non biodegradable substances with hazardous properties for humans and the environment (carcinogenicity/ mutagenicity/ reprotoxicity/ bioacumulative potential/ toxicity or persistence). Decontamination effort: Z

Norway

Product registration number : 671703

Sweden

Flammable liquid class (SRVFS 2005:10) : 1

Switzerland

VOC content : VOC (w/w): 64.5%

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.

SECTION 15: Regulatory information

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
Skin Irrit. 2, H315	Calculation method
Eye Dam. 1, H318	Calculation method
Skin Sens. 1, H317	Calculation method
STOT SE 3, H335	Calculation method
STOT SE 3, H336	Calculation method
STOT RE 2, H373	Calculation method
Aquatic Chronic 2, H411	Calculation method

Full text of abbreviated H statements

H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H311	Toxic in contact with skin.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
H413	May cause long lasting harmful effects to aquatic life.
EUH071	Corrosive to the respiratory tract.

Full text of classifications [CLP/GHS]

SECTION 16: Other information

Acute Tox. 2	ACUTE TOXICITY - Category 2
Acute Tox. 3	ACUTE TOXICITY - Category 3
Acute Tox. 4	ACUTE TOXICITY - Category 4
Aquatic Acute 1	SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1
Aquatic Chronic 1	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1
Aquatic Chronic 2	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2
Aquatic Chronic 3	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3
Aquatic Chronic 4	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 4
Asp. Tox. 1	ASPIRATION HAZARD - Category 1
Carc. 1B	CARCINOGENICITY - Category 1B
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
Muta. 2	GERM CELL MUTAGENICITY - Category 2
Skin Corr. 1B	SKIN CORROSION/IRRITATION - Category 1B
Skin Irrit. 2	SKIN CORROSION/IRRITATION - Category 2
Skin Sens. 1	SKIN SENSITISATION - Category 1
Skin Sens. 1A	SKIN SENSITISATION - Category 1A
STOT RE 2	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2
STOT SE 3	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 3

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KORRO PVB 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.