

# SAFETY DATA SHEET



TEKNOHEAT 1179-02 - BLACK

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

### 1.1 Product identifier

**Product name** : TEKNOHEAT 1179-02 - BLACK

### 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@tekno.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. 3, H226  
Acute Tox. 4, H332  
Skin Irrit. 2, H315  
Eye Dam. 1, H318  
Skin Sens. 1, H317  
STOT SE 3, H335  
STOT RE 2, H373  
Aquatic Chronic 3, H412

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** :

H226 - Flammable liquid and vapour.  
H315 - Causes skin irritation.  
H317 - May cause an allergic skin reaction.  
H318 - Causes serious eye damage.  
H332 - Harmful if inhaled.  
H335 - May cause respiratory irritation.  
H373 - May cause damage to organs through prolonged or repeated exposure.  
H412 - Harmful to aquatic life with long lasting effects.

#### Precautionary statements

## SECTION 2: Hazards identification

<b>Prevention</b>	: 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. P260 - Do not breathe vapour.
<b>Response</b>	: P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
<b>Storage</b>	: P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.
<b>Disposal</b>	: P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
<b>Hazardous ingredients</b>	: Contains: Xylene; Ethylbenzene; Formaldehyde, polymer with 4-(1,1-dimethylethyl) phenol and Butan-1-ol
<b>Supplemental label elements</b>	:
<b>Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles</b>	:

### 2.3 Other hazards

<b>Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII</b>	: This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
<b>Other hazards which do not result in classification</b>	: 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
Xylene	REACH #: 01-2119488216-32 EC: 215-535-7 CAS: 1330-20-7 Index: 601-022-00-9	≥25 - ≤50	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]
Ethylbenzene	REACH #: 01-2119489370-35 EC: 202-849-4 CAS: 100-41-4 Index: 601-023-00-4	≥10 - ≤19	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]
Formaldehyde, polymer with 4-(1,1-dimethylethyl) phenol	CAS: 25085-50-1	≤10	Skin Sens. 1B, H317	-	[1]
Butan-1-ol	REACH #: 01-2119484630-38 EC: 200-751-6	≤5	Flam. Liq. 3, H226 Acute Tox. 4, H302 Skin Irrit. 2, H315	ATE [Oral] = 790 mg/kg	[1]

## SECTION 3: Composition/information on ingredients

	CAS: 71-36-3 Index: 603-004-00-6		Eye Dam. 1, H318 STOT SE 3, H335 STOT SE 3, H336		
2-Methoxy-1-methylethyl acetate	REACH #: 01-2119475791-29 EC: 203-603-9 CAS: 108-65-6 Index: 607-195-00-7	≤5	Flam. Liq. 3, H226 STOT SE 3, H336	-	[1] [2]
iso-butanol	REACH #: 01-2119484609-23 EC: 201-148-0 CAS: 78-83-1 Index: 603-108-00-1	≤2.6	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 3, H335 STOT SE 3, H336	-	[1]
Quaternary ammonium compounds, C12-14 (evennumbered) - alkylethyldimethyl, ethyl sulphates	REACH #: 01-2119977130-42 EC: 269-662-8	≤0.62	Acute Tox. 4, H302 Acute Tox. 3, H311 Skin Corr. 1C, H314 Eye Dam. 1, H318 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 <b>See Section 16 for the full text of the H statements declared above.</b>	ATE [Oral] = 500 mg/kg ATE [Dermal] = 528 mg/kg M [Acute] = 10 M [Chronic] = 1	[1]

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.
- 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.

## SECTION 4: First aid measures

- 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
- Inhalation** : Adverse symptoms may include the following:  
respiratory tract irritation  
coughing
- 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** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

- Suitable extinguishing media** : Use dry chemical, CO<sub>2</sub>, 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** : 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 harmful 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  
metal oxide/oxides

### 5.3 Advice for firefighters

## SECTION 5: Firefighting measures

- 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.

### 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.

## SECTION 7: Handling and storage

### Advice on general occupational hygiene

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

### 7.2 Conditions for safe storage, including any incompatibilities

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

### Seveso Directive - Reporting thresholds

#### Danger criteria

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

### 7.3 Specific end use(s)

**Recommendations** : Not available.

**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
Xylene	<b>Regulation on Limit Values - MAC (Austria, 12/2024) [Xylol (alle Isomeren, rein)]</b> PEAK 15 minutes: 442 mg/m <sup>3</sup> 4 times per shift. TWA 8 hours: 50 ppm. PEAK 15 minutes: 100 ppm 4 times per shift. TWA 8 hours: 221 mg/m <sup>3</sup> .
Ethylbenzene	<b>Regulation on Limit Values - MAC (Austria, 12/2024) Absorbed through skin.</b> TWA 8 hours: 100 ppm. TWA 8 hours: 440 mg/m <sup>3</sup> . CEIL 5 minutes: 200 ppm 8 times per shift. CEIL 5 minutes: 880 mg/m <sup>3</sup> 8 times per shift.
Butan-1-ol	<b>Regulation on Limit Values - MAC (Austria, 12/2024) [Butanol (alle Isomeren außer 2-Methyl-2-propanol)]</b> PEAK 15 minutes: 200 ppm 4 times per shift. TWA 8 hours: 150 mg/m <sup>3</sup> . TWA 8 hours: 50 ppm. PEAK 15 minutes: 600 mg/m <sup>3</sup> 4 times per shift.
2-Methoxy-1-methylethyl acetate	<b>Regulation on Limit Values - MAC (Austria, 12/2024) Absorbed through skin.</b> TWA 8 hours: 50 ppm. TWA 8 hours: 275 mg/m <sup>3</sup> . CEIL 5 minutes: 100 ppm 8 times per shift. CEIL 5 minutes: 550 mg/m <sup>3</sup> 8 times per shift.
iso-butanol	<b>Regulation on Limit Values - MAC (Austria, 12/2024) [Butanol (alle Isomeren außer 2-Methyl-2-propanol)]</b> PEAK 15 minutes: 200 ppm 4 times per shift.



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Xylene	<p>TWA 8 hours: 150 mg/m<sup>3</sup>. TWA 8 hours: 50 ppm. PEAK 15 minutes: 600 mg/m<sup>3</sup> 4 times per shift.</p> <p><b>Limit values (Belgium, 12/2023) [Xyleen]</b> Absorbed through skin. TWA 8 hours: 50 ppm. TWA 8 hours: 221 mg/m<sup>3</sup>. STEL 15 minutes: 100 ppm. STEL 15 minutes: 442 mg/m<sup>3</sup>.</p>
Ethylbenzene	<p><b>Limit values (Belgium, 12/2023)</b> Absorbed through skin. TWA 8 hours: 20 ppm. TWA 8 hours: 87 mg/m<sup>3</sup>. STEL 15 minutes: 125 ppm. STEL 15 minutes: 551 mg/m<sup>3</sup>.</p>
Butan-1-ol	<p><b>Limit values (Belgium, 12/2023)</b> Absorbed through skin. TWA 8 hours: 20 ppm. TWA 8 hours: 62 mg/m<sup>3</sup>.</p>
2-Methoxy-1-methylethyl acetate	<p><b>Limit values (Belgium, 12/2023)</b> Absorbed through skin. TWA 8 hours: 50 ppm. TWA 8 hours: 275 mg/m<sup>3</sup>. STEL 15 minutes: 100 ppm. STEL 15 minutes: 550 mg/m<sup>3</sup>.</p>
iso-butanol	<p><b>Limit values (Belgium, 12/2023)</b> TWA 8 hours: 50 ppm. TWA 8 hours: 154 mg/m<sup>3</sup>.</p>
Xylene	<p><b>Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 13/2003. (Bulgaria, 4/2024) [Xylene]</b> Absorbed through skin. Limit value 8 hours: 221 mg/m<sup>3</sup>. Limit value 15 minutes: 442 mg/m<sup>3</sup>. Limit value 15 minutes: 100 ppm. Limit value 8 hours: 50 ppm.</p>
Ethylbenzene	<p><b>Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 13/2003. (Bulgaria, 4/2024)</b> Absorbed through skin. Limit value 8 hours: 435 mg/m<sup>3</sup>. Limit value 15 minutes: 545 mg/m<sup>3</sup>.</p>
Butan-1-ol	<p><b>Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 13/2003. (Bulgaria, 4/2024)</b> Limit value 8 hours: 100 mg/m<sup>3</sup>. Limit value 15 minutes: 150 mg/m<sup>3</sup>.</p>
2-Methoxy-1-methylethyl acetate	<p><b>Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 13/2003. (Bulgaria, 4/2024)</b> Absorbed through skin. Limit value 8 hours: 275 mg/m<sup>3</sup>. Limit value 15 minutes: 550 mg/m<sup>3</sup>. Limit value 15 minutes: 100 ppm. Limit value 8 hours: 50 ppm.</p>
Xylene	<p><b>Ordinance on the protection of workers from exposure to hazardous chemicals at work, exposure limit values (Annex I) (Croatia, 12/2023) [ksilen]</b> Absorbed through skin. STELV 15 minutes: 442 mg/m<sup>3</sup>. STELV 15 minutes: 100 ppm. ELV 8 hours: 221 mg/m<sup>3</sup>. ELV 8 hours: 50 ppm.</p>
Ethylbenzene	<p><b>Ordinance on the protection of workers from exposure to hazardous chemicals at work, exposure limit values (Annex I) (Croatia, 12/2023)</b> Absorbed through skin. STELV 15 minutes: 884 mg/m<sup>3</sup>. STELV 15 minutes: 200 ppm. ELV 8 hours: 442 mg/m<sup>3</sup>. ELV 8 hours: 100 ppm.</p>
Butan-1-ol	<p><b>Ordinance on the protection of workers from exposure to</b></p>

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2-Methoxy-1-methylethyl acetate	<p><b>hazardous chemicals at work, exposure limit values (Annex I) (Croatia, 12/2023)</b> Absorbed through skin.          STELV 15 minutes: 154 mg/m<sup>3</sup>.          STELV 15 minutes: 50 ppm.</p> <p><b>Ordinance on the protection of workers from exposure to hazardous chemicals at work, exposure limit values (Annex I) (Croatia, 12/2023)</b> Absorbed through skin.          STELV 15 minutes: 550 mg/m<sup>3</sup>.          STELV 15 minutes: 100 ppm.          ELV 8 hours: 275 mg/m<sup>3</sup>.          ELV 8 hours: 50 ppm.</p>
iso-butanol	<p><b>Ordinance on the protection of workers from exposure to hazardous chemicals at work, exposure limit values (Annex I) (Croatia, 12/2023)</b> Absorbed through skin.          STELV 15 minutes: 231 mg/m<sup>3</sup>.          STELV 15 minutes: 75 ppm.          ELV 8 hours: 154 mg/m<sup>3</sup>.          ELV 8 hours: 50 ppm.</p>
Xylene	<p><b>Department of labour inspection (Cyprus, 7/2021) [Ξυλένιο, μικτά ισομερή, καθαρά]</b> Absorbed through skin.          STEL 15 minutes: 100 ppm.          STEL 15 minutes: 442 mg/m<sup>3</sup>.          TWA 8 hours: 50 ppm.          TWA 8 hours: 221 mg/m<sup>3</sup>.</p>
Ethylbenzene	<p><b>Department of labour inspection (Cyprus, 7/2021)</b> Absorbed through skin.          STEL 15 minutes: 884 mg/m<sup>3</sup>.          TWA 8 hours: 100 ppm.          TWA 8 hours: 442 mg/m<sup>3</sup>.          STEL 15 minutes: 200 ppm.</p>
2-Methoxy-1-methylethyl acetate	<p><b>Department of labour inspection (Cyprus, 7/2021)</b> Absorbed through skin.          STEL 15 minutes: 100 ppm.          STEL 15 minutes: 550 mg/m<sup>3</sup>.          TWA 8 hours: 50 ppm.          TWA 8 hours: 275 mg/m<sup>3</sup>.</p>
Xylene	<p><b>Government regulation of Czech Republic PEL/NPK-P (Czech Republic, 12/2023) [xylen]</b> Absorbed through skin.          TWA 8 hours: 200 mg/m<sup>3</sup>.          TWA 8 hours: 45.33 ppm.          STEL 15 minutes: 400 mg/m<sup>3</sup>.          STEL 15 minutes: 90.66 ppm.</p>
Ethylbenzene	<p><b>Government regulation of Czech Republic PEL/NPK-P (Czech Republic, 12/2023)</b> Absorbed through skin.          TWA 8 hours: 200 mg/m<sup>3</sup>.          TWA 8 hours: 45.33 ppm.          STEL 15 minutes: 500 mg/m<sup>3</sup>.          STEL 15 minutes: 113.32 ppm.</p>
Butan-1-ol	<p><b>Government regulation of Czech Republic PEL/NPK-P (Czech Republic, 12/2023) [butanol]</b>          TWA 8 hours: 300 mg/m<sup>3</sup>.          TWA 8 hours: 97 ppm.          STEL 15 minutes: 600 mg/m<sup>3</sup>.          STEL 15 minutes: 194 ppm.</p>
2-Methoxy-1-methylethyl acetate	<p><b>Government regulation of Czech Republic PEL/NPK-P (Czech Republic, 12/2023)</b> Absorbed through skin.          TWA 8 hours: 275 mg/m<sup>3</sup>.          TWA 8 hours: 50 ppm.          STEL 15 minutes: 550 mg/m<sup>3</sup>.          STEL 15 minutes: 100 ppm.</p>
iso-butanol	<p><b>Government regulation of Czech Republic PEL/NPK-P (Czech Republic, 12/2023) [butanol]</b></p>



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Xylene	<p>TWA 8 hours: 300 mg/m<sup>3</sup>. TWA 8 hours: 97 ppm. STEL 15 minutes: 600 mg/m<sup>3</sup>. STEL 15 minutes: 194 ppm.</p> <p><b>Working Environment Authority (Denmark, 12/2024) [xylen, alle isomere]</b> Absorbed through skin. TWA 8 hours: 25 ppm. TWA 8 hours: 109 mg/m<sup>3</sup>. STEL 15 minutes: 442 mg/m<sup>3</sup>. STEL 15 minutes: 100 ppm.</p>
Ethylbenzene	<p><b>Working Environment Authority (Denmark, 12/2024) K.</b> Absorbed through skin. TWA 8 hours: 50 ppm. TWA 8 hours: 217 mg/m<sup>3</sup>. STEL 15 minutes: 434 mg/m<sup>3</sup>. STEL 15 minutes: 100 ppm.</p>
Butan-1-ol	<p><b>Working Environment Authority (Denmark, 12/2024) [butanol, alle isomere]</b> Absorbed through skin. CEIL: 50 ppm. CEIL: 150 mg/m<sup>3</sup>.</p>
2-Methoxy-1-methylethyl acetate	<p><b>Working Environment Authority (Denmark, 12/2024) [2-methoxy-1-methylethylacetat]</b> Absorbed through skin. TWA 8 hours: 50 ppm. TWA 8 hours: 275 mg/m<sup>3</sup>. STEL 15 minutes: 550 mg/m<sup>3</sup>. STEL 15 minutes: 100 ppm.</p>
iso-butanol	<p><b>Working Environment Authority (Denmark, 12/2024) [butanol, alle isomere]</b> Absorbed through skin. CEIL: 50 ppm. CEIL: 150 mg/m<sup>3</sup>.</p>
Xylene	<p><b>Occupational exposure limits, Regulation No. 293 (Estonia, 4/2024) [ksüleen]</b> Absorbed through skin. TWA 8 hours: 50 ppm. STEL 15 minutes: 100 ppm. STEL 15 minutes: 450 mg/m<sup>3</sup>. TWA 8 hours: 200 mg/m<sup>3</sup>.</p>
Ethylbenzene	<p><b>Occupational exposure limits, Regulation No. 293 (Estonia, 4/2024)</b> Absorbed through skin , Sensitiser. TWA 8 hours: 442 mg/m<sup>3</sup>. TWA 8 hours: 100 ppm. STEL 15 minutes: 884 mg/m<sup>3</sup>. STEL 15 minutes: 200 ppm.</p>
Butan-1-ol	<p><b>Occupational exposure limits, Regulation No. 293 (Estonia, 4/2024)</b> Absorbed through skin. TWA 8 hours: 45 mg/m<sup>3</sup>. TWA 8 hours: 15 ppm. STEL 5 minutes: 90 mg/m<sup>3</sup>. STEL 5 minutes: 30 ppm.</p>
2-Methoxy-1-methylethyl acetate	<p><b>Occupational exposure limits, Regulation No. 293 (Estonia, 4/2024)</b> Absorbed through skin , Sensitiser. STEL 15 minutes: 100 ppm. STEL 15 minutes: 550 mg/m<sup>3</sup>. TWA 8 hours: 275 mg/m<sup>3</sup>. TWA 8 hours: 50 ppm.</p>
iso-butanol	<p><b>Occupational exposure limits, Regulation No. 293 (Estonia, 4/2024)</b> TWA 8 hours: 150 mg/m<sup>3</sup>. TWA 8 hours: 50 ppm.</p>

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Xylene	<b>EU OEL (Europe, 1/2022) [xylene, mixed isomers]</b> Absorbed through skin. TWA 8 hours: 50 ppm. TWA 8 hours: 221 mg/m <sup>3</sup> . STEL 15 minutes: 100 ppm. STEL 15 minutes: 442 mg/m <sup>3</sup> .
Ethylbenzene	<b>EU OEL (Europe, 1/2022)</b> Absorbed through skin. TWA 8 hours: 100 ppm. TWA 8 hours: 442 mg/m <sup>3</sup> . STEL 15 minutes: 200 ppm. STEL 15 minutes: 884 mg/m <sup>3</sup> .
2-Methoxy-1-methylethyl acetate	<b>EU OEL (Europe, 1/2022)</b> Absorbed through skin. TWA 8 hours: 50 ppm. TWA 8 hours: 275 mg/m <sup>3</sup> . STEL 15 minutes: 100 ppm. STEL 15 minutes: 550 mg/m <sup>3</sup> .
Xylene	<b>Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021) [Ksyleeni]</b> Absorbed through skin. STEL 15 minutes: 440 mg/m <sup>3</sup> . TWA 8 hours: 220 mg/m <sup>3</sup> . TWA 8 hours: 50 ppm. STEL 15 minutes: 100 ppm.
Ethylbenzene	<b>Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021)</b> Absorbed through skin. TWA 8 hours: 50 ppm. TWA 8 hours: 220 mg/m <sup>3</sup> . STEL 15 minutes: 200 ppm. STEL 15 minutes: 880 mg/m <sup>3</sup> .
Butan-1-ol	<b>Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021)</b> Absorbed through skin. TWA 8 hours: 50 ppm. TWA 8 hours: 150 mg/m <sup>3</sup> . STEL 15 minutes: 75 ppm. STEL 15 minutes: 230 mg/m <sup>3</sup> .
2-Methoxy-1-methylethyl acetate	<b>Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021)</b> Absorbed through skin. TWA 8 hours: 50 ppm. TWA 8 hours: 270 mg/m <sup>3</sup> . STEL 15 minutes: 100 ppm. STEL 15 minutes: 550 mg/m <sup>3</sup> .
iso-butanol	<b>Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021) [Butanoli]</b> Absorbed through skin. TWA 8 hours: 50 ppm. TWA 8 hours: 150 mg/m <sup>3</sup> . STEL 15 minutes: 75 ppm. STEL 15 minutes: 230 mg/m <sup>3</sup> .
Xylene	<b>Ministry of Labor (France, 6/2024) [xylènes, isomères mixtes, purs]</b> Absorbed through skin. STEL 15 minutes: 442 mg/m <sup>3</sup> . 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/m <sup>3</sup> . 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)
Ethylbenzene	<b>Ministry of Labor (France, 6/2024)</b> 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/m <sup>3</sup> . Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code) STEL 15 minutes: 442 mg/m <sup>3</sup> . Notes: Binding regulatory limit

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Butan-1-ol	<p>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)  <b>Ministry of Labor (France, 6/2024)</b>            STEL 15 minutes: 50 ppm. Notes: Permissible limit values (circulars)            STEL 15 minutes: 150 mg/m<sup>3</sup>. Notes: Permissible limit values (circulars)</p>
2-Methoxy-1-methylethyl acetate	<p><b>Ministry of Labor (France, 6/2024)</b> Absorbed through skin.            STEL 15 minutes: 550 mg/m<sup>3</sup>. 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: 275 mg/m<sup>3</sup>. 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)</p>
iso-butanol	<p><b>Ministry of Labor (France, 6/2024)</b>            TWA 8 hours: 50 ppm. Notes: Permissible limit values (circulars)            TWA 8 hours: 150 mg/m<sup>3</sup>. Notes: Permissible limit values (circulars)</p>
Xylene	<p><b>TRGS 900 OEL (Germany, 6/2024) [Xylol]</b> Absorbed through skin.            TWA 8 hours: 220 mg/m<sup>3</sup>.            PEAK 15 minutes: 440 mg/m<sup>3</sup>.            TWA 8 hours: 50 ppm.            PEAK 15 minutes: 100 ppm.  <b>DFG MAC-values list (Germany, 7/2024) [Xylene]</b> 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/m<sup>3</sup>.            PEAK 15 minutes: 440 mg/m<sup>3</sup> 4 times per shift [Interval: 1 hour].</p>
Ethylbenzene	<p><b>TRGS 900 OEL (Germany, 6/2024)</b> Absorbed through skin.            TWA 8 hours: 88 mg/m<sup>3</sup>.            PEAK 15 minutes: 176 mg/m<sup>3</sup>.            TWA 8 hours: 20 ppm.            PEAK 15 minutes: 40 ppm.  <b>DFG MAC-values list (Germany, 7/2024)</b> Carc 4, Develop C.            Absorbed through skin.            PEAK 15 minutes: 40 ppm 4 times per shift [Interval: 1 hour].            PEAK 15 minutes: 176 mg/m<sup>3</sup> 4 times per shift [Interval: 1 hour].            TWA 8 hours: 88 mg/m<sup>3</sup>.            TWA 8 hours: 20 ppm.</p>
Butan-1-ol	<p><b>TRGS 900 OEL (Germany, 6/2024)</b>            TWA 8 hours: 310 mg/m<sup>3</sup>.            PEAK 15 minutes: 310 mg/m<sup>3</sup>.            TWA 8 hours: 100 ppm.            PEAK 15 minutes: 100 ppm.  <b>DFG MAC-values list (Germany, 7/2024)</b> Develop C.            TWA 8 hours: 100 ppm.            PEAK 15 minutes: 100 ppm 4 times per shift [Interval: 1 hour].            TWA 8 hours: 310 mg/m<sup>3</sup>.            PEAK 15 minutes: 310 mg/m<sup>3</sup> 4 times per shift [Interval: 1 hour].</p>
2-Methoxy-1-methylethyl acetate	<p><b>TRGS 900 OEL (Germany, 6/2024)</b>            TWA 8 hours: 270 mg/m<sup>3</sup>.            PEAK 15 minutes: 270 mg/m<sup>3</sup>.            TWA 8 hours: 50 ppm.            PEAK 15 minutes: 50 ppm.  <b>DFG MAC-values list (Germany, 7/2024)</b> Develop C.            TWA 8 hours: 50 ppm.            PEAK 15 minutes: 50 ppm 4 times per shift [Interval: 1 hour].            TWA 8 hours: 270 mg/m<sup>3</sup>.            PEAK 15 minutes: 270 mg/m<sup>3</sup> 4 times per shift [Interval: 1 hour].</p>

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iso-butanol	<p><b>TRGS 900 OEL (Germany, 6/2024)</b>  TWA 8 hours: 310 mg/m<sup>3</sup>.  PEAK 15 minutes: 310 mg/m<sup>3</sup>.  TWA 8 hours: 100 ppm.  PEAK 15 minutes: 100 ppm.</p> <p><b>DFG MAC-values list (Germany, 7/2024)</b> Develop C.  TWA 8 hours: 100 ppm.  PEAK 15 minutes: 100 ppm 4 times per shift [Interval: 1 hour].  TWA 8 hours: 310 mg/m<sup>3</sup>.  PEAK 15 minutes: 310 mg/m<sup>3</sup> 4 times per shift [Interval: 1 hour].</p>
Xylene	<p><b>Presidential Decree 307/1986: Occupational exposure limit values (Greece, 8/2024)</b> [ξυλόλια (όλα τα ισομερή)] Absorbed through skin.  TWA 8 hours: 100 ppm.  TWA 8 hours: 435 mg/m<sup>3</sup>.  STEL 15 minutes: 150 ppm.  STEL 15 minutes: 650 mg/m<sup>3</sup>.</p>
Ethylbenzene	<p><b>Presidential Decree 307/1986: Occupational exposure limit values (Greece, 8/2024)</b>  TWA 8 hours: 100 ppm.  TWA 8 hours: 435 mg/m<sup>3</sup>.  STEL 15 minutes: 125 ppm.  STEL 15 minutes: 545 mg/m<sup>3</sup>.</p>
Butan-1-ol	<p><b>Presidential Decree 307/1986: Occupational exposure limit values (Greece, 8/2024)</b> Absorbed through skin.  TWA 8 hours: 100 ppm.  TWA 8 hours: 300 mg/m<sup>3</sup>.  STEL 15 minutes: 100 ppm.  STEL 15 minutes: 300 mg/m<sup>3</sup>.</p>
2-Methoxy-1-methylethyl acetate	<p><b>Presidential Decree 307/1986: Occupational exposure limit values (Greece, 8/2024)</b> Absorbed through skin.  TWA 8 hours: 50 ppm.  TWA 8 hours: 275 mg/m<sup>3</sup>.  STEL 15 minutes: 100 ppm.  STEL 15 minutes: 550 mg/m<sup>3</sup>.</p>
iso-butanol	<p><b>Presidential Decree 307/1986: Occupational exposure limit values (Greece, 8/2024)</b>  TWA 8 hours: 100 ppm.  TWA 8 hours: 300 mg/m<sup>3</sup>.  STEL 15 minutes: 100 ppm.  STEL 15 minutes: 300 mg/m<sup>3</sup>.</p>
Xylene	<p><b>5/2020. (II. 6.) ITM Decree (Hungary, 1/2025)</b> [xilol izomerek keveréke] Absorbed through skin.  TWA 8 hours: 221 mg/m<sup>3</sup>.  PEAK 15 minutes: 442 mg/m<sup>3</sup>.  PEAK 15 minutes: 100 ppm.  TWA 8 hours: 50 ppm.</p>
Ethylbenzene	<p><b>5/2020. (II. 6.) ITM Decree (Hungary, 1/2025)</b> Absorbed through skin.  TWA 8 hours: 442 mg/m<sup>3</sup>.  PEAK 15 minutes: 884 mg/m<sup>3</sup>.  PEAK 15 minutes: 200 ppm.  TWA 8 hours: 100 ppm.</p>
Butan-1-ol	<p><b>5/2020. (II. 6.) ITM Decree (Hungary, 1/2025)</b> Absorbed through skin.  TWA 8 hours: 45 mg/m<sup>3</sup>.  PEAK 15 minutes: 90 mg/m<sup>3</sup>.</p>
2-Methoxy-1-methylethyl acetate	<p><b>5/2020. (II. 6.) ITM Decree (Hungary, 1/2025)</b>  TWA 8 hours: 275 mg/m<sup>3</sup>.  PEAK 15 minutes: 550 mg/m<sup>3</sup>.  PEAK 15 minutes: 100 ppm.  TWA 8 hours: 50 ppm.</p>

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Xylene	<b>Ministry of Welfare, List of Exposure Limits (Iceland, 11/2024)</b> <b>[Xýlen, allir isómerar]</b> Absorbed through skin. STEL 15 minutes: 442 mg/m <sup>3</sup> . STEL 15 minutes: 100 ppm. TWA 8 hours: 109 mg/m <sup>3</sup> . TWA 8 hours: 25 ppm.
Ethylbenzene	<b>Ministry of Welfare, List of Exposure Limits (Iceland, 11/2024)</b> Absorbed through skin. STEL 15 minutes: 884 mg/m <sup>3</sup> . STEL 15 minutes: 200 ppm. TWA 8 hours: 200 mg/m <sup>3</sup> . TWA 8 hours: 50 ppm.
Butan-1-ol	<b>Ministry of Welfare, List of Exposure Limits (Iceland, 11/2024)</b> Absorbed through skin. STEL 15 minutes: 150 mg/m <sup>3</sup> . STEL 15 minutes: 50 ppm. TWA 8 hours: 80 mg/m <sup>3</sup> . TWA 8 hours: 25 ppm.
2-Methoxy-1-methylethyl acetate	<b>Ministry of Welfare, List of Exposure Limits (Iceland, 11/2024)</b> Absorbed through skin. STEL 15 minutes: 550 mg/m <sup>3</sup> . STEL 15 minutes: 100 ppm. TWA 8 hours: 275 mg/m <sup>3</sup> . TWA 8 hours: 50 ppm.
iso-butanol	<b>Ministry of Welfare, List of Exposure Limits (Iceland, 11/2024)</b> <b>[Bútanól, allir isómerar nema n-bútanól]</b> Absorbed through skin. STEL 15 minutes: 150 mg/m <sup>3</sup> . STEL 15 minutes: 50 ppm.
Xylene	<b>NAOSH (Ireland, 4/2024) [xylene]</b> Absorbed through skin. Notes: EU derived Occupational Exposure Limit Values OELV 8 hours: 50 ppm. OELV 8 hours: 221 mg/m <sup>3</sup> . OELV 15 minutes: 100 ppm. OELV 15 minutes: 442 mg/m <sup>3</sup> .
Ethylbenzene	<b>NAOSH (Ireland, 4/2024)</b> Absorbed through skin. Notes: EU derived Occupational Exposure Limit Values OELV 8 hours: 100 ppm. OELV 8 hours: 442 mg/m <sup>3</sup> . OELV 15 minutes: 200 ppm. OELV 15 minutes: 884 mg/m <sup>3</sup> .
Butan-1-ol	<b>NAOSH (Ireland, 4/2024)</b> Notes: Advisory Occupational Exposure Limit Values (OELVs) OELV 8 hours: 20 ppm.
2-Methoxy-1-methylethyl acetate	<b>NAOSH (Ireland, 4/2024)</b> Absorbed through skin. Notes: EU derived Occupational Exposure Limit Values OELV 8 hours: 50 ppm. OELV 8 hours: 275 mg/m <sup>3</sup> . OELV 15 minutes: 100 ppm. OELV 15 minutes: 550 mg/m <sup>3</sup> .
iso-butanol	<b>NAOSH (Ireland, 4/2024)</b> Notes: Advisory Occupational Exposure Limit Values (OELVs) OELV 8 hours: 150 ppm. OELV 8 hours: 700 mg/m <sup>3</sup> .
Xylene	<b>Legislative Decree No. 81/2008. Title IX. Protection from chemical agents, carcinogens and mutagens (Italy, 9/2024)</b> <b>[xilene, isomeri misti, puro]</b> Absorbed through skin. Limit value 8 hours: 50 ppm. Limit value 8 hours: 221 mg/m <sup>3</sup> . Short Term 15 minutes: 100 ppm. Short Term 15 minutes: 442 mg/m <sup>3</sup> .
Ethylbenzene	<b>Legislative Decree No. 81/2008. Title IX. Protection from chemical agents, carcinogens and mutagens (Italy, 9/2024)</b>

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2-Methoxy-1-methylethyl acetate	<p>Absorbed through skin.  Limit value 8 hours: 100 ppm.  Limit value 8 hours: 442 mg/m<sup>3</sup>.  Short Term 15 minutes: 200 ppm.  Short Term 15 minutes: 884 mg/m<sup>3</sup>.</p> <p><b>Legislative Decree No. 81/2008. Title IX. Protection from chemical agents, carcinogens and mutagens (Italy, 9/2024)</b></p> <p>Absorbed through skin.  Limit value 8 hours: 50 ppm.  Limit value 8 hours: 275 mg/m<sup>3</sup>.  Short Term 15 minutes: 100 ppm.  Short Term 15 minutes: 550 mg/m<sup>3</sup>.</p>
Xylene	<p><b>Ministers Cabinet Regulations Nr.325 - AER (Latvia, 3/2024)</b>  <b>[Ksilols]</b> Absorbed through skin.  TWA 8 hours: 221 mg/m<sup>3</sup>.  TWA 8 hours: 50 ppm.  STEL 15 minutes: 100 ppm.  STEL 15 minutes: 442 mg/m<sup>3</sup>.</p>
Ethylbenzene	<p><b>Ministers Cabinet Regulations Nr.325 - AER (Latvia, 3/2024)</b>  Absorbed through skin.  TWA 8 hours: 442 mg/m<sup>3</sup>.  TWA 8 hours: 100 ppm.  STEL 15 minutes: 200 ppm.  STEL 15 minutes: 884 mg/m<sup>3</sup>.</p>
Butan-1-ol	<p><b>Ministers Cabinet Regulations Nr.325 - AER (Latvia, 3/2024)</b>  <b>[Butilspirti]</b>  TWA 8 hours: 10 mg/m<sup>3</sup>.</p>
2-Methoxy-1-methylethyl acetate	<p><b>Ministers Cabinet Regulations Nr.325 - AER (Latvia, 3/2024)</b>  Absorbed through skin.  TWA 8 hours: 50 ppm.  TWA 8 hours: 275 mg/m<sup>3</sup>.  STEL 15 minutes: 100 ppm.  STEL 15 minutes: 550 mg/m<sup>3</sup>.</p>
iso-butanol	<p><b>Ministers Cabinet Regulations Nr.325 - AER (Latvia, 3/2024)</b>  <b>[Butilspirti]</b>  TWA 8 hours: 10 mg/m<sup>3</sup>.</p>
Xylene	<p><b>Lithuanian Hygiene Standard HN 23 (Lithuania, 1/2024)</b>  <b>[ksilenas, mišrūs izomerai, grynas]</b> Absorbed through skin.  STEL 15 minutes: 442 mg/m<sup>3</sup>.  TWA 8 hours: 50 ppm.  STEL 15 minutes: 100 ppm.  TWA 8 hours: 221 mg/m<sup>3</sup>.</p>
Ethylbenzene	<p><b>Lithuanian Hygiene Standard HN 23 (Lithuania, 1/2024)</b>  Absorbed through skin.  TWA 8 hours: 442 mg/m<sup>3</sup>.  TWA 8 hours: 100 ppm.  STEL 15 minutes: 884 mg/m<sup>3</sup>.  STEL 15 minutes: 200 ppm.</p>
Butan-1-ol	<p><b>Lithuanian Hygiene Standard HN 23 (Lithuania, 1/2024)</b>  Absorbed through skin.  TWA 8 hours: 45 mg/m<sup>3</sup>.  TWA 8 hours: 15 ppm.  CEIL: 90 mg/m<sup>3</sup>.  CEIL: 30 ppm.</p>
2-Methoxy-1-methylethyl acetate	<p><b>Lithuanian Hygiene Standard HN 23 (Lithuania, 1/2024)</b>  Absorbed through skin.  TWA 8 hours: 250 mg/m<sup>3</sup>.  TWA 8 hours: 50 ppm.  STEL 15 minutes: 400 mg/m<sup>3</sup>.  STEL 15 minutes: 75 ppm.</p>
iso-butanol	<p><b>Lithuanian Hygiene Standard HN 23 (Lithuania, 1/2024)</b>  Absorbed through skin.</p>



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Xylene	<p>TWA 8 hours: 10 mg/m<sup>3</sup>.</p> <p><b>Grand-Duchy Regulation 2016. Chemical agents. Annex I (Luxembourg, 3/2021) [xylène Isomères mixtes, pures]</b></p> <p>Absorbed through skin.</p> <p>TWA 8 hours: 50 ppm.</p> <p>TWA 8 hours: 221 mg/m<sup>3</sup>.</p> <p>STEL 15 minutes: 100 ppm.</p> <p>STEL 15 minutes: 442 mg/m<sup>3</sup>.</p>
Ethylbenzene	<p><b>Grand-Duchy Regulation 2016. Chemical agents. Annex I (Luxembourg, 3/2021)</b> Absorbed through skin.</p> <p>TWA 8 hours: 100 ppm.</p> <p>TWA 8 hours: 442 mg/m<sup>3</sup>.</p> <p>STEL 15 minutes: 200 ppm.</p> <p>STEL 15 minutes: 884 mg/m<sup>3</sup>.</p>
2-Methoxy-1-methylethyl acetate	<p><b>Grand-Duchy Regulation 2016. Chemical agents. Annex I (Luxembourg, 3/2021)</b> Absorbed through skin.</p> <p>TWA 8 hours: 50 ppm.</p> <p>TWA 8 hours: 275 mg/m<sup>3</sup>.</p> <p>STEL 15 minutes: 100 ppm.</p> <p>STEL 15 minutes: 550 mg/m<sup>3</sup>.</p>
Xylene	<p><b>EU OEL (Europe, 1/2022) [xylene, mixed isomers]</b> Absorbed through skin.</p> <p>TWA 8 hours: 50 ppm.</p> <p>TWA 8 hours: 221 mg/m<sup>3</sup>.</p> <p>STEL 15 minutes: 100 ppm.</p> <p>STEL 15 minutes: 442 mg/m<sup>3</sup>.</p>
Ethylbenzene	<p><b>EU OEL (Europe, 1/2022)</b> Absorbed through skin.</p> <p>TWA 8 hours: 100 ppm.</p> <p>TWA 8 hours: 442 mg/m<sup>3</sup>.</p> <p>STEL 15 minutes: 200 ppm.</p> <p>STEL 15 minutes: 884 mg/m<sup>3</sup>.</p>
2-Methoxy-1-methylethyl acetate	<p><b>EU OEL (Europe, 1/2022)</b> Absorbed through skin.</p> <p>TWA 8 hours: 50 ppm.</p> <p>TWA 8 hours: 275 mg/m<sup>3</sup>.</p> <p>STEL 15 minutes: 100 ppm.</p> <p>STEL 15 minutes: 550 mg/m<sup>3</sup>.</p>
Xylene	<p><b>Ministry of Social Affairs and Employment, Legal limit values (Netherlands, 5/2024) [xyleen, o-, m-, p-isomeren]</b> Absorbed through skin.</p> <p>TWA 8 hours: 210 mg/m<sup>3</sup>.</p> <p>STEL 15 minutes: 442 mg/m<sup>3</sup>.</p> <p>STEL 15 minutes: 100 ppm.</p> <p>TWA 8 hours: 47.5 ppm.</p>
Ethylbenzene	<p><b>Ministry of Social Affairs and Employment, Legal limit values (Netherlands, 5/2024)</b> Absorbed through skin.</p> <p>TWA 8 hours: 215 mg/m<sup>3</sup>.</p> <p>STEL 15 minutes: 430 mg/m<sup>3</sup>.</p> <p>STEL 15 minutes: 97.3 ppm.</p> <p>TWA 8 hours: 48.6 ppm.</p>
2-Methoxy-1-methylethyl acetate	<p><b>Ministry of Social Affairs and Employment, Legal limit values (Netherlands, 5/2024)</b></p> <p>TWA 8 hours: 550 mg/m<sup>3</sup>.</p> <p>TWA 8 hours: 100 ppm.</p>
Xylene	<p><b>FOR-2011-12-06-1358 (Norway, 5/2024) [xylén]</b> Absorbed through skin.</p> <p>TWA 8 hours: 25 ppm.</p> <p>TWA 8 hours: 108 mg/m<sup>3</sup>.</p>
Ethylbenzene	<p><b>FOR-2011-12-06-1358 (Norway, 5/2024)</b> Carc. Absorbed through skin.</p> <p>TWA 8 hours: 5 ppm.</p> <p>TWA 8 hours: 20 mg/m<sup>3</sup>.</p>
Butan-1-ol	<p><b>FOR-2011-12-06-1358 (Norway, 5/2024)</b> Absorbed through skin.</p>

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2-Methoxy-1-methylethyl acetate	CEIL: 75 mg/m <sup>3</sup> . CEIL: 25 ppm. <b>FOR-2011-12-06-1358 (Norway, 5/2024)</b> Absorbed through skin. TWA 8 hours: 50 ppm. TWA 8 hours: 270 mg/m <sup>3</sup> .
iso-butanol	<b>FOR-2011-12-06-1358 (Norway, 5/2024)</b> Absorbed through skin. CEIL: 75 mg/m <sup>3</sup> . CEIL: 25 ppm.
Xylene	<b>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)</b> [xylene – mixed isomers (1,2-, 1,3-, 1,4-)] Absorbed through skin. TWA 8 hours: 100 mg/m <sup>3</sup> . STEL 15 minutes: 200 mg/m <sup>3</sup> .
Ethylbenzene	<b>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)</b> Absorbed through skin. TWA 8 hours: 200 mg/m <sup>3</sup> . STEL 15 minutes: 400 mg/m <sup>3</sup> .
Butan-1-ol	<b>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)</b> Absorbed through skin. TWA 8 hours: 50 mg/m <sup>3</sup> . STEL 15 minutes: 150 mg/m <sup>3</sup> .
2-Methoxy-1-methylethyl acetate	<b>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)</b> Absorbed through skin. TWA 8 hours: 260 mg/m <sup>3</sup> . STEL 15 minutes: 520 mg/m <sup>3</sup> .
iso-butanol	<b>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)</b> Absorbed through skin. TWA 8 hours: 100 mg/m <sup>3</sup> . STEL 15 minutes: 200 mg/m <sup>3</sup> .
Xylene	<b>Portuguese Institute of Quality (Portugal, 11/2014)</b> [xileno (isómeros o, m & p)] A4. TWA 8 hours: 100 ppm. STEL 15 minutes: 150 ppm. <b>Decree-Law 24/2012 - Occupational exposure limits for chemical agents (Portugal, 6/2021)</b> [xilenos] Absorbed through skin. STEL 15 minutes: 100 ppm. STEL 15 minutes: 442 mg/m <sup>3</sup> . TWA 8 hours: 50 ppm. TWA 8 hours: 221 mg/m <sup>3</sup> .
Ethylbenzene	<b>Portuguese Institute of Quality (Portugal, 11/2014)</b> A3. TWA 8 hours: 20 ppm. <b>Decree-Law 24/2012 - Occupational exposure limits for chemical agents (Portugal, 6/2021)</b> Absorbed through skin. STEL 15 minutes: 200 ppm. STEL 15 minutes: 884 mg/m <sup>3</sup> . TWA 8 hours: 100 ppm.

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Butan-1-ol	TWA 8 hours: 442 mg/m <sup>3</sup> . <b>Portuguese Institute of Quality (Portugal, 11/2014)</b>
2-Methoxy-1-methylethyl acetate	TWA 8 hours: 20 ppm. <b>Decree-Law 24/2012 - Occupational exposure limits for chemical agents (Portugal, 6/2021)</b> Absorbed through skin. STEL 15 minutes: 100 ppm. STEL 15 minutes: 550 mg/m <sup>3</sup> . TWA 8 hours: 50 ppm. TWA 8 hours: 275 mg/m <sup>3</sup> .
iso-butanol	<b>Portuguese Institute of Quality (Portugal, 11/2014)</b> TWA 8 hours: 50 ppm.
Xylene	<b>HG 1218/2006, Annex 1, with subsequent modifications and additions (Romania, 3/2024) [xilen]</b> Absorbed through skin. VLA 8 hours: 221 mg/m <sup>3</sup> . VLA 8 hours: 50 ppm. Short term 15 minutes: 442 mg/m <sup>3</sup> . Short term 15 minutes: 100 ppm.
Ethylbenzene	<b>HG 1218/2006, Annex 1, with subsequent modifications and additions (Romania, 3/2024)</b> Absorbed through skin. VLA 8 hours: 442 mg/m <sup>3</sup> . VLA 8 hours: 100 ppm. Short term 15 minutes: 884 mg/m <sup>3</sup> . Short term 15 minutes: 200 ppm.
Butan-1-ol	<b>HG 1218/2006, Annex 1, with subsequent modifications and additions (Romania, 3/2024)</b> VLA 8 hours: 100 mg/m <sup>3</sup> . VLA 8 hours: 33 ppm. Short term 15 minutes: 200 mg/m <sup>3</sup> . Short term 15 minutes: 66 ppm.
2-Methoxy-1-methylethyl acetate	<b>HG 1218/2006, Annex 1, with subsequent modifications and additions (Romania, 3/2024)</b> Absorbed through skin. VLA 8 hours: 275 mg/m <sup>3</sup> . VLA 8 hours: 50 ppm. Short term 15 minutes: 550 mg/m <sup>3</sup> . Short term 15 minutes: 100 ppm.
iso-butanol	<b>HG 1218/2006, Annex 1, with subsequent modifications and additions (Romania, 3/2024)</b> VLA 8 hours: 100 mg/m <sup>3</sup> . VLA 8 hours: 33 ppm. Short term 15 minutes: 200 mg/m <sup>3</sup> . Short term 15 minutes: 66 ppm.
Xylene	<b>Government regulation SR c. 355/2006 (Slovakia, 6/2024) [xylén, zmiešané izoméry]</b> Absorbed through skin , Inhalation sensitiser. TWA 8 hours: 221 mg/m <sup>3</sup> (xylene, mixed isomers). TWA 8 hours: 50 ppm (xylene, mixed isomers). STEL 15 minutes: 442 mg/m <sup>3</sup> (xylene, mixed isomers). STEL 15 minutes: 100 ppm (xylene, mixed isomers).
Ethylbenzene	<b>Government regulation SR c. 355/2006 (Slovakia, 6/2024)</b> Absorbed through skin , Inhalation sensitiser. TWA 8 hours: 442 mg/m <sup>3</sup> . TWA 8 hours: 100 ppm. STEL 15 minutes: 884 mg/m <sup>3</sup> . STEL 15 minutes: 200 ppm.
Butan-1-ol	<b>Government regulation SR c. 355/2006 (Slovakia, 6/2024) [butylalkoholy]</b> Inhalation sensitiser. TWA 8 hours: 310 mg/m <sup>3</sup> (Butyl alcohols). TWA 8 hours: 100 ppm (Butyl alcohols).
2-Methoxy-1-methylethyl acetate	<b>Government regulation SR c. 355/2006 (Slovakia, 6/2024)</b> Absorbed through skin , Inhalation sensitiser. TWA 8 hours: 275 mg/m <sup>3</sup> . TWA 8 hours: 50 ppm.

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iso-butanol	<p>STEL 15 minutes: 550 mg/m<sup>3</sup>. STEL 15 minutes: 100 ppm.</p> <p><b>Government regulation SR c. 355/2006 (Slovakia, 6/2024)</b> <b>[butylalkoholy]</b> Inhalation sensitiser. TWA 8 hours: 310 mg/m<sup>3</sup> (Butyl alcohols). TWA 8 hours: 100 ppm (Butyl alcohols).</p>
Xylene	<p><b>Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 4/2024)</b> <b>[ksilen]</b> Absorbed through skin. TWA 8 hours: 221 mg/m<sup>3</sup>. TWA 8 hours: 50 ppm. KTV 15 minutes: 442 mg/m<sup>3</sup> 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].</p>
Ethylbenzene	<p><b>Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 4/2024)</b> Absorbed through skin. TWA 8 hours: 442 mg/m<sup>3</sup>. TWA 8 hours: 100 ppm. KTV 15 minutes: 884 mg/m<sup>3</sup> 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].</p>
Butan-1-ol	<p><b>Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 4/2024)</b> TWA 8 hours: 310 mg/m<sup>3</sup>. TWA 8 hours: 100 ppm. KTV 15 minutes: 310 mg/m<sup>3</sup> 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].</p>
2-Methoxy-1-methylethyl acetate	<p><b>Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 4/2024)</b> Absorbed through skin. TWA 8 hours: 275 mg/m<sup>3</sup>. TWA 8 hours: 50 ppm. KTV 15 minutes: 550 mg/m<sup>3</sup> 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].</p>
iso-butanol	<p><b>Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 4/2024)</b> TWA 8 hours: 310 mg/m<sup>3</sup>. TWA 8 hours: 100 ppm. KTV 15 minutes: 310 mg/m<sup>3</sup> 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].</p>
Xylene	<p><b>National institute of occupational safety and health (Spain, 1/2024) [xileno, mezcla isómeros]</b> Absorbed through skin. TWA 8 hours: 50 ppm. TWA 8 hours: 221 mg/m<sup>3</sup>. STEL 15 minutes: 100 ppm. STEL 15 minutes: 442 mg/m<sup>3</sup>.</p>
Ethylbenzene	<p><b>National institute of occupational safety and health (Spain, 1/2024)</b> Absorbed through skin. TWA 8 hours: 100 ppm. TWA 8 hours: 441 mg/m<sup>3</sup>. STEL 15 minutes: 200 ppm. STEL 15 minutes: 884 mg/m<sup>3</sup>.</p>
Butan-1-ol	<p><b>National institute of occupational safety and health (Spain,</b></p>

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2-Methoxy-1-methylethyl acetate	<p><b>1/2024)</b>            STEL 15 minutes: 50 ppm.            STEL 15 minutes: 154 mg/m<sup>3</sup>.            TWA 8 hours: 20 ppm.            TWA 8 hours: 61 mg/m<sup>3</sup>.</p> <p><b>National institute of occupational safety and health (Spain, 1/2024)</b> Absorbed through skin.            TWA 8 hours: 50 ppm.            TWA 8 hours: 275 mg/m<sup>3</sup>.            STEL 15 minutes: 100 ppm.            STEL 15 minutes: 550 mg/m<sup>3</sup>.</p>
iso-butanol	<p><b>National institute of occupational safety and health (Spain, 1/2024)</b>            TWA 8 hours: 50 ppm.            TWA 8 hours: 154 mg/m<sup>3</sup>.</p>
Xylene	<p><b>Work environment authority Regulation 2018:1 (Sweden, 11/2022) [xylene]</b> Absorbed through skin.            TWA 8 hours: 50 ppm.            TWA 8 hours: 221 mg/m<sup>3</sup>.            STEL 15 minutes: 100 ppm.            STEL 15 minutes: 442 mg/m<sup>3</sup>.</p>
Ethylbenzene	<p><b>Work environment authority Regulation 2018:1 (Sweden, 11/2022)</b> Absorbed through skin.            TWA 8 hours: 50 ppm.            TWA 8 hours: 220 mg/m<sup>3</sup>.            STEL 15 minutes: 200 ppm.            STEL 15 minutes: 884 mg/m<sup>3</sup>.</p>
Butan-1-ol	<p><b>Work environment authority Regulation 2018:1 (Sweden, 11/2022)</b> Absorbed through skin.            TWA 8 hours: 15 ppm.            TWA 8 hours: 45 mg/m<sup>3</sup>.            STEL 15 minutes: 30 ppm.            STEL 15 minutes: 90 mg/m<sup>3</sup>.</p>
2-Methoxy-1-methylethyl acetate	<p><b>Work environment authority Regulation 2018:1 (Sweden, 11/2022)</b> Absorbed through skin.            TWA 8 hours: 50 ppm.            TWA 8 hours: 275 mg/m<sup>3</sup>.            STEL 15 minutes: 100 ppm.            STEL 15 minutes: 550 mg/m<sup>3</sup>.</p>
iso-butanol	<p><b>Work environment authority Regulation 2018:1 (Sweden, 11/2022)</b> Absorbed through skin.            TWA 8 hours: 50 ppm.            TWA 8 hours: 150 mg/m<sup>3</sup>.            STEL 15 minutes: 75 ppm.            STEL 15 minutes: 250 mg/m<sup>3</sup>.</p>
Xylene	<p><b>SUVA (Switzerland, 1/2025) [Xylol]</b> Absorbed through skin.            TWA 8 hours: 50 ppm.            TWA 8 hours: 220 mg/m<sup>3</sup>.            STEL 15 minutes: 100 ppm.            STEL 15 minutes: 440 mg/m<sup>3</sup>.</p>
Ethylbenzene	<p><b>SUVA (Switzerland, 1/2025)</b> Absorbed through skin , Ototoxicant.            TWA 8 hours: 50 ppm.            TWA 8 hours: 220 mg/m<sup>3</sup>.            STEL 15 minutes: 50 ppm.            STEL 15 minutes: 220 mg/m<sup>3</sup>.</p>
Butan-1-ol	<p><b>SUVA (Switzerland, 1/2025)</b>            TWA 8 hours: 100 ppm.            TWA 8 hours: 310 mg/m<sup>3</sup>.            STEL 15 minutes: 100 ppm.            STEL 15 minutes: 310 mg/m<sup>3</sup>.</p>
2-Methoxy-1-methylethyl acetate	<p><b>SUVA (Switzerland, 1/2025)</b>            TWA 8 hours: 50 ppm.</p>

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iso-butanol	<p>TWA 8 hours: 275 mg/m<sup>3</sup>.          STEL 15 minutes: 50 ppm.          STEL 15 minutes: 275 mg/m<sup>3</sup>.</p> <p><b>SUVA (Switzerland, 1/2025)</b>          TWA 8 hours: 50 ppm.          TWA 8 hours: 150 mg/m<sup>3</sup>.          STEL 15 minutes: 50 ppm.          STEL 15 minutes: 150 mg/m<sup>3</sup>.</p>
Xylene	<p><b>EH40/2005 WELs (United Kingdom (UK), 1/2020) [xylene, o-,m-, p- or mixed isomers]</b> Absorbed through skin.          STEL 15 minutes: 441 mg/m<sup>3</sup>.          TWA 8 hours: 50 ppm.          TWA 8 hours: 220 mg/m<sup>3</sup>.          STEL 15 minutes: 100 ppm.</p>
Ethylbenzene	<p><b>EH40/2005 WELs (United Kingdom (UK), 1/2020)</b> Absorbed through skin.          STEL 15 minutes: 552 mg/m<sup>3</sup>.          STEL 15 minutes: 125 ppm.          TWA 8 hours: 100 ppm.          TWA 8 hours: 441 mg/m<sup>3</sup>.</p>
Butan-1-ol	<p><b>EH40/2005 WELs (United Kingdom (UK), 1/2020)</b> Absorbed through skin.          STEL 15 minutes: 154 mg/m<sup>3</sup>.          STEL 15 minutes: 50 ppm.</p>
2-Methoxy-1-methylethyl acetate	<p><b>EH40/2005 WELs (United Kingdom (UK), 1/2020)</b> Absorbed through skin.          STEL 15 minutes: 548 mg/m<sup>3</sup>.          TWA 8 hours: 50 ppm.          TWA 8 hours: 274 mg/m<sup>3</sup>.          STEL 15 minutes: 100 ppm.</p>
iso-butanol	<p><b>EH40/2005 WELs (United Kingdom (UK), 1/2020)</b>          STEL 15 minutes: 231 mg/m<sup>3</sup>.          STEL 15 minutes: 75 ppm.          TWA 8 hours: 154 mg/m<sup>3</sup>.          TWA 8 hours: 50 ppm.</p>

### Biological exposure indices

Product/ingredient name	Exposure indices
Xylene	<p><b>VGU BEI (Austria, 9/2020) [Xylol]</b>          BEI Fitness: 1000 µg/l, xylene [in blood]. Sampling time: one year.          BEI Fitness: 1.5 g/l, methylhippuric acid [in urine]. Sampling time: one year.</p>
No exposure indices known.	
Ethylbenzene	<p><b>Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 13/2003. (Bulgaria, 4/2024)</b> 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.</p>
Xylene	<p><b>Ordinance on the protection of workers from exposure to hazardous chemicals at work, biological limit values (Annex IV) (Croatia, 12/2023) [ksilen]</b>          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.</p>



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Ethylbenzene	<p><b>Ordinance on the protection of workers from exposure to hazardous chemicals at work, biological limit values (Annex IV) (Croatia, 12/2023)</b></p> <p>BEI: 1.5 mg/l, ethylbenzene [in blood]. Sampling time: during exposure.</p> <p>BEI: 14.1 µmol/l, ethylbenzene [in blood]. Sampling time: during exposure.</p> <p>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.</p> <p>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.</p>
No exposure indices known.	
Xylene	<p><b>Government regulation of Czech Republic Limit Values of Biological Exposure Tests (Czech Republic, 9/2015) [Xyleny]</b></p> <p>Biological limit values: 820 µmol/mmol creatinine, methylhippuric acid [in urine]. Sampling time: end of the shift.</p> <p>Biological limit values: 1400 mg/g creatinine, methylhippuric acid [in urine]. Sampling time: end of the shift.</p>
Ethylbenzene	<p><b>Government regulation of Czech Republic Limit Values of Biological Exposure Tests (Czech Republic, 9/2015)</b></p> <p>Biological limit values: 1100 µmol/mmol creatinine, almond acid [in urine]. Sampling time: end of the shift.</p> <p>Biological limit values: 1500 mg/g creatinine, almond acid [in urine]. Sampling time: end of the shift.</p>
No exposure indices known.	
No exposure indices known.	
No exposure indices known.	
Xylene	<p><b>Institute of Occupational Health, Ministry of Social Affairs (Finland, 9/2020) [Ksyleeni]</b></p> <p>BEI: 5 mmol/l, methylhippuric acid [in urine]. Sampling time: at the end of the work shift.</p>
Ethylbenzene	<p><b>Institute of Occupational Health, Ministry of Social Affairs (Finland, 9/2020)</b></p> <p>BEI: 5.2 mmol/l, mandelic acid [in urine]. Sampling time: after work shift at the end of the working week or exposure period.</p>
No exposure indices known.	
Xylene	<p><b>DFG BEI-values list (Germany, 7/2024) [Xylene (all isomers)]</b></p> <p>Notes: danger from percutaneous absorption (see p. 211 and p. 228).</p> <p>BEI: 1800 mg/g creatinine, Methylhippuric acids (=toluric acids) (all isomers) [in urine]. Sampling time: end of exposure or end of shift.</p> <p><b>TRGS 903 - BEI Values (Germany, 10/2024) [Xylol alle Isomeren]</b></p> <p>BEI: 2000 mg/l, methylhippuric acid [in urine]. Sampling time: end of exposure or end of shift.</p>
Ethylbenzene	<p><b>DFG BEI-values list (Germany, 7/2024)</b> Notes: danger from percutaneous absorption (see p. 211 and p. 228).</p> <p>BEI: 250 mg/g creatinine, mandelic acid plus phenyl glyoxylic acid [in urine]. Sampling time: end of exposure or end of shift.</p> <p><b>TRGS 903 - BEI Values (Germany, 10/2024)</b></p> <p>BEI: 250 mg/g creatinine, mandelic acid plus phenylglyoxylic acid [in urine]. Sampling time: end of exposure or end of shift.</p>
Butan-1-ol	<p><b>DFG BEI-values list (Germany, 7/2024)</b></p> <p>BEI: 2 mg/g creatinine, 1-butanol [in urine]. Sampling time: at the beginning of the next shift.</p>

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<p>No exposure indices known.</p>	<p>BEI: 10 mg/g creatinine, 1-butanol [in urine]. Sampling time: end of exposure or end of shift.</p> <p><b>TRGS 903 - BEI Values (Germany, 10/2024)</b></p> <p>BEI: 2 mg/g creatinine, butan-1-ol (butanol-1) (after hydrolysis) [in urine]. Sampling time: at the beginning of the next shift.</p> <p>BEI: 10 mg/g creatinine, butan-1-ol (butanol-1) (after hydrolysis) [in urine]. Sampling time: end of exposure or end of shift.</p>
<p>Xylene</p>	<p><b>5/2020. (II. 6.) ITM Decree (Hungary, 12/2023) [xilol]</b></p> <p>BEI: 1500 mg/g creatinine, methylhippuric acid [in urine]. Sampling time: at the end of the shift.</p> <p>BEI: 860 µmol/mmol creatinine, methylhippuric acid [in urine]. Sampling time: at the end of the shift.</p>
<p>Ethylbenzene</p>	<p><b>5/2020. (II. 6.) ITM Decree (Hungary, 12/2023)</b></p> <p>BEI: 1500 mg/g creatinine, mandelic acid [in urine]. Sampling time: at the end of the working week; at the end of the shift.</p> <p>BEI: 1110 µmol/mmol creatinine, mandelic acid [in urine]. Sampling time: at the end of the working week; at the end of the shift.</p>
<p>Butan-1-ol</p>	<p><b>5/2020. (II. 6.) ITM Decree (Hungary, 12/2023)</b></p> <p>BEI: 15 µmol/mmol creatinine, n-butyl-alcohol (after hydrolysis) [in urine]. Sampling time: at the end of the shift.</p> <p>BEI: 10 mg/g creatinine, n-butyl-alcohol (after hydrolysis) [in urine]. Sampling time: at the end of the shift.</p> <p>BEI: 3 µmol/mmol creatinine, n-butyl-alcohol (after hydrolysis) [in urine]. Sampling time: before the next shift.</p> <p>BEI: 2 mg/g creatinine, n-butyl-alcohol (after hydrolysis) [in urine]. Sampling time: before the next shift.</p>
<p>No exposure indices known.</p>	<p></p>
<p>Xylene</p>	<p><b>NAOSH BGVs (Ireland, 1/2011) [Xylene]</b></p> <p>BMGV: 1.5 g/g creatinine, methylhippuric acids [in urine]. Sampling time: end of shift - As soon as possible after exposure ceases.</p>
<p>Ethylbenzene</p>	<p><b>NAOSH BGVs (Ireland, 1/2011)</b></p> <p>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.</p> <p>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.</p>
<p>No exposure indices known.</p> <p>Xylene</p> <p>No exposure indices known.</p> <p>No exposure indices known.</p>	<p><b>Minister Cabinet Regulations No.325 - BEI (Latvia, 3/2024) [ksiloli (visi izomēri)]</b></p> <p>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.</p>

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No exposure indices known.	
No exposure indices known.	
No exposure indices known.	
No exposure indices known.	
Xylene	<b>Portuguese Institute of Quality (Portugal, 11/2014) [Xilenos (graus técnico e comercial)]</b> BEI: 1.5 g/g creatinine, (o, m, p) -methyl-boronic acids [in urine]. Sampling time: end of shift.
Ethylbenzene	<b>Portuguese Institute of Quality (Portugal, 11/2014)</b> BEI: 0.7 g/g creatinine, sum of mandelic acid and phenylglyoxylic acid [in urine]. Sampling time: end of shift.
Xylene	<b>HG 1218/2006, Annex 2, with subsequent modifications and additions (Romania, 3/2024) [xilen]</b> OBLV: 3 g/l, methylhippuric acid [in urine]. Sampling time: end of shift.
Ethylbenzene	<b>HG 1218/2006, Annex 2, with subsequent modifications and additions (Romania, 3/2024)</b> OBLV: 1.5 g/g creatinine, mandelic acid [in urine]. Sampling time: end of the week.
Xylene	<b>Government regulation SR c. 355/2006 (Slovakia, 6/2024) [xylén (všetky izoméry)]</b> 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	<b>Government regulation SR c. 355/2006 (Slovakia, 6/2024)</b> 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-ethylfenol [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-ethylfenol [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-ethylfenol [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-ethylfenol [in urine]. Sampling time: at the end of exposure or work shift; long-term exposure: after several work shifts.

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Butan-1-ol	<p><b>Government regulation SR c. 355/2006 (Slovakia, 6/2024)</b>            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.</p>
Xylene	<p><b>Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 4/2024) [ksilen (vse izomere)]</b>            BAT: 2 g/l, methylhippuric acid (all isomers) [in urine]. Sampling time: at the end of the work shift.</p>
Ethylbenzene	<p><b>Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 4/2024)</b>            BAT: 250 mg/g creatinine, mandelic acid and phenylglyoxylic acid [in urine]. Sampling time: at the end of the work shift.</p>
Butan-1-ol	<p><b>Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 4/2024)</b>            BAT: 10 mg/g creatinine, 1-butanol (after hydrolysis) [in urine]. 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.</p>
Xylene	<p><b>National institute of occupational safety and health (Spain, 1/2024) [Xilenos]</b>            VLB: 1 g/g creatinine, methylhippuric acids [in urine]. Sampling time: end of shift.</p>
Ethylbenzene	<p><b>National institute of occupational safety and health (Spain, 1/2024)</b>            VLB: 700 mg/g creatinine, sum of mandelic acid and acid and phenylglyoxylic acid [in urine]. Sampling time: end of workweek.</p>
No exposure indices known.	
Xylene	<p><b>SUVA (Switzerland, 1/2025) [Xylol (alle Isomere)]</b>            BEI: 2 g/l, methyl hippuric acid [in urine]. Sampling time: immediately after exposure or after working hours.</p>
Ethylbenzene	<p><b>SUVA (Switzerland, 1/2025)</b>            BEI: 600 mg/g creatinine, mandelic acid + phenylglyoxylic acid [in urine]. Sampling time: immediately after exposure or after working hours.</p>
Butan-1-ol	<p><b>SUVA (Switzerland, 1/2025)</b>            BEI: 2 mg/g creatinine, n-butanol [in urine]. Sampling time: before the next shift or 4pm.</p>
Xylene	<p><b>EH40/2005 BMGVs (United Kingdom (UK), 1/2020) [Xylene, o-, m-, p- or mixed isomers]</b>            BGV: 650 mmol/mol creatinine, methyl hippuric acid [in urine]. Sampling time: post shift.</p>

**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

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documents for methods for the determination of hazardous substances will also be required.

### DNELs/DMELs

#### **Product/ingredient name**

Xylene

#### **Result**

**DNEL - General population - Long term - Oral**

5 mg/kg bw/day

Effects: Systemic

**DNEL - General population - Long term - Inhalation**

65.3 mg/m<sup>3</sup>

Effects: Local

**DNEL - General population - Long term - Inhalation**

65.3 mg/m<sup>3</sup>

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/m<sup>3</sup>

Effects: Local

**DNEL - Workers - Long term - Inhalation**

221 mg/m<sup>3</sup>

Effects: Systemic

**DNEL - General population - Short term - Inhalation**

260 mg/m<sup>3</sup>

Effects: Local

**DNEL - General population - Short term - Inhalation**

260 mg/m<sup>3</sup>

Effects: Systemic

**DNEL - Workers - Short term - Inhalation**

442 mg/m<sup>3</sup>

Effects: Local

**DNEL - Workers - Short term - Inhalation**

442 mg/m<sup>3</sup>

Effects: Systemic

Ethylbenzene

**DMEL - Workers - Long term - Inhalation**

442 mg/m<sup>3</sup>

Effects: Local

**DMEL - Workers - Short term - Inhalation**

884 mg/m<sup>3</sup>

Effects: Systemic

**DNEL - General population - Long term - Oral**

1.6 mg/kg bw/day

Effects: Systemic

**DNEL - General population - Long term - Inhalation**

15 mg/m<sup>3</sup>

Effects: Systemic

**DNEL - Workers - Long term - Inhalation**

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77 mg/m<sup>3</sup>

Effects: Systemic

**DNEL - Workers - Long term - Dermal**

180 mg/kg bw/day

Effects: Systemic

**DNEL - Workers - Short term - Inhalation**

293 mg/m<sup>3</sup>

Effects: Local

**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/m<sup>3</sup>

Effects: Systemic

**DNEL - General population - Long term - Inhalation**

155 mg/m<sup>3</sup>

Effects: Local

**DNEL - Workers - Long term - Inhalation**

310 mg/m<sup>3</sup>

Effects: Local

**DNEL - General population - Long term - Inhalation**

33 mg/m<sup>3</sup>

Effects: Local

**DNEL - General population - Long term - Inhalation**

33 mg/m<sup>3</sup>

Effects: Systemic

**DNEL - General population - Long term - Oral**

36 mg/kg bw/day

Effects: Systemic

**DNEL - Workers - Long term - Inhalation**

275 mg/m<sup>3</sup>

Effects: Systemic

**DNEL - General population - Long term - Dermal**

320 mg/kg bw/day

Effects: Systemic

**DNEL - Workers - Short term - Inhalation**

550 mg/m<sup>3</sup>

Effects: Local

**DNEL - Workers - Long term - Dermal**

796 mg/kg bw/day

Effects: Systemic

**DNEL - General population - Long term - Inhalation**

55 mg/m<sup>3</sup>

Effects: Local

**DNEL - Workers - Long term - Inhalation**

310 mg/m<sup>3</sup>

Butan-1-ol

2-Methoxy-1-methylethyl acetate

iso-butanol



## SECTION 8: Exposure controls/personal protection

Effects: Local

### 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

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

## SECTION 8: Exposure controls/personal protection

**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** : Black.  
**Odour** : Slight  
**Odour threshold** : Not available.  
**Melting point/freezing point** : Not available.  
**Initial boiling point and boiling range** :

Ingredient name	°C	°F	Method
iso-butanol	108	226.4	OECD 103
Butan-1-ol	119	246.2	OECD 103

**Flammability** : Not available.  
**Lower and upper explosion limit** : Lower: 0.8% (xylene)  
Upper: 11.3% (butan-1-ol)  
**Flash point** : Closed cup: 25°C (77°F)  
**Auto-ignition temperature** :

Ingredient name	°C	°F	Method
2-Methoxy-1-methylethyl acetate	333	631.4	DIN 51794
Butan-1-ol	355	671	EU A.15

**Decomposition temperature** : Not available.  
**pH** : Not applicable.  
**Viscosity** : Not available.  
**Solubility(ies)** :  
Not available.

**Solubility in water** : Not available.  
**Partition coefficient: n-octanol/ water** : Not applicable.  
**Vapour pressure** :

Ingredient name	Vapour Pressure at 20°C			Vapour pressure at 50°C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
iso-butanol	<12.00102	<1.6	DIN EN 13016-2			
Ethylbenzene	9.30076	1.2				

**Relative density** : Not available.  
**Density** : 1.1 g/cm<sup>3</sup>  
**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

## SECTION 9: Physical and chemical properties

**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**

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]

Ethylbenzene

##### **Rat - Oral - LD50**

3500 mg/kg

##### **Rabbit - Dermal - LD50**

15400 mg/kg

##### **Rat - Inhalation - LC50 Dusts and mists**

29000 mg/l [4 hours]

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/m<sup>3</sup> [4 hours]

2-Methoxy-1-methylethyl acetate

##### **Rat - Oral - LD50**

8532 mg/kg

##### **Rabbit - Dermal - LD50**

>5 g/kg

## SECTION 11: Toxicological information

iso-butanol

**Rat - Oral - LD50**

2460 mg/kg

**Rabbit - Dermal - LD50**

3400 mg/kg

**Rat - Inhalation - LC50 Vapour**

19200 mg/m<sup>3</sup> [4 hours]

Quaternary ammonium compounds, C12-14 (evennumbered) -alkylethyldimethyl, ethyl sulphates

**Rabbit - Dermal - LD50**

528 mg/kg

**Conclusion/Summary [Product]** : Not available.

### Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
TEKNOHEAT 1179-02	19082.1	2235.0	N/A	18.8	N/A
Xylene	4300	1100	N/A	11	N/A
Ethylbenzene	3500	15400	N/A	11	29000
Butan-1-ol	790	3400	N/A	24	N/A
2-Methoxy-1-methylethyl acetate	8532	N/A	N/A	N/A	N/A
iso-butanol	2460	3400	N/A	N/A	N/A
Quaternary ammonium compounds, C12-14 (evennumbered) -alkylethyldimethyl, ethyl sulphates	500	528	N/A	N/A	N/A

### Skin corrosion/irritation

#### Product/ingredient name

Xylene

#### Result

**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

Butan-1-ol

**Rabbit - Skin - Moderate irritant**

Duration of treatment/exposure: 24 hours

Amount/concentration applied: 20 mg

**Conclusion/Summary [Product]** : Not available.

### Serious eye damage/eye irritation

#### Product/ingredient name

#### Result

## SECTION 11: Toxicological information

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

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 MI

**Rabbit - Eyes - Severe irritant**

Amount/concentration applied: 1.62 mg

**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.

**Conclusion/Summary [Product]** : Not available.

### Reproductive toxicity

Not available.

**Conclusion/Summary [Product]** : Not available.

### Specific target organ toxicity (single exposure)

**Product/ingredient name**

**Result**

## SECTION 11: Toxicological information

Xylene	STOT SE 3, H335 (Respiratory tract irritation)
Butan-1-ol	STOT SE 3, H335 (Respiratory tract irritation)
	STOT SE 3, H336 (Narcotic effects)
2-Methoxy-1-methylethyl acetate	STOT SE 3, H336 (Narcotic effects)
iso-butanol	STOT SE 3, H335 (Respiratory tract irritation)
	STOT SE 3, H336 (Narcotic effects)

### 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)

### 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

<b>Eye contact</b>	: Causes serious eye damage.
<b>Inhalation</b>	: Harmful if inhaled. May cause respiratory irritation.
<b>Skin contact</b>	: Causes skin irritation. May cause an allergic skin reaction.
<b>Ingestion</b>	: No known significant effects or critical hazards.

### Symptoms related to the physical, chemical and toxicological characteristics

<b>Eye contact</b>	: Adverse symptoms may include the following: pain watering redness
<b>Inhalation</b>	: Adverse symptoms may include the following: respiratory tract irritation coughing
<b>Skin contact</b>	: Adverse symptoms may include the following: pain or irritation redness blistering may occur
<b>Ingestion</b>	: Adverse symptoms may include the following: stomach pains

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

#### Short term exposure

<b>Potential immediate effects</b>	: Not available.
<b>Potential delayed effects</b>	: Not available.

#### Long term exposure

<b>Potential immediate effects</b>	: Not available.
<b>Potential delayed effects</b>	: Not available.

### Potential chronic health effects

Not available.

**Conclusion/Summary [Product]** : Not available.

<b>General</b>	: 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.
<b>Carcinogenicity</b>	: No known significant effects or critical hazards.
<b>Mutagenicity</b>	: No known significant effects or critical hazards.
<b>Reproductive toxicity</b>	: No known significant effects or critical hazards.



## SECTION 11: Toxicological information

### 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

Butan-1-ol

#### Result

##### 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

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

**Conclusion/Summary [Product]** : Not available.

### 12.2 Persistence and degradability

#### Product/ingredient name

iso-butanol

#### Result

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 <sub>ow</sub>	BCF	Potential
Xylene	3.12	8.1 to 25.9	Low
Ethylbenzene	3.6	-	Low
Butan-1-ol	1	-	Low
2-Methoxy-1-methylethyl acetate	1.2	-	Low
iso-butanol	1	-	Low

### 12.4 Mobility in soil

#### Soil/water partition coefficient

## SECTION 12: Ecological information

Product/ingredient name	logKoc	Koc
Ethylbenzene	2.2	170.406
Butan-1-ol	0.51	3.22078
2-Methoxy-1-methylethyl acetate	0.36	2.31363
iso-butanol	1.1	12.0246

### Results of PMT and vPvM assessment

Product/ingredient name	PMT	P	M	T	vPvM	vP	vM
Xylene	No	No	No	No	No	No	No
Ethylbenzene	No	No	No	No	No	No	No
Formaldehyde, polymer with 4-(1,1-dimethylethyl)phenol	No	No	No	No	No	No	No
Butan-1-ol	No	No	No	No	No	No	No
2-Methoxy-1-methylethyl acetate	No	No	No	No	No	No	No
iso-butanol	No	No	No	No	No	No	No
Quaternary ammonium compounds, C12-14 (evennumbered) - alkylethyldimethyl, ethyl sulphates	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
Xylene	No	N/A	No	Yes	No	N/A	No
Ethylbenzene	N/A	N/A	N/A	Yes	N/A	N/A	N/A
Formaldehyde, polymer with 4-(1,1-dimethylethyl)phenol	No	N/A	N/A	No	N/A	N/A	N/A
Butan-1-ol	No	N/A	N/A	No	N/A	N/A	N/A
2-Methoxy-1-methylethyl acetate	No	N/A	N/A	No	N/A	N/A	N/A
iso-butanol	No	N/A	N/A	No	N/A	N/A	N/A
Quaternary ammonium compounds, C12-14 (evennumbered) - alkylethyldimethyl, ethyl sulphates	No	N/A	N/A	No	N/A	N/A	N/A

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

Product/ingredient name	PBT	P	B	T	vPvB	vP	vB
Xylene	No	No	No	No	No	No	No
Ethylbenzene	No	No	No	No	No	No	No
Formaldehyde, polymer with 4-(1,1-dimethylethyl)phenol	No	No	No	No	No	No	No
Butan-1-ol	No	No	No	No	No	No	No
2-Methoxy-1-methylethyl acetate	No	No	No	No	No	No	No
iso-butanol	No	No	No	No	No	No	No
Quaternary ammonium compounds, C12-14 (evennumbered) - alkylethyldimethyl, ethyl sulphates	No	No	No	No	No	No	No

**Conclusion/Summary** : The product does not meet the criteria to be considered as a PBT or vPvB.

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

## SECTION 12: Ecological information

### 12.6 Endocrine disrupting properties

Not available.

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

### 12.7 Other adverse effects

No known significant effects or critical hazards.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Product

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

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





**European waste catalogue (EWC)** : 08 01 11\*

#### Packaging

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

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

## SECTION 14: Transport information

	ADR/RID	ADN	IMDG	IATA
14.1 UN number or ID number	UN1263	UN1263	UN1263	UN1263
14.2 UN proper shipping name	PAINT	PAINT	PAINT	PAINT
14.3 Transport hazard class(es)	3 	3 	3 	3 
14.4 Packing group	III	III	III	III
14.5 Environmental hazards	No.	Yes.	No.	No.

#### Additional information

**ADR/RID** : **Tunnel code** (D/E)

**ADN** : The product is only regulated as an environmentally hazardous substance when transported in tank vessels.

## SECTION 14: Transport information

**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]
TEKNOHEAT 1179-02	≥90	3

**Labelling** :

Other EU regulations

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

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

**Explosive precursors** : Not applicable.

Ozone depleting substances (EU 2024/590)

Not listed.

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

Not listed.

Persistent Organic Pollutants

Not listed.

Seveso Directive

This product is controlled under the Seveso Directive.

Danger criteria

Category
P5c

National regulations

Austria

**VbF class** : Category 3

**Limitation of the use of organic solvents** : Permitted.

Belgium

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

**Date of issue/Date of revision** : 08/12/2025 **Date of previous issue** : No previous validation **Version** : 2 **36/41**

TEKNOHEAT 1179-02 - BLACK

**Label No** : 137654

## SECTION 15: Regulatory information

Ingredient name	Status
Noirs de charbon	Listed
Silice	Listed
Silice	Listed

### Czech Republic

Storage code : II

### Denmark

Fire class : II-1

### Executive Order No. 1795/2015

Ingredient name	Annex I Section A	Annex I Section B
Ethylbenzene	Listed	-
carbon black respirable	Listed	-

MAL-code : 5-6

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, the following must be worn: respiratory protection and arm protectors/apron/coveralls/protective clothing as appropriate or as instructed.

MAL-code: 5-6

**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.

During non-atomising spraying in existing\* facilities of the combined-cabin, spray-cabin and spray-booth type where the operator is working inside the spray zone. When spraying in existing\* spray booths, if the operator is outside the spray zone. 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. 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.

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

- Air-supplied full mask 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.

## SECTION 15: Regulatory information

**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.

- 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** : Xylene RG 4bis, RG 84  
Ethylbenzene RG 84  
Butan-1-ol RG 84  
2-Methoxy-1-methylethyl acetate RG 84  
iso-butanol RG 84

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

### Germany

- Storage class (TRGS 510)** : 3

### Hazardous incident ordinance

This product is controlled under the Germany Hazardous Incident Ordinance.

### Danger criteria

Category	Reference number
P5c	1.2.5.3

- Hazard class for water** : 3

### Technical instruction on air quality control (TA Luft)

Number [Class]	Description	%
5.2.1	Total dust	17.9
5.2.2 [III]	Dusty inorganic substances	9
5.2.5	Organic substances	73
5.2.5 [I]	Organic substances	68
5.2.7.1.3	Reproductive toxic substances	0.017

- 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**



## SECTION 15: Regulatory information

Ingredient name	Carcinogen	Mutagen	Reproductive toxicity - Fertility	Reproductive toxicity - Development	Harmful via breastfeeding
xyleen mangaanverbindingen ethanol	- - Listed	- - -	- Fertility 2 Fertility 1A	Development 2 Development 2 Development 1A	- - Listed

**Water Discharge Policy (ABM)** : A(2) Toxic for aquatic organisms, may have long-term hazardous effects in aquatic environment. Decontamination effort: A

[Norway](#)

[Sweden](#)

**Flammable liquid class (SRVFS 2005:10)** : 2a

[Switzerland](#)

**VOC content** : VOC (w/w): 67.4%

[International regulations](#)

[Chemical Weapon Convention List Schedules I, II & III Chemicals](#)

Not listed.

[Montreal Protocol](#)

Not listed.

[Stockholm Convention on Persistent Organic Pollutants](#)

Not listed.

[Rotterdam Convention on Prior Informed Consent \(PIC\)](#)

Not listed.

[UNECE Aarhus Protocol on POPs and Heavy Metals](#)

Not listed.

**15.2 Chemical safety assessment** : This product contains substances for which Chemical Safety Assessments are still required.

## SECTION 16: Other information

🔍 Indicates information that has changed from previously issued version.

**Abbreviations and acronyms**

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

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

Classification	Justification
Flam. Liq. 3, H226 Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 STOT SE 3, H335 STOT RE 2, H373 Aquatic Chronic 3, H412	On basis of test data Calculation method Calculation method Calculation method Calculation method Calculation method Calculation method Calculation method

## SECTION 16: Other information

### Full text of abbreviated H statements

H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
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.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
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.
H412	Harmful to aquatic life with long lasting effects.

### Full text of classifications [CLP/GHS]

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 3	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3
Asp. Tox. 1	ASPIRATION HAZARD - Category 1
Eye Dam. 1	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
Eye Irrit. 2	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
Flam. Liq. 2	FLAMMABLE LIQUIDS - Category 2
Flam. Liq. 3	FLAMMABLE LIQUIDS - Category 3
Skin Corr. 1C	SKIN CORROSION/IRRITATION - Category 1C
Skin Irrit. 2	SKIN CORROSION/IRRITATION - Category 2
Skin Sens. 1	SKIN SENSITISATION - Category 1
Skin Sens. 1B	SKIN SENSITISATION - Category 1B
STOT RE 2	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2
STOT SE 3	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 3

**Date of issue/ Date of revision** : 08/12/2025

**Date of previous issue** : No previous validation

**Version** : 2

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### 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.

