

# SAFETY DATA SHEET



FERREX - All variants

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

### 1.1 Product identifier

**Product name** : FERREX - All variants

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

**Product use** : Paint.

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

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

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

### 1.4 Emergency telephone number

#### National advisory body/Poison Centre

**Telephone number** : In an emergency, call 112

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

**Product definition** : Mixture

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

Flam. Liq. 3, H226

Skin Irrit. 2, H315

Eye Irrit. 2, H319

STOT SE 3, H335

STOT SE 3, H336

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** : Warning

**Hazard statements** : H226 - Flammable liquid and vapour.  
H315 - Causes skin irritation.  
H319 - Causes serious eye irritation.  
H335 - May cause respiratory irritation.  
H336 - May cause drowsiness or dizziness.  
H373 - May cause damage to organs through prolonged or repeated exposure.  
H412 - Harmful to aquatic life with long lasting effects.

#### Precautionary statements

**General** : P102 - Keep out of reach of children.

## SECTION 2: Hazards identification

<b>Prevention</b>	: P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P260 - Do not breathe vapour.
<b>Response</b>	: P314 - Get medical advice/attention if you feel unwell.
<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: Naphtha (petroleum), hydrotreated heavy; Solvent naphtha (petroleum), light aromatic and Xylene
<b>Supplemental label elements</b>	: Contains 4-morpholinecarbaldehyde. May produce an allergic reaction.
<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
Naphtha (petroleum), hydrotreated heavy	REACH #: 01-2119463258-33 EC: 265-150-3 CAS: 64742-48-9 Index: 649-327-00-6	≥10 - ≤25	Flam. Liq. 3, H226 STOT SE 3, H336 Asp. Tox. 1, H304 EUH066	EUH066: C ≥ 50%	[1]
Solvent naphtha (petroleum), light aromatic	REACH #: 01-2119455851-35 EC: 265-199-0 CAS: 64742-95-6 Index: 649-356-00-4	≥10 - <25	Flam. Liq. 3, H226 STOT SE 3, H335 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Chronic 2, H411 EUH066	-	[1]
Xylene	REACH #: 01-2119488216-32 EC: 215-535-7 CAS: 1330-20-7 Index: 601-022-00-9	≥10 - ≤25	Flam. Liq. 3, H226 Acute Tox. 4, H312 Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335 STOT RE 2, H373 (oral, inhalation) Asp. Tox. 1, H304 Aquatic Chronic 3, H412	ATE [Dermal] = 1100 mg/kg ATE [Inhalation (vapours)] = 11 mg/l	[1] [2]
Ethylbenzene	REACH #: 01-2119489370-35 EC: 202-849-4 CAS: 100-41-4	≤3	Flam. Liq. 2, H225 Acute Tox. 4, H332 STOT RE 2, H373 (hearing organs) (oral,	ATE [Inhalation (vapours)] = 11 mg/l	[1] [2]

## SECTION 3: Composition/information on ingredients

2-Butoxyethanol	Index: 601-023-00-4  REACH #: 01-2119475108-36 EC: 203-905-0 CAS: 111-76-2 Index: 603-014-00-0	≤3	inhalation) Asp. Tox. 1, H304 Aquatic Chronic 3, H412  Acute Tox. 4, H302 Acute Tox. 3, H331 Skin Irrit. 2, H315 Eye Irrit. 2, H319	ATE [Oral] = 1200 mg/kg ATE [Inhalation (vapours)] = 3 mg/l	[1] [2]
Quartz (SiO <sub>2</sub> )	EC: 238-878-4 CAS: 14808-60-7	≤3	STOT RE 2, H373	-	[1]
4-morpholinecarbaldehyde	REACH #: 01-2119987993-12 EC: 224-518-3 CAS: 4394-85-8	<1	Skin Sens. 1, H317  <b>See Section 16 for the full text of the H statements declared above.</b>	-	[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** : 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. Get medical attention.
- Inhalation** : 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. Get medical attention. If necessary, call a poison center or physician. 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** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : 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. Get medical attention. If necessary, call a poison center or 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.

### 4.2 Most important symptoms and effects, both acute and delayed

Date of issue/Date of revision

: 14/01/2026

Date of previous issue

: 24/08/2023

Version : 10 3/41

FERREX - All variants

Label No : 40015

## SECTION 4: First aid measures

### Over-exposure signs/symptoms

<b>Eye contact</b>	: Adverse symptoms may include the following: pain or irritation watering redness
<b>Inhalation</b>	: Adverse symptoms may include the following: respiratory tract irritation coughing nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness
<b>Skin contact</b>	: Adverse symptoms may include the following: irritation redness
<b>Ingestion</b>	: No specific data.

### 4.3 Indication of any immediate medical attention and special treatment needed

<b>Notes to physician</b>	: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
<b>Specific treatments</b>	: No specific treatment.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

<b>Suitable extinguishing media</b>	: Use dry chemical, CO <sub>2</sub> , water spray (fog) or foam.
<b>Unsuitable extinguishing media</b>	: Do not use water jet.

### 5.2 Special hazards arising from the substance or mixture

<b>Hazards from the substance or mixture</b>	: 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.
<b>Hazardous combustion products</b>	: Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides phosphorus oxides metal oxide/oxides

### 5.3 Advice for firefighters

<b>Special protective actions for fire-fighters</b>	: 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.
<b>Special protective equipment for fire-fighters</b>	: 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. Avoid breathing 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). Do not breathe vapour or mist. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

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

## SECTION 7: Handling and storage

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidising materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. 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)</b> Absorbed through skin. 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.
2-Butoxyethanol	<b>Regulation on Limit Values - MAC (Austria, 12/2024)</b> Absorbed through skin. TWA 8 hours: 20 ppm. TWA 8 hours: 98 mg/m <sup>3</sup> . PEAK 30 minutes: 40 ppm 4 times per shift. PEAK 30 minutes: 200 mg/m <sup>3</sup> 4 times per shift.
Quartz (SiO <sub>2</sub> )	<b>Regulation on Limit Values - MAC (Austria, 12/2024) [Quarzfeinstaub]</b> Carc C. AMV 1 years: 0.05 mg/m <sup>3</sup> . Form: Respirable fraction.
Xylene	<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> .
Ethylbenzene	<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> .
2-Butoxyethanol	<b>Limit values (Belgium, 12/2023)</b> Absorbed through skin. TWA 8 hours: 20 ppm. TWA 8 hours: 98 mg/m <sup>3</sup> .



## SECTION 8: Exposure controls/personal protection

Quartz (SiO <sub>2</sub> )	<p>STEL 15 minutes: 50 ppm. STEL 15 minutes: 246 mg/m<sup>3</sup>.</p> <p><b>Limit values (Belgium, 12/2023) C.</b> TWA 8 hours: 0.1 mg/m<sup>3</sup>. Form: Respirable dust.</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>
2-Butoxyethanol	<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: 98 mg/m<sup>3</sup>. Limit value 15 minutes: 246 mg/m<sup>3</sup>. Limit value 15 minutes: 50 ppm. Limit value 8 hours: 20 ppm.</p>
Quartz (SiO <sub>2</sub> )	<p><b>Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 10/2003 (OEL). (Bulgaria, 4/2024) [respirable crystalline silica dust]</b> Limit value 8 hours: 0.1 mg/m<sup>3</sup>. Form: respirable dust.</p>
Solvent naphtha (petroleum), light aromatic	<p><b>Ordinance on the protection of workers from exposure to hazardous chemicals at work, exposure limit values (Annex I) (Croatia)</b> ELV: 100 ppm. ELV: 400 mg/m<sup>3</sup>.</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>
2-Butoxyethanol	<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: 246 mg/m<sup>3</sup>. STELV 15 minutes: 50 ppm. ELV 8 hours: 98 mg/m<sup>3</sup>. ELV 8 hours: 20 ppm.</p>
Quartz (SiO <sub>2</sub> )	<p><b>Ordinance on the protection of workers from exposure to hazardous chemicals at work, exposure limit values (Annex I) (Croatia, 12/2023)</b> ELV 8 hours: 0.1 mg/m<sup>3</sup>.</p>

## SECTION 8: Exposure controls/personal protection

Xylene	<p><b>Department of labour inspection (Cyprus, 7/2021) [Ξυλένιο, μικτά ισομερή, καθαρά]</b> Absorbed through skin.</p> <p>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.</p> <p>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-Butoxyethanol	<p><b>Department of labour inspection (Cyprus, 7/2021)</b> Absorbed through skin.</p> <p>STEL 15 minutes: 50 ppm. STEL 15 minutes: 246 mg/m<sup>3</sup>. TWA 8 hours: 20 ppm. TWA 8 hours: 98 mg/m<sup>3</sup>.</p>
Solvent naphtha (petroleum), light aromatic	<p><b>Government regulation of Czech Republic PEL/NPK-P (Czech Republic, 12/2023) [nafta solventní]</b></p> <p>TWA 8 hours: 200 mg/m<sup>3</sup>. STEL 15 minutes: 1000 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.</p> <p>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.</p> <p>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>
2-Butoxyethanol	<p><b>Government regulation of Czech Republic PEL/NPK-P (Czech Republic, 12/2023)</b> Absorbed through skin.</p> <p>TWA 8 hours: 98 mg/m<sup>3</sup>. TWA 8 hours: 20 ppm. STEL 15 minutes: 200 mg/m<sup>3</sup>. STEL 15 minutes: 40.7 ppm.</p>
Xylene	<p><b>Working Environment Authority (Denmark, 12/2024) [xylen, alle isomere]</b> Absorbed through skin.</p> <p>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.</p> <p>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>
2-Butoxyethanol	<p><b>Working Environment Authority (Denmark, 12/2024)</b> Absorbed through skin.</p> <p>TWA 8 hours: 20 ppm. TWA 8 hours: 98 mg/m<sup>3</sup>. STEL 15 minutes: 246 mg/m<sup>3</sup>. STEL 15 minutes: 50 ppm.</p>
Quartz (SiO <sub>2</sub> )	<p><b>Working Environment Authority (Denmark, 12/2024) K.</b></p> <p>TWA 8 hours: 0.1 mg/m<sup>3</sup>. Form: Respirable fraction. TWA 8 hours: 0.3 mg/m<sup>3</sup>. Form: total. STEL 15 minutes: 0.6 mg/m<sup>3</sup>. Form: total.</p>



## SECTION 8: Exposure controls/personal protection

Xylene

STEL 15 minutes: 0.2 mg/m<sup>3</sup>. Form: Respirable fraction.

**Occupational exposure limits, Regulation No. 293 (Estonia, 4/2024) [ksüleen]** Absorbed through skin.

TWA 8 hours: 50 ppm.

STEL 15 minutes: 100 ppm.

STEL 15 minutes: 450 mg/m<sup>3</sup>.

TWA 8 hours: 200 mg/m<sup>3</sup>.

Ethylbenzene

**Occupational exposure limits, Regulation No. 293 (Estonia, 4/2024)** 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.

2-Butoxyethanol

**Occupational exposure limits, Regulation No. 293 (Estonia, 4/2024)** Absorbed through skin, Sensitiser.

TWA 8 hours: 98 mg/m<sup>3</sup>.

TWA 8 hours: 20 ppm.

STEL 15 minutes: 246 mg/m<sup>3</sup>.

STEL 15 minutes: 50 ppm.

Quartz (SiO<sub>2</sub>)

**Occupational exposure limits, Regulation No. 293 (Estonia, 4/2024)** Carc.

TWA 8 hours: 2 mg/m<sup>3</sup>. Form: Respirable dust.

Xylene

**EU OEL (Europe, 1/2022) [xylene, mixed isomers]** 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

**EU OEL (Europe, 1/2022)** 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-Butoxyethanol

**EU OEL (Europe, 1/2022)** Absorbed through skin.

TWA 8 hours: 20 ppm.

TWA 8 hours: 98 mg/m<sup>3</sup>.

STEL 15 minutes: 50 ppm.

STEL 15 minutes: 246 mg/m<sup>3</sup>.

Naphtha (petroleum), hydrotreated heavy

**Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2020)**

TWA 8 hours: 500 mg/m<sup>3</sup>.

Solvent naphtha (petroleum), light aromatic

**Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2020)**

TWA 8 hours: 100 mg/m<sup>3</sup>.

Xylene

**Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021) [Ksyleeni]** 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

**Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021)** 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>.

2-Butoxyethanol

**Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021)** Absorbed through skin.



TWA 8 hours: 20 ppm.

TWA 8 hours: 98 mg/m<sup>3</sup>.

STEL 15 minutes: 50 ppm.

STEL 15 minutes: 250 mg/m<sup>3</sup>.

## SECTION 8: Exposure controls/personal protection

Quartz (SiO <sub>2</sub> )	<b>Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021) [Kiteinen piidioksidipöly] CARC.</b> TWA 8 hours: 0.1 mg/m <sup>3</sup> . Form: Respirable fraction.
 Solvent naphtha (petroleum), light aromatic	<b>Ministry of Labor (France, 6/2024) [hydrocarbures en C6-C12]</b> TWA 8 hours: 1000 mg/m <sup>3</sup> . Form: Vapour. Notes: Permissible limit values (circulars) STEL 15 minutes: 1500 mg/m <sup>3</sup> . Form: Vapour. Notes: Permissible limit values (circulars)
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 values (article R. 4412-149 of the Labor Code) STEL 15 minutes: 100 ppm. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code)
2-Butoxyethanol	<b>Ministry of Labor (France, 6/2024)</b> Absorbed through skin. TWA 8 hours: 10 ppm. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code) TWA 8 hours: 49 mg/m <sup>3</sup> . Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code) STEL 15 minutes: 246 mg/m <sup>3</sup> . Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code) STEL 15 minutes: 50 ppm. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code)
Quartz (SiO <sub>2</sub> )	<b>Ministry of Labor (France, 6/2024)</b> TWA 8 hours: 0.1 mg/m <sup>3</sup> . Form: Respirable fraction. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code)
 Naphtha (petroleum), hydrotreated heavy	<b>DFG MAC-values list (Germany, 7/2024)</b> Develop D. TWA 8 hours: 50 ppm. TWA 8 hours: 300 mg/m <sup>3</sup> . PEAK 15 minutes: 100 ppm 4 times per shift [Interval: 1 hour]. PEAK 15 minutes: 600 mg/m <sup>3</sup> 4 times per shift [Interval: 1 hour].
Xylene	<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].
Ethylbenzene	<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.

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2-Butoxyethanol	<p>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> <p><b>TRGS 900 OEL (Germany, 6/2024)</b> Absorbed through skin.  TWA 8 hours: 49 mg/m<sup>3</sup>.  PEAK 15 minutes: 98 mg/m<sup>3</sup>.  TWA 8 hours: 10 ppm.  PEAK 15 minutes: 20 ppm.</p> <p><b>DFG MAC-values list (Germany, 7/2024)</b> Develop C. Absorbed through skin.  TWA 8 hours: 10 ppm.  PEAK 15 minutes: 20 ppm 4 times per shift [Interval: 1 hour].  TWA 8 hours: 49 mg/m<sup>3</sup>.  PEAK 15 minutes: 98 mg/m<sup>3</sup> 4 times per shift [Interval: 1 hour].</p>
Quartz (SiO <sub>2</sub> )	<p><b>DFG MAC-values list (Germany, 7/2024) [Silica, crystalline]</b> Carc 1.</p>
Xylene	<p><b>Presidential Decree 307/1986: Occupational exposure limit values (Greece, 8/2024) [ξυλόλια (όλα τα ισομερή)]</b> 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>
2-Butoxyethanol	<p><b>Presidential Decree 307/1986: Occupational exposure limit values (Greece, 8/2024)</b> Absorbed through skin.  TWA 8 hours: 25 ppm.  TWA 8 hours: 120 mg/m<sup>3</sup>.</p>
Quartz (SiO <sub>2</sub> )	<p><b>Presidential Decree 307/1986: Occupational exposure limit values (Greece, 8/2024) [εργασία που συνεπάγεται έκθεση σε κρυσταλλικού διοξειδίου του πυριτίου, η οποία προκύπτει από διεργασία στο χώρο εργασίας]</b>  TWA 8 hours: 0.1 mg/m<sup>3</sup>. Form: respirable dust.</p>
Xylene	<p><b>5/2020. (II. 6.) ITM Decree (Hungary, 1/2025) [xilol izomerek keveréke]</b> 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>
2-Butoxyethanol	<p><b>5/2020. (II. 6.) ITM Decree (Hungary, 1/2025)</b> Absorbed through skin.  TWA 8 hours: 98 mg/m<sup>3</sup>.  PEAK 15 minutes: 246 mg/m<sup>3</sup>.  PEAK 15 minutes: 50 ppm.  TWA 8 hours: 20 ppm.</p>
Quartz (SiO <sub>2</sub> )	<p><b>5/2020. (II. 6.) ITM Decree (Hungary, 1/2025) [kristályos szilícium-dioxid (beleértve kvarc, krisztobalit, tridimit és egyéb formák)]</b>  TWA 8 hours: 0.1 mg/m<sup>3</sup>. Form: respirable powder.</p>

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Xylene	<p><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.</p>
Ethylbenzene	<p><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.</p>
2-Butoxyethanol	<p><b>Ministry of Welfare, List of Exposure Limits (Iceland, 11/2024)</b>          Absorbed through skin.          STEL 15 minutes: 246 mg/m<sup>3</sup>.          STEL 15 minutes: 50 ppm.          TWA 8 hours: 100 mg/m<sup>3</sup>.          TWA 8 hours: 20 ppm.</p>
Quartz (SiO <sub>2</sub> )	<p><b>Ministry of Welfare, List of Exposure Limits (Iceland, 11/2024)</b>          K.          TWA 8 hours: 0.1 mg/m<sup>3</sup>. Form: respirable dust.</p>
Xylene	<p><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>.</p>
Ethylbenzene	<p><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>.</p>
2-Butoxyethanol	<p><b>NAOSH (Ireland, 4/2024)</b> Absorbed through skin. Notes: EU derived Occupational Exposure Limit Values          OELV 8 hours: 20 ppm.          OELV 8 hours: 98 mg/m<sup>3</sup>.          OELV 15 minutes: 50 ppm.          OELV 15 minutes: 246 mg/m<sup>3</sup>.</p>
Quartz (SiO <sub>2</sub> )	<p><b>NAOSH (Ireland, 4/2024) [silica, crystalline]</b> Notes: EU derived Occupational Exposure Limit Values; List of Carcinogenic Substances, Mixtures and Processes          OELV 8 hours: 0.1 mg/m<sup>3</sup>. Form: respirable dust.</p>
Xylene	<p><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>.</p>
Ethylbenzene	<p><b>Legislative Decree No. 81/2008. Title IX. Protection from chemical agents, carcinogens and mutagens (Italy, 9/2024)</b>          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>
2-Butoxyethanol	<p><b>Legislative Decree No. 81/2008. Title IX. Protection from chemical agents, carcinogens and mutagens (Italy, 9/2024)</b>          Absorbed through skin.          Limit value 8 hours: 20 ppm.          Limit value 8 hours: 98 mg/m<sup>3</sup>.</p>

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Quartz (SiO <sub>2</sub> )	<p>Short Term 15 minutes: 50 ppm. Short Term 15 minutes: 246 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> <b>[silice cristallina]</b> Limit value 8 hours: 0.1 mg/m<sup>3</sup>. Form: respirable fraction.</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>
2-Butoxyethanol	<p><b>Ministers Cabinet Regulations Nr.325 - AER (Latvia, 3/2024)</b> Absorbed through skin. TWA 8 hours: 98 mg/m<sup>3</sup>. TWA 8 hours: 20 ppm. STEL 15 minutes: 50 ppm. STEL 15 minutes: 246 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>
2-Butoxyethanol	<p><b>Lithuanian Hygiene Standard HN 23 (Lithuania, 1/2024)</b> Absorbed through skin. TWA 8 hours: 50 mg/m<sup>3</sup>. TWA 8 hours: 10 ppm. STEL 15 minutes: 100 mg/m<sup>3</sup>. STEL 15 minutes: 20 ppm.</p>
Quartz (SiO <sub>2</sub> )	<p><b>Lithuanian Hygiene Standard HN 23 (Lithuania, 1/2024)</b> TWA 8 hours: 0.1 mg/m<sup>3</sup>. Form: Respirable fraction.</p>
Xylene	<p><b>Grand-Duchy Regulation 2016. Chemical agents. Annex I (Luxembourg, 3/2021) [xylène Isomères mixtes, pures]</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>Grand-Duchy Regulation 2016. Chemical agents. Annex I (Luxembourg, 3/2021)</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>.</p>
2-Butoxyethanol	<p><b>Grand-Duchy Regulation 2016. Chemical agents. Annex I (Luxembourg, 3/2021)</b> Absorbed through skin. TWA 8 hours: 20 ppm. TWA 8 hours: 98 mg/m<sup>3</sup>. STEL 15 minutes: 50 ppm.</p>

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Quartz (SiO <sub>2</sub> )	STEL 15 minutes: 246 mg/m <sup>3</sup> . <b>Grand-Duchy Regulation 2016. Carcinogens or mutagens agents. Annex III (Luxembourg, 3/2021) [poussière de silice cristalline alvéolaire]</b> TWA 8 hours: 0.1 mg/m <sup>3</sup> . Form: respirable dust.
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-Butoxyethanol	<b>EU OEL (Europe, 1/2022)</b> Absorbed through skin. TWA 8 hours: 20 ppm. TWA 8 hours: 98 mg/m <sup>3</sup> . STEL 15 minutes: 50 ppm. STEL 15 minutes: 246 mg/m <sup>3</sup> .
Xylene	<b>Ministry of Social Affairs and Employment, Legal limit values (Netherlands, 5/2024) [xyleen, o-, m-, p-isomeren]</b> Absorbed through skin. TWA 8 hours: 210 mg/m <sup>3</sup> . STEL 15 minutes: 442 mg/m <sup>3</sup> . STEL 15 minutes: 100 ppm. TWA 8 hours: 47.5 ppm.
Ethylbenzene	<b>Ministry of Social Affairs and Employment, Legal limit values (Netherlands, 5/2024)</b> Absorbed through skin. TWA 8 hours: 215 mg/m <sup>3</sup> . STEL 15 minutes: 430 mg/m <sup>3</sup> . STEL 15 minutes: 97.3 ppm. TWA 8 hours: 48.6 ppm.
2-Butoxyethanol	<b>Ministry of Social Affairs and Employment, Legal limit values (Netherlands, 5/2024)</b> Absorbed through skin. TWA 8 hours: 100 mg/m <sup>3</sup> . STEL 15 minutes: 246 mg/m <sup>3</sup> . TWA 8 hours: 20.4 ppm. STEL 15 minutes: 50 ppm.
Quartz (SiO <sub>2</sub> )	<b>Ministry of Social Affairs and Employment, Legal limit values (Netherlands, 5/2024)</b> Carc B1. TWA 8 hours: 0.075 mg/m <sup>3</sup> . Form: Respirable dust.
Xylene	<b>FOR-2011-12-06-1358 (Norway, 5/2024) [xylen]</b> Absorbed through skin. TWA 8 hours: 25 ppm. TWA 8 hours: 108 mg/m <sup>3</sup> .
Ethylbenzene	<b>FOR-2011-12-06-1358 (Norway, 5/2024)</b> Carc. Absorbed through skin. TWA 8 hours: 5 ppm. TWA 8 hours: 20 mg/m <sup>3</sup> .
2-Butoxyethanol	<b>FOR-2011-12-06-1358 (Norway, 5/2024)</b> Absorbed through skin. TWA 8 hours: 10 ppm. TWA 8 hours: 50 mg/m <sup>3</sup> .
Quartz (SiO <sub>2</sub> )	<b>FOR-2011-12-06-1358 (Norway, 5/2024)</b> Carc. TWA 8 hours: 0.05 mg/m <sup>3</sup> . Form: Respirable dust.



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Naphtha (petroleum), hydrotreated heavy	<p><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) [benzin to varnish]</b>  TWA 8 hours: 300 mg/m<sup>3</sup>.  STEL 15 minutes: 900 mg/m<sup>3</sup>.</p>
Xylene	<p><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) [xylene – mixed isomers (1,2-, 1,3-, 1,4-)]</b> Absorbed through skin.  TWA 8 hours: 100 mg/m<sup>3</sup>.  STEL 15 minutes: 200 mg/m<sup>3</sup>.</p>
Ethylbenzene	<p><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>.</p>
2-Butoxyethanol	<p><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: 98 mg/m<sup>3</sup>.  STEL 15 minutes: 200 mg/m<sup>3</sup>.</p>
Quartz (SiO <sub>2</sub> )	<p><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) [crystalline silica]</b>  TWA 8 hours: 0.1 mg/m<sup>3</sup>. Form: Respirable fraction.</p>
Xylene	<p><b>Portuguese Institute of Quality (Portugal, 11/2014) [xileno (isómeros o, m &amp; p)] A4.</b>  TWA 8 hours: 100 ppm.  STEL 15 minutes: 150 ppm.  <b>Decree-Law 24/2012 - Occupational exposure limits for chemical agents (Portugal, 6/2021) [xilenos]</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>Portuguese Institute of Quality (Portugal, 11/2014) A3.</b>  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.  TWA 8 hours: 442 mg/m<sup>3</sup>.</p>
2-Butoxyethanol	<p><b>Portuguese Institute of Quality (Portugal, 11/2014) A3.</b>  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: 50 ppm.  STEL 15 minutes: 246 mg/m<sup>3</sup>.  TWA 8 hours: 20 ppm.  TWA 8 hours: 98 mg/m<sup>3</sup>.</p>
Quartz (SiO <sub>2</sub> )	<p><b>Portuguese Institute of Quality (Portugal, 11/2014) A2.</b></p>

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Solvent naphtha (petroleum), light aromatic	<p>TWA 8 hours: 0.025 mg/m<sup>3</sup>. Form: Respirable fraction.  <b>Decree-Law 301/2000 - Occupational exposure limits for carcinogenic and mutagenic agents (Portugal, 12/2024)</b>  <b>[Poeira de sílica cristalina]</b>  TWA 8 hours: 0.05 mg/m<sup>3</sup>. Form: respirable dust.</p>
Xylene	<p><b>HG 1218/2006, Annex 1, with subsequent modifications and additions (Romania, 3/2024) [Solvent nafta]</b> Absorbed through skin.  VLA 8 hours: 100 mg/m<sup>3</sup>.  Short term 15 minutes: 200 mg/m<sup>3</sup>.</p>
Ethylbenzene	<p><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.</p>
2-Butoxyethanol	<p><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.</p>
Quartz (SiO <sub>2</sub> )	<p><b>HG 1218/2006, Annex 1, with subsequent modifications and additions (Romania, 3/2024)</b> Absorbed through skin.  VLA 8 hours: 98 mg/m<sup>3</sup>.  VLA 8 hours: 20 ppm.  Short term 15 minutes: 246 mg/m<sup>3</sup>.  Short term 15 minutes: 50 ppm.</p>
Xylene	<p><b>HG 1218/2006, Annex 4, with subsequent modifications and additions (Romania, 3/2024)</b>  VLA 8 hours: 0.1 mg/m<sup>3</sup>. Form: Respirable dust.</p>
Ethylbenzene	<p><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).</p>
2-Butoxyethanol	<p><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.</p>
Quartz (SiO <sub>2</sub> )	<p><b>Government regulation SR c. 355/2006 (Slovakia, 6/2024)</b> Absorbed through skin , Inhalation sensitiser.  TWA 8 hours: 98 mg/m<sup>3</sup>.  TWA 8 hours: 20 ppm.  STEL 15 minutes: 246 mg/m<sup>3</sup>.  STEL 15 minutes: 50 ppm.</p>
	<p><b>Government regulation SR c. 356/2006 (Slovakia, 9/2020) Carc 1A.</b>  Technical guidance value 8 hours: 0.1 mg/m<sup>3</sup>. Form: respirable fraction.</p>
	<p><b>Government regulation SR c. 355/2006 (Slovakia, 6/2024)</b> Inhalation sensitiser.  TWA 8 hours: 0.1 mg/m<sup>3</sup>. Form: respirable fiber.</p>

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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>
2-Butoxyethanol	<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: 98 mg/m<sup>3</sup>.  TWA 8 hours: 20 ppm.  KTV 15 minutes: 246 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: 50 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>
2-Butoxyethanol	<p><b>National institute of occupational safety and health (Spain, 1/2024)</b> Absorbed through skin.  TWA 8 hours: 20 ppm.  TWA 8 hours: 98 mg/m<sup>3</sup>.  STEL 15 minutes: 245 mg/m<sup>3</sup>.  STEL 15 minutes: 50 ppm.</p>
Quartz (SiO <sub>2</sub> )	<p><b>National institute of occupational safety and health (Spain, 1/2024) [Sílice Cristalina]</b>  TWA 8 hours: 0.05 mg/m<sup>3</sup>. Form: Respirable fraction.</p>
Naphtha (petroleum), hydrotreated heavy	<p><b>Work environment authority Regulation 2018:1 (Sweden, 9/2020)</b>  TWA 8 hours: 50 ppm.  TWA 8 hours: 300 mg/m<sup>3</sup>.  STEL 15 minutes: 100 ppm.  STEL 15 minutes: 600 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.</p>

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2-Butoxyethanol	<p>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> <p><b>Work environment authority Regulation 2018:1 (Sweden, 11/2022)</b> Absorbed through skin. TWA 8 hours: 10 ppm. TWA 8 hours: 50 mg/m<sup>3</sup>. STEL 15 minutes: 50 ppm. STEL 15 minutes: 246 mg/m<sup>3</sup>.</p>
Quartz (SiO <sub>2</sub> )	<p><b>Work environment authority Regulation 2018:1 (Sweden, 11/2022)</b> Carc. TWA 8 hours: 0.1 mg/m<sup>3</sup>. Form: respirable fraction.</p>
Naphtha (petroleum), hydrotreated heavy	<p><b>SUVA (Switzerland, 1/2025)</b> STEL 15 minutes: 600 mg/m<sup>3</sup>. STEL 15 minutes: 100 ppm. TWA 8 hours: 50 ppm. TWA 8 hours: 300 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>
2-Butoxyethanol	<p><b>SUVA (Switzerland, 1/2025)</b> Absorbed through skin. TWA 8 hours: 10 ppm. TWA 8 hours: 49 mg/m<sup>3</sup>. STEL 15 minutes: 20 ppm. STEL 15 minutes: 98 mg/m<sup>3</sup>.</p>
Quartz (SiO <sub>2</sub> )	<p><b>SUVA (Switzerland, 1/2025) [Siliciumdioxid, kristallin]</b> Carc 1A. TWA 8 hours: 0.15 mg/m<sup>3</sup>. Form: Respirable fraction.</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>
2-Butoxyethanol	<p><b>EH40/2005 WELs (United Kingdom (UK), 1/2020)</b> Absorbed through skin. STEL 15 minutes: 50 ppm. TWA 8 hours: 25 ppm. STEL 15 minutes: 246 mg/m<sup>3</sup>. TWA 8 hours: 123 mg/m<sup>3</sup>.</p>
Quartz (SiO <sub>2</sub> )	<p><b>EH40/2005 WELs (United Kingdom (UK), 1/2020) [silica, respirable crystalline]</b> Carc. TWA 8 hours: 0.1 mg/m<sup>3</sup>. Form: Respirable fraction.</p>

### [Biological exposure indices](#)

## SECTION 8: Exposure controls/personal protection

Product/ingredient name	Exposure indices
<p>Xylene</p> <p>No exposure indices known.</p>	<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>
<p>Ethylbenzene</p>	<p><b>Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 13/2003. (Bulgaria, 4/2024) Notes:</b>            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>
<p>Xylene</p>	<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>
<p>Ethylbenzene</p>	<p><b>Ordinance on the protection of workers from exposure to hazardous chemicals at work, biological limit values (Annex IV) (Croatia, 12/2023)</b>            BEI: 1.5 mg/l, ethylbenzene [in blood]. Sampling time: during exposure.            BEI: 14.1 µmol/l, ethylbenzene [in blood]. Sampling time: during exposure.            BEI: 1.12 mol/mol creatinine, almond acid [in urine]. Sampling time: at the end of the work shift and at the end of the working week.            BEI: 1.5 g/g creatinine, almond acid [in urine]. Sampling time: at the end of the work shift and at the end of the working week.</p>
<p>No exposure indices known.</p>	
<p>Xylene</p>	<p><b>Government regulation of Czech Republic Limit Values of Biological Exposure Tests (Czech Republic, 9/2015) [Xyleny]</b>            Biological limit values: 820 µmol/mmol creatinine, methylhippuric acid [in urine]. Sampling time: end of the shift.            Biological limit values: 1400 mg/g creatinine, methylhippuric acid [in urine]. Sampling time: end of the shift.</p>
<p>Ethylbenzene</p>	<p><b>Government regulation of Czech Republic Limit Values of Biological Exposure Tests (Czech Republic, 9/2015)</b>            Biological limit values: 1100 µmol/mmol creatinine, almond acid [in urine]. Sampling time: end of the shift.            Biological limit values: 1500 mg/g creatinine, almond acid [in urine]. Sampling time: end of the shift.</p>
<p>2-Butoxyethanol</p>	<p><b>Government regulation of Czech Republic Limit Values of Biological Exposure Tests (Czech Republic, 9/2015)</b>            Biological limit values: 0.17 mmol/mmol creatinine, butoxyacetic acid (after hydrolysis) [in urine]. Sampling time: the end of the shift at the end of the week.            Biological limit values: 200 mg/g creatinine, butoxyacetic acid (after hydrolysis) [in urine]. Sampling time: the end of the shift at the end of the week.</p>
<p>No exposure indices known.</p>	

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No exposure indices known.

No exposure indices known.

Xylene

**Institute of Occupational Health, Ministry of Social Affairs (Finland, 9/2020) [Ksyleeni]**

BEI: 5 mmol/l, methylhippuric acid [in urine]. Sampling time: at the end of the work shift.

Ethylbenzene

**Institute of Occupational Health, Ministry of Social Affairs (Finland, 9/2020)**

BEI: 5.2 mmol/l, mandelic acid [in urine]. Sampling time: after work shift at the end of the working week or exposure period.

2-Butoxyethanol

**Biological limit values (BLV) - Labour Code / ANSES (France, 4/2023) [2- butoxyéthanol et son acétate]**

BLV: 100 mg/g Cr, 2-butoxyacetic acid [in urine]. Sampling time: end of shift (regardless of the day of the week).

Xylene

**DFG BEI-values list (Germany, 7/2024) [Xylene (all isomers)]**

Notes: danger from percutaneous absorption (see p. 211 and p. 228).

BEI: 1800 mg/g creatinine, Methylhippuric acids (=toluric acids) (all isomers) [in urine]. Sampling time: end of exposure or end of shift.

**TRGS 903 - BEI Values (Germany, 10/2024) [Xylol alle Isomeren]**

BEI: 2000 mg/l, methylhippuric acid [in urine]. Sampling time: end of exposure or end of shift.

Ethylbenzene

**DFG BEI-values list (Germany, 7/2024)** Notes: danger from percutaneous absorption (see p. 211 and p. 228).

BEI: 250 mg/g creatinine, mandelic acid plus phenyl glyoxylic acid [in urine]. Sampling time: end of exposure or end of shift.

**TRGS 903 - BEI Values (Germany, 10/2024)**

BEI: 250 mg/g creatinine, mandelic acid plus phenylglyoxylic acid [in urine]. Sampling time: end of exposure or end of shift.

2-Butoxyethanol

**DFG BEI-values list (Germany, 7/2024)** Notes: danger from percutaneous absorption (see p. 211 and p. 228).

BEI: 150 mg/g creatinine, butoxyacetic acid (after hydrolysis) [in urine]. Sampling time: at the end of the shift, for long-term exposures after several previous shifts.

**TRGS 903 - BEI Values (Germany, 10/2024)**

BEI: 150 mg/g creatinine, butoxy acetic acid (after hydrolysis) [in urine]. Sampling time: at the end of the shift, for long-term exposure after several previous shifts.

No exposure indices known.

Xylene

**5/2020. (II. 6.) ITM Decree (Hungary, 12/2023) [xilol]**

BEI: 1500 mg/g creatinine, methylhippuric acid [in urine]. Sampling time: at the end of the shift.

BEI: 860 µmol/mmol creatinine, methylhippuric acid [in urine]. Sampling time: at the end of the shift.

Ethylbenzene

**5/2020. (II. 6.) ITM Decree (Hungary, 12/2023)**

BEI: 1500 mg/g creatinine, mandelic acid [in urine]. Sampling time: at the end of the working week; at the end of the shift.

BEI: 1110 µmol/mmol creatinine, mandelic acid [in urine]. Sampling time: at the end of the working week; at the end of the shift.

No exposure indices known.



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Xylene	<p><b>NAOSH BGVs (Ireland, 1/2011) [Xylene]</b>            BMGV: 1.5 g/g creatinine, methylhippuric acids [in urine].            Sampling time: end of shift - As soon as possible after exposure ceases.</p>
Ethylbenzene	<p><b>NAOSH BGVs (Ireland, 1/2011)</b>            BMGV: Semi-quantitative, the biological analyte is an indicator of exposure to the substance but the quantitative interpretation of the measurement is ambiguous. These analytes should be used as a screening test if a quantitative test is not practical; or as a confirmatory test if the quantitative test is not specific and the origin of the determinant is in question., ethylbenzene [in endexhaled air].            Sampling time: not critical.            BMGV: 0.7 g/g creatinine [Semi-quantitative, the biological analyte is an indicator of exposure to the substance but the quantitative interpretation of the measurement is ambiguous. These analytes should be used as a screening test if a quantitative test is not practical; or as a confirmatory test if the quantitative test is not specific and the origin of the determinant is in question.], mandelic acid and phenylglyoxylic acid [in urine]. Sampling time: end of shift at end of workweek.</p>
2-Butoxyethanol	<p><b>NAOSH BGVs (Ireland, 1/2011)</b>            BMGV: 200 mg/g creatinine, BAA [in urine]. Sampling time: end of shift - As soon as possible after exposure ceases.</p>
No exposure indices known.	
Xylene	<p><b>Minister Cabinet Regulations No.325 - BEI (Latvia, 3/2024) [ksiloli (visi izomēri)]</b>            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>
No exposure indices known.	
No exposure indices known.	
No exposure indices known.	
No exposure indices known.	
No exposure indices known.	
Xylene	<p><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.</p>
Ethylbenzene	<p><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.</p>
2-Butoxyethanol	<p><b>Portuguese Institute of Quality (Portugal, 11/2014)</b>            BEI: 200 mg/g creatinine, butoxyacetic acid (BAA) [in urine].            Sampling time: end of shift.</p>
Xylene	<p><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.</p>
Ethylbenzene	<p><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.</p>

## SECTION 8: Exposure controls/personal protection

Xylene

**Government regulation SR c. 355/2006 (Slovakia, 6/2024)**

**[xylén (všetky izoméry)]**

BLV: 781 µmol/mmol creatinine, as sum of 2,3,4-methylhippuroic acids [in urine]. Sampling time: at the end of exposure or work shift.

BLV: 1334 mg/g creatinine, as sum of 2,3,4-methylhippuroic acids [in urine]. Sampling time: at the end of exposure or work shift.

BLV: 10355 µmol/l, as sum of 2,3,4-methylhippuroic acids [in urine]. Sampling time: at the end of exposure or work shift.

BLV: 14.6 µmol/l, as xylene [in blood]. Sampling time: at the end of exposure or work shift.

BLV: 2000 mg/l, as sum of 2,3,4-methylhippuroic acids [in urine]. Sampling time: at the end of exposure or work shift.

BLV: 1.5 mg/l, as xylene [in blood]. Sampling time: at the end of exposure or work shift.

Ethylbenzene

**Government regulation SR c. 355/2006 (Slovakia, 6/2024)**

BLV: 799 µmol/mmol creatinine, as mandelic acid and phenylglyoxylic acid [in urine]. Sampling time: at the end of exposure or work shift; long-term exposure: after several work shifts.

BLV: 7.44 µmol/mmol creatinine, as 2 or 4-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.

Xylene

**Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 4/2024)**  
**[ksilen (vse izomere)]**

BAT: 2 g/l, methylhippuric acid (all isomers) [in urine]. Sampling time: at the end of the work shift.

Ethylbenzene

**Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 4/2024)**

BAT: 250 mg/g creatinine, mandelic acid and phenylglyoxylic acid [in urine]. Sampling time: at the end of the work shift.

2-Butoxyethanol

**Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 4/2024)**

BAT: 150 mg/g creatinine, butoxyacetic acid (after hydrolysis) [in urine]. Sampling time: at the end of the work shift, at long-term exposure: at the end of the work shift after several consecutive workdays.

## SECTION 8: Exposure controls/personal protection

Xylene	<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.
Ethylbenzene	<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.
2-Butoxyethanol	<b>National institute of occupational safety and health (Spain, 1/2024)</b> VLB: 200 mg/g creatinine, butoxyacetic acid [in urine]. Sampling time: end of shift.
No exposure indices known.	
Xylene	<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.
Ethylbenzene	<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.
2-Butoxyethanol	<b>SUVA (Switzerland, 1/2025)</b> BEI: 150 mg/g creatinine, 2-butoxy acetic acid (after hydrolisis) [in urine]. Sampling time: immediately after exposure or after working hours. In case of long-term exposure: after more than one shift.
Xylene	<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.
2-Butoxyethanol	<b>EH40/2005 BMGVs (United Kingdom (UK), 1/2020)</b> BGV: 240 mmol/mol creatinine, butoxyacetic acid [in urine]. Sampling time: post shift.

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

### DNELs/DMELs

#### Product/ingredient name

Naphtha (petroleum), hydrotreated heavy

#### Result

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

0.41 mg/m<sup>3</sup>

Effects: Systemic

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

1.9 mg/m<sup>3</sup>

Effects: Systemic

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

178.57 mg/m<sup>3</sup>

Effects: Local

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

640 mg/m<sup>3</sup>

## SECTION 8: Exposure controls/personal protection

Effects: Local

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

837.5 mg/m<sup>3</sup>

Effects: Local

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

1066.67 mg/m<sup>3</sup>

Effects: Local

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

1152 mg/m<sup>3</sup>

Effects: Systemic

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

1286.4 mg/m<sup>3</sup>

Effects: Systemic

Solvent naphtha (petroleum), light aromatic

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

0.41 mg/m<sup>3</sup>

Effects: Systemic

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

1.9 mg/m<sup>3</sup>

Effects: Systemic

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

178.57 mg/m<sup>3</sup>

Effects: Local

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

640 mg/m<sup>3</sup>

Effects: Local

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

837.5 mg/m<sup>3</sup>

Effects: Local

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

1066.67 mg/m<sup>3</sup>

Effects: Local

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

1152 mg/m<sup>3</sup>

Effects: Systemic

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

1286.4 mg/m<sup>3</sup>

Effects: Systemic

Xylene

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

5 mg/kg bw/day

Effects: Systemic

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

65.3 mg/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

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### **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

### **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**

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**

6.3 mg/kg bw/day

Effects: Systemic

### **DNEL - General population - Short term - Oral**

26.7 mg/kg bw/day

Effects: Systemic

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

Ethylbenzene

2-Butoxyethanol

## SECTION 8: Exposure controls/personal protection

59 mg/m<sup>3</sup>

Effects: Systemic

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

98 mg/m<sup>3</sup>

Effects: Systemic

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

147 mg/m<sup>3</sup>

Effects: Local

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

246 mg/m<sup>3</sup>

Effects: Local

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

426 mg/m<sup>3</sup>

Effects: Systemic

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

1091 mg/m<sup>3</sup>

Effects: Systemic

4-morpholinecarbaldehyde

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

4.17 mg/kg bw/day

Effects: Systemic

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

4.17 mg/kg bw/day

Effects: Systemic

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

8.93 mg/m<sup>3</sup>

Effects: Systemic

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

11.7 mg/kg bw/day

Effects: Systemic

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

13.3 mg/m<sup>3</sup>

Effects: Local

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

13.3 mg/m<sup>3</sup>

Effects: Local

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

50.3 mg/m<sup>3</sup>

Effects: Systemic

### PNECs

Not available.

## 8.2 Exposure controls

### **Appropriate engineering controls**

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

### Individual protection measures

*Date of issue*/*Date of revision*

: 14/01/2026

*Date of previous issue*

: 24/08/2023

*Version* : 10 26/41

FERREX - All variants

**Label No** : 40015



## SECTION 8: Exposure controls/personal protection

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.
- 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
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

## SECTION 9: Physical and chemical properties

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

### 9.1 Information on basic physical and chemical properties

#### Appearance

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

## SECTION 9: Physical and chemical properties

Ingredient name	°C	°F	Method
Solvent naphtha (petroleum), light aromatic	135 to 210	275 to 410	
Ethylbenzene	136.1	277	OECD 104

**Flammability** : Not available.

**Lower and upper explosion limit** : Lower: 0.8% (xylene)  
Upper: 7.6% (Naphtha (petroleum), hydrotreated heavy)

**Flash point** : Closed cup: 25°C (77°F)

**Auto-ignition temperature** :

Ingredient name	°C	°F	Method
2-Butoxyethanol	230	446	DIN 51794
Naphtha (petroleum), hydrotreated heavy	280 to 470	536 to 878	

**Decomposition temperature** : Not available.

**pH** : Not applicable.

**Viscosity** : Kinematic (40°C): >20.5 mm<sup>2</sup>/s

**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
Ethylbenzene	9.30076	1.2				
Xylene	6.7	0.89				

**Relative density** : Not available.

**Density** : 1.2 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

**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.

## SECTION 10: Stability and reactivity

**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

Naphtha (petroleum), hydrotreated heavy

##### Result

**Rat - Oral - LD50**

>6 g/kg

**Rat - Inhalation - LC50 Vapour**

8500 mg/m<sup>3</sup> [4 hours]

Toxic effects: Lung, Thorax, or Respiration - Other changes

Solvent naphtha (petroleum), light aromatic

**Rat - Oral - LD50**

8400 mg/kg

Toxic effects: Behavioral - Somnolence (general depressed activity) Behavioral - Tremor Lung, Thorax, or Respiration - Other changes

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]

**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)
FERREX	61180.9	9996.0	N/A	53.4	N/A
Solvent naphtha (petroleum), light aromatic	8400	N/A	N/A	N/A	N/A
Xylene	4300	1100	N/A	11	N/A
Ethylbenzene	3500	15400	N/A	11	29000
2-Butoxyethanol	1200	N/A	N/A	3	N/A

#### Skin corrosion/irritation

##### Product/ingredient name

##### Result

## SECTION 11: Toxicological information

Xylene

### Rat - Skin - Mild irritant

Duration of treatment/exposure: 8 hours

Amount/concentration applied: 60 uL

### Rabbit - Skin - Moderate irritant

Duration of treatment/exposure: 24 hours

Amount/concentration applied: 500 mg

### Rabbit - Skin - Moderate irritant

Amount/concentration applied: 100 %

Ethylbenzene

### Rabbit - Skin - Mild irritant

Duration of treatment/exposure: 24 hours

Amount/concentration applied: 15 mg

2-Butoxyethanol

### Rabbit - Skin - Mild irritant

Amount/concentration applied: 500 mg

4-morpholinecarbaldehyde

### Rabbit - Skin - Mild irritant

Duration of treatment/exposure: 24 hours

Amount/concentration applied: 500 mg

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

### Serious eye damage/eye irritation

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

Solvent naphtha (petroleum), light aromatic

#### **Result**

##### **Rabbit - Eyes - Mild irritant**

Duration of treatment/exposure: 24 hours

Amount/concentration applied: 100 uL

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

2-Butoxyethanol

##### **Rabbit - Eyes - Moderate irritant**

Duration of treatment/exposure: 24 hours

Amount/concentration applied: 100 mg

##### **Rabbit - Eyes - Severe irritant**

Amount/concentration applied: 100 mg

4-morpholinecarbaldehyde

##### **Rabbit - Eyes - Mild irritant**

Duration of treatment/exposure: 24 hours

Amount/concentration applied: 500 mg

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

### Respiratory corrosion/irritation

Not available.

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

### Respiratory or skin sensitization

Not available.

## SECTION 11: Toxicological information

### 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

☑ Naphtha (petroleum), hydrotreated heavy  
Solvent naphtha (petroleum), light aromatic

Xylene

#### Result

STOT SE 3, H336 (Narcotic effects)  
STOT SE 3, H335 (Respiratory tract irritation)  
STOT SE 3, H336 (Narcotic effects)  
STOT SE 3, H335 (Respiratory tract irritation)

### Specific target organ toxicity (repeated exposure)

#### Product/ingredient name

☑ Xylene  
Ethylbenzene  
Quartz (SiO<sub>2</sub>)

#### Result

STOT RE 2, H373 (oral, inhalation)  
STOT RE 2, H373 (hearing organs) (oral, inhalation)  
STOT RE 2, H373

### Aspiration hazard

#### Product/ingredient name

Naphtha (petroleum), hydrotreated heavy  
Solvent naphtha (petroleum), light aromatic  
Xylene  
Ethylbenzene

#### Result

ASPIRATION HAZARD - Category 1  
ASPIRATION HAZARD - Category 1  
ASPIRATION HAZARD - Category 1  
ASPIRATION HAZARD - Category 1

### Information on likely routes of exposure

Not available.

### Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation.
- Skin contact** : Causes skin irritation.
- Ingestion** : Can cause central nervous system (CNS) depression.

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

- Eye contact** : Adverse symptoms may include the following:  
pain or irritation  
watering  
redness

## SECTION 11: Toxicological information

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

**Skin contact** : Adverse symptoms may include the following:  
irritation  
redness

**Ingestion** : No specific data.

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

#### Short term exposure

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

#### Long term exposure

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

#### Potential chronic health effects

Not available.

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

**General** : May cause damage to organs through prolonged or repeated exposure.

**Carcinogenicity** : No known significant effects or critical hazards.

**Mutagenicity** : No known significant effects or critical hazards.

**Reproductive toxicity** : No known significant effects or critical hazards.

## 11.2 Information on other hazards

### 11.2.1 Endocrine disrupting properties

Not available.

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

### 11.2.2 Other information

Not available.

## SECTION 12: Ecological information

### 12.1 Toxicity

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

Solvent naphtha (petroleum), light aromatic

#### **Result**

##### **Acute - LC50**

Fish  
9.2 mg/l [96 hours]

##### **Acute - EC50**

Daphnia  
3.2 mg/l [48 hours]

2-Butoxyethanol

##### **Acute - LC50 - Marine water**

Fish - Inland silverside - *Menidia beryllina*  
Size: 40 to 100 mm  
1250000 µg/l [96 hours]  
Effect: Mortality

##### **Acute - LC50 - Marine water**

Crustaceans - Common shrimp, sand shrimp - *Crangon crangon*



## SECTION 12: Ecological information

800000 µg/l [48 hours]

Effect: Mortality

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

### 12.2 Persistence and degradability

Not available.

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

### 12.3 Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
Naphtha (petroleum), hydrotreated heavy	-	10 to 2500	High
Solvent naphtha (petroleum), light aromatic	-	10 to 2500	High
Xylene	3.12	8.1 to 25.9	Low
Ethylbenzene	3.6	-	Low
2-Butoxyethanol	0.81	-	Low
4-morpholinecarbaldehyde	-	<1.9 [OECD 305 C]	Low

### 12.4 Mobility in soil

#### Soil/water partition coefficient

Product/ingredient name	logK <sub>oc</sub>	K <sub>oc</sub>
Ethylbenzene	2.2	170.406
2-Butoxyethanol	1.8	67.3685
4-morpholinecarbaldehyde	1.6	39.587

#### Results of PMT and vPvM assessment

Product/ingredient name	PMT	P	M	T	vPvM	vP	vM
Naphtha (petroleum), hydrotreated heavy	No	No	No	No	No	No	No
Solvent naphtha (petroleum), light aromatic	No	No	No	No	No	No	No
Xylene	No	No	No	No	No	No	No
Ethylbenzene	No	No	No	No	No	No	No
2-Butoxyethanol	No	No	No	No	No	No	No
Quartz (SiO <sub>2</sub> )	No	No	No	No	No	No	No
4-morpholinecarbaldehyde	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
Naphtha (petroleum), hydrotreated heavy	No	N/A	No	No	No	N/A	No
Solvent naphtha (petroleum), light aromatic	No	N/A	No	No	No	N/A	No
Xylene	No	N/A	No	Yes	No	N/A	No
Ethylbenzene	N/A	N/A	N/A	Yes	N/A	N/A	N/A
2-Butoxyethanol	No	N/A	N/A	No	N/A	N/A	N/A
Quartz (SiO <sub>2</sub> )	No	No	No	No	No	No	No
4-morpholinecarbaldehyde	No	N/A	No	No	No	N/A	No

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

## SECTION 12: Ecological information

Product/ingredient name	PBT	P	B	T	vPvB	vP	vB
Naphtha (petroleum), hydrotreated heavy	No	No	No	No	No	No	No
Solvent naphtha (petroleum), light aromatic	No	No	No	No	No	No	No
Xylene	No	No	No	No	No	No	No
Ethylbenzene	No	No	No	No	No	No	No
2-Butoxyethanol	No	No	No	No	No	No	No
Quartz (SiO <sub>2</sub> )	No	No	No	No	No	No	No
4-morpholinecarbaldehyde	No	No	No	No	No	No	No

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

### 12.6 Endocrine disrupting properties

Not available.

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

### 12.7 Other adverse effects

No known significant effects or critical hazards.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Product

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

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

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





#### Packaging

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

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

## SECTION 14: Transport information

## 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.	No.	No.	No.

### Additional information

#### ADR/RID

: **Viscous liquid exception** This class 3 viscous liquid is not subject to regulation in packagings up to 450 L according to 2.2.3.1.5.1.  
**Tunnel code** (D/E)

#### ADN

: **Viscous liquid exception** This class 3 viscous liquid is not subject to regulation in packagings up to 450 L according to 2.2.3.1.5.1.

#### IMDG

: **Emergency schedules**  
**Viscous liquid exception** This class 3 viscous liquid is not subject to regulation in packagings up to 450 L according to 2.3.2.5.

**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]
FERREX	≥90	3

#### Labelling

:

#### Other EU regulations

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

## SECTION 15: Regulatory information

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

**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
 5c


**National regulations**

**Austria**

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

**Belgium**

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

Ingredient name	Status
 Silice	Listed
Noirs de charbon	Listed
Silice	Listed
Silice	Listed


**Czech Republic**

**Storage code** : II

**Denmark**

**Fire class** : 1

**Executive Order No. 1795/2015**

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

**MAL-code** : 4-6

**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.

## SECTION 15: Regulatory information

MAL-code: 4-6

**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.

When using scraper or knife, brush, roller, etc. for pre- and post-treatments in cabins or booths of the existing\* facility type, if the operator is inside the spray zone. When using scraper or knife, brush, roller, etc. for pre- and post-treatments outside a closed facility, spray booth or spray cabin.

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

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

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

When spraying in existing\* spray booths, if the operator is outside the spray zone. During non-atomising spraying in existing\* facilities of the combined-cabin, spray-cabin and spray-booth type where the operator is working inside the spray zone. During downtimes, cleaning and repair in closed facilities, spray booths or cabins, if there is a risk of contact with wet paint or organic solvents.

- Air-supplied full mask and protective clothing must be worn.

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

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

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

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

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

\*See Regulations.

<b>Restrictions on use</b>	: 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.
<b>List of undesirable substances</b>	: Not listed
<b>Carcinogenic waste</b>	: Waste containers must be labeled: Contains a substance or substances regulated by Danish working environment legislation on cancer risks.

### Finland

### France

<b>Social Security Code, Articles L 461-1 to L 461-7</b>	: Naphtha (petroleum), hydrotreated heavy	RG 84
	Solvent naphtha (petroleum), light aromatic	RG 84
	Xylene	RG 4bis, RG 84
	Ethylbenzene	RG 84
	2-Butoxyethanol	RG 84
	Quartz (SiO <sub>2</sub> )	RG 25

## SECTION 15: Regulatory information

**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** : 

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


Number [Class]	Description	%
 5.2.1	Total dust	53.3
5.2.5	Organic substances	46.7
5.2.5 [I]	Organic substances	15.8

### Italy

**D.Lgs. 152/06** : Not determined.

### Netherlands

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

Ingredient name	Carcinogen	Mutagen	Reproductive toxicity - Fertility	Reproductive toxicity - Development	Harmful via breastfeeding
 Naphtha (petroleum), hydrotreated heavy	Listed	Listed	-	-	-
Solvent naphtha (petroleum), light arom.	Listed	Listed	-	-	-
xyleen	-	-	-	Development 2	-
silica kristallijn; respirabel stof	Listed	-	-	-	-

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

### Norway

### Sweden

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

### Switzerland

**VOC content** : VOC (w/w): 41.9%

### International regulations

#### Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

#### Montreal Protocol

Not listed.

#### Stockholm Convention on Persistent Organic Pollutants

Not listed.

#### Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

#### UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.



## SECTION 15: Regulatory information

### 15.2 Chemical safety assessment

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

## SECTION 16: Other information

Indicates information that has changed from previously issued version.

### Abbreviations and acronyms

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

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

Classification	Justification
Flam. Liq. 3, H226	On basis of test data
Skin Irrit. 2, H315	Calculation method
Eye Irrit. 2, H319	Calculation method
STOT SE 3, H335	Calculation method
STOT SE 3, H336	Calculation method
STOT RE 2, H373	Calculation method
Aquatic Chronic 3, H412	Calculation method

### 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.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
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.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
EUH066	Repeated exposure may cause skin dryness or cracking.

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

Acute Tox. 3	ACUTE TOXICITY - Category 3
Acute Tox. 4	ACUTE TOXICITY - Category 4
Aquatic Chronic 2	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2
Aquatic Chronic 3	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3
Asp. Tox. 1	ASPIRATION HAZARD - Category 1
Eye Irrit. 2	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
Flam. Liq. 2	FLAMMABLE LIQUIDS - Category 2
Flam. Liq. 3	FLAMMABLE LIQUIDS - Category 3
Skin Irrit. 2	SKIN CORROSION/IRRITATION - Category 2
Skin Sens. 1	SKIN SENSITISATION - Category 1
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 : 14/01/2026

## SECTION 16: Other information

Date of previous issue : 24/08/2023

Version : 10

FERREX

All variants

### Notice to reader

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

