

SAFETY DATA SHEET



OW COMBI 2315-15 - All variants

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

1.1 Product identifier

Product name : OW COMBI 2315-15 - All variants

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

Product use : Paint.

1.3 Details of the supplier of the safety data sheet

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

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

National contact

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

1.4 Emergency telephone number

National advisory body/Poison Centre

Telephone number : In an emergency, call 112

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mixture

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

Flam. Liq. 2, H225
Skin Irrit. 2, H315
Eye Dam. 1, H318
Repr. 2, H361d
STOT SE 3, H336

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

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

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

2.2 Label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : H225 - Highly flammable liquid and vapour.
H315 - Causes skin irritation.
H318 - Causes serious eye damage.
H336 - May cause drowsiness or dizziness.
H361d - Suspected of damaging the unborn child.

Precautionary statements

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

SECTION 2: Hazards identification

Response	: P305 + P351 + P338 + P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.
Storage	: P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.
Disposal	: P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
Hazardous ingredients	: Contains: n-Butyl acetate; Toluene and iso-butanol
Supplemental label elements	: Warning! Hazardous respirable droplets may be formed when sprayed. Do not breathe spray or mist.
Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles	:

2.3 Other hazards

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

SECTION 3: Composition/information on ingredients

3.2 Mixtures : Mixture

Product/ingredient name	Identifiers	%	Classification	Specific Conc. Limits, M-factors and ATEs	Type
n-Butyl acetate	REACH #: 01-2119485493-29 EC: 204-658-1 CAS: 123-86-4 Index: 607-025-00-1	≥10 - ≤25	Flam. Liq. 3, H226 STOT SE 3, H336 EUH066	-	[1] [2]
acetone	REACH #: 01-2119471330-49 EC: 200-662-2 CAS: 67-64-1 Index: 606-001-00-8	≥10 - <25	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336 EUH066	EUH066: C ≥ 25%	[1] [2]
Toluene	REACH #: 01-2119471310-51 EC: 203-625-9 CAS: 108-88-3 Index: 601-021-00-3	<10	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Repr. 2, H361d STOT SE 3, H336 STOT RE 2, H373 Asp. Tox. 1, H304	-	[1] [2]
Xylene	REACH #: 01-2119488216-32 EC: 215-535-7 CAS: 1330-20-7 Index: 601-022-00-9	<10	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	ATE [Dermal] = 1100 mg/kg ATE [Inhalation (vapours)] = 11 mg/ l	[1] [2]
Ethyl acetate	REACH #: 01-2119475103-46 EC: 205-500-4	≤10	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336	-	[1] [2]

SECTION 3: Composition/information on ingredients

	CAS: 141-78-6 Index: 607-022-00-5		EUH066		
iso-butanol	REACH #: 01-2119484609-23 EC: 201-148-0 CAS: 78-83-1 Index: 603-108-00-1	≤8.3	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 3, H335 STOT SE 3, H336	-	[1]
Propan-2-ol	REACH #: 01-2119457558-25 EC: 200-661-7 CAS: 67-63-0 Index: 603-117-00-0	≤5	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336	-	[1]
Ethylbenzene	REACH #: 01-2119489370-35 EC: 202-849-4 CAS: 100-41-4 Index: 601-023-00-4	≤3	Flam. Liq. 2, H225 Acute Tox. 4, H332 STOT RE 2, H373 (hearing organs) (oral, inhalation) Asp. Tox. 1, H304	ATE [Inhalation (vapours)] = 11 mg/l	[1] [2]
1-Ethoxy-2-propanol	REACH #: 01-2119462792-32 EC: 216-374-5 CAS: 1569-02-4 Index: 603-177-00-8	≤3	Flam. Liq. 3, H226 Eye Irrit. 2, H319 STOT SE 3, H336	-	[1]
titanium dioxide	REACH #: 01-2119489379-17 EC: 236-675-5 CAS: 13463-67-7	≤3	Carc. 2, H351 (inhalation) See Section 16 for the full text of the H statements declared above.	-	[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

[*] The classification as a carcinogen by inhalation applies only to mixtures placed on the market in powder form containing 1% or more of titanium dioxide particles with aerodynamic diameter ≤ 10 µm not bound within a matrix.

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

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact

- : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.

Inhalation

- : Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

SECTION 4: First aid measures

- Skin contact** : Get medical attention immediately. Call a poison center or physician. Wash contaminated skin with soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

4.2 Most important symptoms and effects, both acute and delayed

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain
watering
redness
- Inhalation** : Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
reduced foetal weight
increase in foetal deaths
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
reduced foetal weight
increase in foetal deaths
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:
stomach pains
reduced foetal weight
increase in foetal deaths
skeletal malformations

4.3 Indication of any immediate medical attention and special treatment needed

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

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use dry chemical, CO₂, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture : Highly flammable liquid and vapour. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.

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

5.3 Advice for firefighters

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures


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


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

6.2 Environmental precautions

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

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.

SECTION 6: Accidental release measures

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

7.2 Conditions for safe storage, including any incompatibilities

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

Seveso Directive - Reporting thresholds

Danger criteria

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

7.3 Specific end use(s)

Recommendations : Not available.

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


SECTION 8: Exposure controls/personal protection

Product/ingredient name	Exposure limit values
 Butyl acetate	Regulation on Limit Values - MAC (Austria, 12/2024) [Butylacetat alle Isomeren außer tert-Butylacet] CEIL: 480 mg/m ³ . CEIL: 100 ppm. TWA 8 hours: 241 mg/m ³ . TWA 8 hours: 50 ppm.
acetone	Regulation on Limit Values - MAC (Austria, 12/2024) TWA 8 hours: 500 ppm. TWA 8 hours: 1200 mg/m ³ . PEAK 15 minutes: 2000 ppm 4 times per shift. PEAK 15 minutes: 4800 mg/m ³ 4 times per shift.
Toluene	Regulation on Limit Values - MAC (Austria, 12/2024) d. Absorbed through skin. TWA 8 hours: 50 ppm. TWA 8 hours: 190 mg/m ³ . PEAK 15 minutes: 100 ppm 4 times per shift. PEAK 15 minutes: 380 mg/m ³ 4 times per shift.
Xylene	Regulation on Limit Values - MAC (Austria, 12/2024) [Xylol (alle Isomeren, rein)] PEAK 15 minutes: 442 mg/m ³ 4 times per shift. TWA 8 hours: 50 ppm. PEAK 15 minutes: 100 ppm 4 times per shift. TWA 8 hours: 221 mg/m ³ .
Ethyl acetate	Regulation on Limit Values - MAC (Austria, 12/2024) TWA 8 hours: 200 ppm. TWA 8 hours: 734 mg/m ³ . PEAK 15 minutes: 1468 mg/m ³ 4 times per shift. PEAK 15 minutes: 400 ppm 4 times per shift.
iso-butanol	Regulation on Limit Values - MAC (Austria, 12/2024) [Butanol (alle Isomeren außer 2-Methyl-2-propanol)] PEAK 15 minutes: 200 ppm 4 times per shift. TWA 8 hours: 150 mg/m ³ . TWA 8 hours: 50 ppm. PEAK 15 minutes: 600 mg/m ³ 4 times per shift.
Propan-2-ol	Regulation on Limit Values - MAC (Austria, 12/2024) TWA 8 hours: 200 ppm. TWA 8 hours: 500 mg/m ³ . PEAK 15 minutes: 800 ppm 4 times per shift. PEAK 15 minutes: 2000 mg/m ³ 4 times per shift.
Ethylbenzene	Regulation on Limit Values - MAC (Austria, 12/2024) Absorbed through skin. TWA 8 hours: 100 ppm. TWA 8 hours: 440 mg/m ³ . CEIL 5 minutes: 200 ppm 8 times per shift. CEIL 5 minutes: 880 mg/m ³ 8 times per shift.
1-Ethoxy-2-propanol	Regulation on Limit Values - MAC (Austria, 12/2024) STEL 15 minutes: 880 mg/m ³ . STEL 15 minutes: 200 ppm. TWA 8 hours: 220 mg/m ³ . TWA 8 hours: 50 ppm.
 Butyl acetate	Limit values (Belgium, 12/2023) [butylacetaat] STEL 15 minutes: 712 mg/m ³ . STEL 15 minutes: 150 ppm. TWA 8 hours: 238 mg/m ³ . TWA 8 hours: 50 ppm.
acetone	Limit values (Belgium, 12/2023) TWA 8 hours: 246 ppm. TWA 8 hours: 594 mg/m ³ . STEL 15 minutes: 492 ppm. STEL 15 minutes: 1187 mg/m ³ .
Toluene	Limit values (Belgium, 12/2023) Absorbed through skin.

SECTION 8: Exposure controls/personal protection

Xylene	<p>TWA 8 hours: 20 ppm. TWA 8 hours: 77 mg/m³. STEL 15 minutes: 100 ppm. STEL 15 minutes: 384 mg/m³.</p> <p>Limit values (Belgium, 12/2023) [Xyleen] Absorbed through skin. TWA 8 hours: 50 ppm. TWA 8 hours: 221 mg/m³. STEL 15 minutes: 100 ppm. STEL 15 minutes: 442 mg/m³.</p>
Ethyl acetate	<p>Limit values (Belgium, 12/2023) TWA 8 hours: 200 ppm. TWA 8 hours: 734 mg/m³. STEL 15 minutes: 1468 mg/m³. STEL 15 minutes: 400 ppm.</p>
iso-butanol	<p>Limit values (Belgium, 12/2023) TWA 8 hours: 50 ppm. TWA 8 hours: 154 mg/m³.</p>
Propan-2-ol	<p>Limit values (Belgium, 12/2023) TWA 8 hours: 200 ppm. TWA 8 hours: 500 mg/m³. STEL 15 minutes: 400 ppm. STEL 15 minutes: 1000 mg/m³.</p>
Ethylbenzene	<p>Limit values (Belgium, 12/2023) Absorbed through skin. TWA 8 hours: 20 ppm. TWA 8 hours: 87 mg/m³. STEL 15 minutes: 125 ppm. STEL 15 minutes: 551 mg/m³.</p>
n-Butyl acetate	<p>Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 13/2003. (Bulgaria, 4/2024) Limit value 8 hours: 241 mg/m³. Limit value 15 minutes: 723 mg/m³. Limit value 15 minutes: 150 ppm. Limit value 8 hours: 50 ppm.</p>
acetone	<p>Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 13/2003. (Bulgaria, 4/2024) Limit value 8 hours: 600 mg/m³. Limit value 15 minutes: 1400 mg/m³.</p>
Toluene	<p>Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 13/2003. (Bulgaria, 4/2024) Absorbed through skin. Limit value 15 minutes: 384 mg/m³. Limit value 8 hours: 192 mg/m³. Limit value 15 minutes: 100 ppm. Limit value 8 hours: 50 ppm.</p>
Xylene	<p>Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 13/2003. (Bulgaria, 4/2024) [Xylene] Absorbed through skin. Limit value 8 hours: 221 mg/m³. Limit value 15 minutes: 442 mg/m³. Limit value 15 minutes: 100 ppm. Limit value 8 hours: 50 ppm.</p>
Ethyl acetate	<p>Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 13/2003. (Bulgaria, 4/2024) Limit value 8 hours: 734 mg/m³. Limit value 15 minutes: 400 ppm. Limit value 15 minutes: 1468 mg/m³. Limit value 8 hours: 200 ppm.</p>
Propan-2-ol	<p>Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 13/2003. (Bulgaria, 4/2024) Limit value 8 hours: 980 mg/m³. Limit value 15 minutes: 1225 mg/m³.</p>
Ethylbenzene	<p>Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 13/2003. (Bulgaria, 4/2024) Absorbed</p>

SECTION 8: Exposure controls/personal protection

 Butyl acetate

through skin.

Limit value 8 hours: 435 mg/m³.

Limit value 15 minutes: 545 mg/m³.

Ordinance on the protection of workers from exposure to hazardous chemicals at work, exposure limit values (Annex I) (Croatia, 12/2023)

STELV 15 minutes: 723 mg/m³.

STELV 15 minutes: 150 ppm.

ELV 8 hours: 241 mg/m³.

ELV 8 hours: 50 ppm.

acetone

Ordinance on the protection of workers from exposure to hazardous chemicals at work, exposure limit values (Annex I) (Croatia, 12/2023)

ELV 8 hours: 1210 mg/m³.

ELV 8 hours: 500 ppm.

Toluene

Ordinance on the protection of workers from exposure to hazardous chemicals at work, exposure limit values (Annex I) (Croatia, 12/2023) Absorbed through skin.

STELV 15 minutes: 384 mg/m³.

STELV 15 minutes: 100 ppm.

ELV 8 hours: 192 mg/m³.

ELV 8 hours: 50 ppm.

Xylene

Ordinance on the protection of workers from exposure to hazardous chemicals at work, exposure limit values (Annex I) (Croatia, 12/2023) [ksilen] Absorbed through skin.

STELV 15 minutes: 442 mg/m³.

STELV 15 minutes: 100 ppm.

ELV 8 hours: 221 mg/m³.

ELV 8 hours: 50 ppm.

Ethyl acetate

Ordinance on the protection of workers from exposure to hazardous chemicals at work, exposure limit values (Annex I) (Croatia, 12/2023)

STELV 15 minutes: 400 ppm.

ELV 8 hours: 200 ppm.

STELV 15 minutes: 1468 mg/m³.

ELV 8 hours: 734 mg/m³.

iso-butanol

Ordinance on the protection of workers from exposure to hazardous chemicals at work, exposure limit values (Annex I) (Croatia, 12/2023) Absorbed through skin.

STELV 15 minutes: 231 mg/m³.

STELV 15 minutes: 75 ppm.

ELV 8 hours: 154 mg/m³.

ELV 8 hours: 50 ppm.

Propan-2-ol

Ordinance on the protection of workers from exposure to hazardous chemicals at work, exposure limit values (Annex I) (Croatia, 12/2023)

STELV 15 minutes: 1250 mg/m³.

STELV 15 minutes: 500 ppm.

ELV 8 hours: 999 mg/m³.

ELV 8 hours: 400 ppm.

Ethylbenzene

Ordinance on the protection of workers from exposure to hazardous chemicals at work, exposure limit values (Annex I) (Croatia, 12/2023) Absorbed through skin.



STELV 15 minutes: 884 mg/m³.

STELV 15 minutes: 200 ppm.


ELV 8 hours: 442 mg/m³.

ELV 8 hours: 100 ppm.



SECTION 8: Exposure controls/personal protection

 n-Butyl acetate	Department of labour inspection (Cyprus, 7/2021) STEL 15 minutes: 150 ppm. STEL 15 minutes: 723 mg/m ³ . TWA 8 hours: 50 ppm. TWA 8 hours: 241 mg/m ³ .
acetone	Department of labour inspection (Cyprus, 7/2021) Absorbed through skin. TWA 8 hours: 500 ppm. TWA 8 hours: 1210 mg/m ³ .
Toluene	Department of labour inspection (Cyprus, 7/2021) Absorbed through skin. STEL 15 minutes: 100 ppm. STEL 15 minutes: 384 mg/m ³ . TWA 8 hours: 50 ppm. TWA 8 hours: 192 mg/m ³ .
Xylene	Department of labour inspection (Cyprus, 7/2021) [Ξυλένιο, μικτά ισομερή, καθαρά] Absorbed through skin. STEL 15 minutes: 100 ppm. STEL 15 minutes: 442 mg/m ³ . TWA 8 hours: 50 ppm. TWA 8 hours: 221 mg/m ³ .
Ethyl acetate	Department of labour inspection (Cyprus, 7/2021) STEL 15 minutes: 400 ppm. STEL 15 minutes: 1468 mg/m ³ . TWA 8 hours: 200 ppm. TWA 8 hours: 734 mg/m ³ .
Ethylbenzene	Department of labour inspection (Cyprus, 7/2021) Absorbed through skin. STEL 15 minutes: 884 mg/m ³ . TWA 8 hours: 100 ppm. TWA 8 hours: 442 mg/m ³ . STEL 15 minutes: 200 ppm.
 n-Butyl acetate	Government regulation of Czech Republic PEL/NPK-P (Czech Republic, 12/2023) TWA 8 hours: 241 mg/m ³ . STEL 15 minutes: 723 mg/m ³ . STEL 15 minutes: 150 ppm. TWA 8 hours: 50 ppm.
acetone	Government regulation of Czech Republic PEL/NPK-P (Czech Republic, 12/2023) TWA 8 hours: 800 mg/m ³ . STEL 15 minutes: 1500 mg/m ³ . STEL 15 minutes: 621.4 ppm. TWA 8 hours: 331.4 ppm.
Toluene	Government regulation of Czech Republic PEL/NPK-P (Czech Republic, 12/2023) Absorbed through skin. TWA 8 hours: 192 mg/m ³ . TWA 8 hours: 50 ppm. STEL 15 minutes: 384 mg/m ³ . STEL 15 minutes: 100 ppm.
Xylene	Government regulation of Czech Republic PEL/NPK-P (Czech Republic, 12/2023) [xylen] Absorbed through skin. TWA 8 hours: 200 mg/m ³ . TWA 8 hours: 45.33 ppm. STEL 15 minutes: 400 mg/m ³ . STEL 15 minutes: 90.66 ppm.
Ethyl acetate	Government regulation of Czech Republic PEL/NPK-P (Czech Republic, 12/2023) TWA 8 hours: 700 mg/m ³ . TWA 8 hours: 191.1 ppm. STEL 15 minutes: 900 mg/m ³ . STEL 15 minutes: 245.7 ppm.
iso-butanol	Government regulation of Czech Republic PEL/NPK-P (Czech

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Propan-2-ol	<p>Republic, 12/2023) [butanol] TWA 8 hours: 300 mg/m³. TWA 8 hours: 97 ppm. STEL 15 minutes: 600 mg/m³. STEL 15 minutes: 194 ppm.</p> <p>Government regulation of Czech Republic PEL/NPK-P (Czech Republic, 12/2023) TWA 8 hours: 500 mg/m³. TWA 8 hours: 200 ppm. STEL 15 minutes: 1000 mg/m³. STEL 15 minutes: 400 ppm.</p>
Ethylbenzene	<p>Government regulation of Czech Republic PEL/NPK-P (Czech Republic, 12/2023) Absorbed through skin. TWA 8 hours: 200 mg/m³. TWA 8 hours: 45.33 ppm. STEL 15 minutes: 500 mg/m³. STEL 15 minutes: 113.32 ppm.</p>
1-Ethoxy-2-propanol	<p>Government regulation of Czech Republic PEL/NPK-P (Czech Republic, 12/2023) STEL 15 minutes: 550 mg/m³. TWA 8 hours: 270 mg/m³. TWA 8 hours: 62.4 ppm. STEL 15 minutes: 127.1 ppm.</p>
 n-Butyl acetate	<p>Working Environment Authority (Denmark, 12/2024) [butylacetat, alle isomerer] TWA 8 hours: 50 ppm. TWA 8 hours: 241 mg/m³. STEL 15 minutes: 723 mg/m³. STEL 15 minutes: 150 ppm.</p>
acetone	<p>Working Environment Authority (Denmark, 12/2024) TWA 8 hours: 250 ppm. TWA 8 hours: 600 mg/m³. STEL 15 minutes: 1200 mg/m³. STEL 15 minutes: 500 ppm.</p>
Toluene	<p>Working Environment Authority (Denmark, 12/2024) Absorbed through skin. TWA 8 hours: 25 ppm. TWA 8 hours: 94 mg/m³. STEL 15 minutes: 384 mg/m³. STEL 15 minutes: 100 ppm.</p>
Xylene	<p>Working Environment Authority (Denmark, 12/2024) [xylen, alle isomere] Absorbed through skin. TWA 8 hours: 25 ppm. TWA 8 hours: 109 mg/m³. STEL 15 minutes: 442 mg/m³. STEL 15 minutes: 100 ppm.</p>
Ethyl acetate	<p>Working Environment Authority (Denmark, 12/2024) TWA 8 hours: 150 ppm. TWA 8 hours: 540 mg/m³. STEL 15 minutes: 1468 mg/m³. STEL 15 minutes: 400 ppm.</p>
iso-butanol	<p>Working Environment Authority (Denmark, 12/2024) [butanol, alle isomere] Absorbed through skin. CEIL: 50 ppm. CEIL: 150 mg/m³.</p>
Propan-2-ol	<p>Working Environment Authority (Denmark, 12/2024) TWA 8 hours: 200 ppm. TWA 8 hours: 490 mg/m³. STEL 15 minutes: 980 mg/m³. STEL 15 minutes: 400 ppm.</p>
Ethylbenzene	<p>Working Environment Authority (Denmark, 12/2024) K. Absorbed through skin. TWA 8 hours: 50 ppm.</p>


SECTION 8: Exposure controls/personal protection

 Butyl acetate	<p>TWA 8 hours: 217 mg/m³. STEL 15 minutes: 434 mg/m³. STEL 15 minutes: 100 ppm.</p> <p>Occupational exposure limits, Regulation No. 293 (Estonia, 4/2024) STEL 15 minutes: 150 ppm. STEL 15 minutes: 723 mg/m³. TWA 8 hours: 50 ppm. TWA 8 hours: 241 mg/m³.</p>
acetone	<p>Occupational exposure limits, Regulation No. 293 (Estonia, 4/2024) TWA 8 hours: 1210 mg/m³. TWA 8 hours: 500 ppm.</p>
Toluene	<p>Occupational exposure limits, Regulation No. 293 (Estonia, 4/2024) Absorbed through skin. TWA 8 hours: 192 mg/m³. TWA 8 hours: 50 ppm. STEL 15 minutes: 384 mg/m³. STEL 15 minutes: 100 ppm.</p>
Xylene	<p>Occupational exposure limits, Regulation No. 293 (Estonia, 4/2024) [ksüleen] Absorbed through skin. TWA 8 hours: 50 ppm. STEL 15 minutes: 100 ppm. STEL 15 minutes: 450 mg/m³. TWA 8 hours: 200 mg/m³.</p>
Ethyl acetate	<p>Occupational exposure limits, Regulation No. 293 (Estonia, 4/2024) TWA 8 hours: 500 mg/m³. TWA 8 hours: 150 ppm. STEL 15 minutes: 1100 mg/m³. STEL 15 minutes: 300 ppm.</p>
iso-butanol	<p>Occupational exposure limits, Regulation No. 293 (Estonia, 4/2024) TWA 8 hours: 150 mg/m³. TWA 8 hours: 50 ppm.</p>
Propan-2-ol	<p>Occupational exposure limits, Regulation No. 293 (Estonia, 4/2024) TWA 8 hours: 350 mg/m³. TWA 8 hours: 150 ppm. STEL 15 minutes: 600 mg/m³. STEL 15 minutes: 250 ppm.</p>
Ethylbenzene	<p>Occupational exposure limits, Regulation No. 293 (Estonia, 4/2024) Absorbed through skin , Sensitiser. TWA 8 hours: 442 mg/m³. TWA 8 hours: 100 ppm. STEL 15 minutes: 884 mg/m³. STEL 15 minutes: 200 ppm.</p>
 Butyl acetate	<p>EU OEL (Europe, 1/2022) STEL 15 minutes: 150 ppm. STEL 15 minutes: 723 mg/m³. TWA 8 hours: 241 mg/m³. TWA 8 hours: 50 ppm.</p>
acetone	<p>EU OEL (Europe, 1/2022) TWA 8 hours: 500 ppm. TWA 8 hours: 1210 mg/m³.</p>
Toluene	<p>EU OEL (Europe, 1/2022) Absorbed through skin. TWA 8 hours: 192 mg/m³. TWA 8 hours: 50 ppm. STEL 15 minutes: 384 mg/m³. STEL 15 minutes: 100 ppm.</p>
Xylene	<p>EU OEL (Europe, 1/2022) [xylene, mixed isomers] Absorbed through skin. TWA 8 hours: 50 ppm.</p>

SECTION 8: Exposure controls/personal protection

	<p>TWA 8 hours: 221 mg/m³. STEL 15 minutes: 100 ppm. STEL 15 minutes: 442 mg/m³.</p>
Ethyl acetate	<p>EU OEL (Europe, 1/2022) STEL 15 minutes: 400 ppm. STEL 15 minutes: 1468 mg/m³. TWA 8 hours: 200 ppm. TWA 8 hours: 734 mg/m³.</p>
Ethylbenzene	<p>EU OEL (Europe, 1/2022) Absorbed through skin. TWA 8 hours: 100 ppm. TWA 8 hours: 442 mg/m³. STEL 15 minutes: 200 ppm. STEL 15 minutes: 884 mg/m³.</p>
 Butyl acetate	<p>Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021) TWA 8 hours: 150 ppm. TWA 8 hours: 720 mg/m³. STEL 15 minutes: 200 ppm. STEL 15 minutes: 960 mg/m³.</p>
acetone	<p>Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021) TWA 8 hours: 500 ppm. TWA 8 hours: 1200 mg/m³. STEL 15 minutes: 630 ppm. STEL 15 minutes: 1500 mg/m³.</p>
Toluene	<p>Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021) Absorbed through skin , Ototoxicant. TWA 8 hours: 25 ppm. TWA 8 hours: 81 mg/m³. STEL 15 minutes: 100 ppm. STEL 15 minutes: 380 mg/m³.</p>
Xylene	<p>Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021) [Ksyleeni] Absorbed through skin. STEL 15 minutes: 440 mg/m³. TWA 8 hours: 220 mg/m³. TWA 8 hours: 50 ppm. STEL 15 minutes: 100 ppm.</p>
Ethyl acetate	<p>Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021) TWA 8 hours: 200 ppm. TWA 8 hours: 730 mg/m³. STEL 15 minutes: 400 ppm. STEL 15 minutes: 1470 mg/m³.</p>
iso-butanol	<p>Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021) [Butanoli] Absorbed through skin. TWA 8 hours: 50 ppm. TWA 8 hours: 150 mg/m³. STEL 15 minutes: 75 ppm. STEL 15 minutes: 230 mg/m³.</p>
Propan-2-ol	<p>Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021) TWA 8 hours: 200 ppm. TWA 8 hours: 500 mg/m³. STEL 15 minutes: 250 ppm. STEL 15 minutes: 620 mg/m³.</p>
Ethylbenzene	<p>Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021) Absorbed through skin. TWA 8 hours: 50 ppm. TWA 8 hours: 220 mg/m³. STEL 15 minutes: 200 ppm. STEL 15 minutes: 880 mg/m³.</p>

SECTION 8: Exposure controls/personal protection

 n-Butyl acetate

Ministry of Labor (France, 6/2024)

TWA 8 hours: 50 ppm. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code)

TWA 8 hours: 241 mg/m³. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code)

STEL 15 minutes: 150 ppm. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code)

STEL 15 minutes: 723 mg/m³. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code)

acetone

Ministry of Labor (France, 6/2024)

TWA 8 hours: 500 ppm. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code)

TWA 8 hours: 1210 mg/m³. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code)

STEL 15 minutes: 2420 mg/m³. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code)

STEL 15 minutes: 1000 ppm. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code)

Toluene

Ministry of Labor (France, 6/2024) Repr 2. Absorbed through skin , Ototoxicant.

TWA 8 hours: 20 ppm. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code)

TWA 8 hours: 76.8 mg/m³. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code)

STEL 15 minutes: 100 ppm. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code)

STEL 15 minutes: 384 mg/m³. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code)

Xylene

Ministry of Labor (France, 6/2024) [xylènes, isomères mixtes, purs] Absorbed through skin.

STEL 15 minutes: 442 mg/m³. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code)

STEL 15 minutes: 100 ppm. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code)

TWA 8 hours: 221 mg/m³. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code)

TWA 8 hours: 50 ppm. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code)

Ethyl acetate

Ministry of Labor (France, 6/2024)

TWA 8 hours: 200 ppm. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code)

TWA 8 hours: 734 mg/m³. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code)

STEL 15 minutes: 1468 mg/m³. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code)

STEL 15 minutes: 400 ppm. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code)

iso-butanol

Ministry of Labor (France, 6/2024)

TWA 8 hours: 50 ppm. Notes: Permissible limit values (circulars)

TWA 8 hours: 150 mg/m³. Notes: Permissible limit values (circulars)

Propan-2-ol

Ministry of Labor (France, 6/2024)

STEL 15 minutes: 400 ppm. Notes: Permissible limit values (circulars)

STEL 15 minutes: 980 mg/m³. Notes: Permissible limit values (circulars)

Ethylbenzene


Ministry of Labor (France, 6/2024) Absorbed through skin.

TWA 8 hours: 20 ppm. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code)

TWA 8 hours: 88.4 mg/m³. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code)

STEL 15 minutes: 442 mg/m³. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code)

SECTION 8: Exposure controls/personal protection

 n-Butyl acetate

STEL 15 minutes: 100 ppm. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code)

TRGS 900 OEL (Germany, 6/2024)

TWA 8 hours: 300 mg/m³.

TWA 8 hours: 62 ppm.

PEAK 15 minutes: 600 mg/m³.

PEAK 15 minutes: 124 ppm.

DFG MAC-values list (Germany, 7/2024) Develop C.

TWA 8 hours: 100 ppm.

PEAK 15 minutes: 200 ppm 4 times per shift [Interval: 1 hour].

TWA 8 hours: 480 mg/m³.

PEAK 15 minutes: 960 mg/m³ 4 times per shift [Interval: 1 hour].

TRGS 900 OEL (Germany, 6/2024)

TWA 8 hours: 1200 mg/m³.

PEAK 15 minutes: 2400 mg/m³.

TWA 8 hours: 500 ppm.

PEAK 15 minutes: 1000 ppm.

DFG MAC-values list (Germany, 7/2024) Develop B.

TWA 8 hours: 500 ppm.

PEAK 15 minutes: 1000 ppm 4 times per shift [Interval: 1 hour].

TWA 8 hours: 1200 mg/m³.

PEAK 15 minutes: 2400 mg/m³ 4 times per shift [Interval: 1 hour].

TRGS 900 OEL (Germany, 6/2024) Absorbed through skin.

TWA 8 hours: 190 mg/m³.

PEAK 15 minutes: 380 mg/m³.

TWA 8 hours: 50 ppm.

PEAK 15 minutes: 100 ppm.

DFG MAC-values list (Germany, 7/2024) Develop C. Absorbed through skin.

TWA 8 hours: 50 ppm.

PEAK 15 minutes: 100 ppm 4 times per shift [Interval: 1 hour].

TWA 8 hours: 190 mg/m³.

PEAK 15 minutes: 380 mg/m³ 4 times per shift [Interval: 1 hour].

TRGS 900 OEL (Germany, 6/2024) [Xylo] Absorbed through skin.

TWA 8 hours: 220 mg/m³.

PEAK 15 minutes: 440 mg/m³.

TWA 8 hours: 50 ppm.

PEAK 15 minutes: 100 ppm.

DFG MAC-values list (Germany, 7/2024) [Xylene] Develop D. Absorbed through skin.

TWA 8 hours: 50 ppm.

PEAK 15 minutes: 100 ppm 4 times per shift [Interval: 1 hour].

TWA 8 hours: 220 mg/m³.

PEAK 15 minutes: 440 mg/m³ 4 times per shift [Interval: 1 hour].

TRGS 900 OEL (Germany, 6/2024)

TWA 8 hours: 730 mg/m³.

PEAK 15 minutes: 1460 mg/m³.

TWA 8 hours: 200 ppm.

PEAK 15 minutes: 400 ppm.

DFG MAC-values list (Germany, 7/2024) Develop C.

TWA 8 hours: 200 ppm.

PEAK 15 minutes: 400 ppm 4 times per shift [Interval: 1 hour].

TWA 8 hours: 750 mg/m³.

PEAK 15 minutes: 1500 mg/m³ 4 times per shift [Interval: 1 hour].

TRGS 900 OEL (Germany, 6/2024)

TWA 8 hours: 310 mg/m³.

PEAK 15 minutes: 310 mg/m³.

TWA 8 hours: 100 ppm.

PEAK 15 minutes: 100 ppm.

DFG MAC-values list (Germany, 7/2024) Develop C.

TWA 8 hours: 100 ppm.

PEAK 15 minutes: 100 ppm 4 times per shift [Interval: 1 hour].

TWA 8 hours: 310 mg/m³.

acetone

Toluene

Xylene

Ethyl acetate

iso-butanol

SECTION 8: Exposure controls/personal protection

Propan-2-ol

PEAK 15 minutes: 310 mg/m³ 4 times per shift [Interval: 1 hour].
TRGS 900 OEL (Germany, 6/2024)
 TWA 8 hours: 500 mg/m³.
 PEAK 15 minutes: 1000 mg/m³.
 TWA 8 hours: 200 ppm.
 PEAK 15 minutes: 400 ppm.
DFG MAC-values list (Germany, 7/2024) Develop C.
 TWA 8 hours: 200 ppm.
 PEAK 15 minutes: 400 ppm 4 times per shift [Interval: 1 hour].
 TWA 8 hours: 500 mg/m³.
 PEAK 15 minutes: 1000 mg/m³ 4 times per shift [Interval: 1 hour].

Ethylbenzene

TRGS 900 OEL (Germany, 6/2024) Absorbed through skin.
 TWA 8 hours: 88 mg/m³.
 PEAK 15 minutes: 176 mg/m³.
 TWA 8 hours: 20 ppm.
 PEAK 15 minutes: 40 ppm.
DFG MAC-values list (Germany, 7/2024) Carc 4, Develop C.
 Absorbed through skin.
 PEAK 15 minutes: 40 ppm 4 times per shift [Interval: 1 hour].
 PEAK 15 minutes: 176 mg/m³ 4 times per shift [Interval: 1 hour].
 TWA 8 hours: 88 mg/m³.
 TWA 8 hours: 20 ppm.

1-Ethoxy-2-propanol

TRGS 900 OEL (Germany, 6/2024) Absorbed through skin.
 TWA 8 hours: 86 mg/m³.
 PEAK 15 minutes: 172 mg/m³.
 TWA 8 hours: 20 ppm.
 PEAK 15 minutes: 40 ppm.
DFG MAC-values list (Germany, 7/2024) Develop C. Absorbed through skin.
 TWA 8 hours: 86 mg/m³.
 PEAK 15 minutes: 172 mg/m³ 4 times per shift [Interval: 1 hour].
 TWA 8 hours: 20 ppm.
 PEAK 15 minutes: 40 ppm 4 times per shift [Interval: 1 hour].

 Butyl acetate

Presidential Decree 307/1986: Occupational exposure limit values (Greece, 8/2024)
 TWA 8 hours: 50 ppm.
 TWA 8 hours: 241 mg/m³.
 STEL 15 minutes: 150 ppm.
 STEL 15 minutes: 723 mg/m³.

acetone

Presidential Decree 307/1986: Occupational exposure limit values (Greece, 8/2024)
 TWA 8 hours: 1780 mg/m³.
 STEL 15 minutes: 3560 mg/m³.

Toluene

Presidential Decree 307/1986: Occupational exposure limit values (Greece, 8/2024) Absorbed through skin.
 TWA 8 hours: 50 ppm.
 TWA 8 hours: 192 mg/m³.
 STEL 15 minutes: 100 ppm.
 STEL 15 minutes: 384 mg/m³.

Xylene

Presidential Decree 307/1986: Occupational exposure limit values (Greece, 8/2024) [ξυλόλια (όλα τα ισομερή)] Absorbed through skin.
 TWA 8 hours: 100 ppm.
 TWA 8 hours: 435 mg/m³.
 STEL 15 minutes: 150 ppm.
 STEL 15 minutes: 650 mg/m³.



Ethyl acetate

Presidential Decree 307/1986: Occupational exposure limit values (Greece, 8/2024)
 TWA 8 hours: 200 ppm.
 TWA 8 hours: 734 mg/m³.
 STEL 15 minutes: 1468 mg/m³.
 STEL 15 minutes: 400 ppm.


iso-butanol

Presidential Decree 307/1986: Occupational exposure limit



SECTION 8: Exposure controls/personal protection

Propan-2-ol	<p>values (Greece, 8/2024)</p> <p>TWA 8 hours: 100 ppm. TWA 8 hours: 300 mg/m³. STEL 15 minutes: 100 ppm. STEL 15 minutes: 300 mg/m³.</p> <p>Presidential Decree 307/1986: Occupational exposure limit values (Greece, 8/2024)</p> <p>TWA 8 hours: 400 ppm. TWA 8 hours: 980 mg/m³. STEL 15 minutes: 500 ppm. STEL 15 minutes: 1225 mg/m³.</p>
Ethylbenzene	<p>Presidential Decree 307/1986: Occupational exposure limit values (Greece, 8/2024)</p> <p>TWA 8 hours: 100 ppm. TWA 8 hours: 435 mg/m³. STEL 15 minutes: 125 ppm. STEL 15 minutes: 545 mg/m³.</p>
 n-Butyl acetate	<p>5/2020. (II. 6.) ITM Decree (Hungary, 1/2025) Sensitiser.</p> <p>TWA 8 hours: 241 mg/m³. PEAK 15 minutes: 723 mg/m³. PEAK 15 minutes: 150 ppm. TWA 8 hours: 50 ppm.</p>
acetone	<p>5/2020. (II. 6.) ITM Decree (Hungary, 1/2025)</p> <p>TWA 8 hours: 1210 mg/m³. TWA 8 hours: 500 ppm.</p>
Toluene	<p>5/2020. (II. 6.) ITM Decree (Hungary, 1/2025) Absorbed through skin.</p> <p>TWA 8 hours: 192 mg/m³. PEAK 15 minutes: 384 mg/m³. PEAK 15 minutes: 100 ppm. TWA 8 hours: 50 ppm.</p>
Xylene	<p>5/2020. (II. 6.) ITM Decree (Hungary, 1/2025) [xilol izomerek keveréke] Absorbed through skin.</p> <p>TWA 8 hours: 221 mg/m³. PEAK 15 minutes: 442 mg/m³. PEAK 15 minutes: 100 ppm. TWA 8 hours: 50 ppm.</p>
Ethyl acetate	<p>5/2020. (II. 6.) ITM Decree (Hungary, 1/2025) Sensitiser.</p> <p>TWA 8 hours: 734 mg/m³. PEAK 15 minutes: 1468 mg/m³. PEAK 15 minutes: 400 ppm. TWA 8 hours: 200 ppm.</p>
Propan-2-ol	<p>5/2020. (II. 6.) ITM Decree (Hungary, 1/2025) Absorbed through skin.</p> <p>TWA 8 hours: 500 mg/m³. PEAK 15 minutes: 1000 mg/m³. PEAK 15 minutes: 400 ppm. TWA 8 hours: 200 ppm.</p>
Ethylbenzene	<p>5/2020. (II. 6.) ITM Decree (Hungary, 1/2025) Absorbed through skin.</p> <p>TWA 8 hours: 442 mg/m³. PEAK 15 minutes: 884 mg/m³. PEAK 15 minutes: 200 ppm. TWA 8 hours: 100 ppm.</p>
 n-Butyl acetate	<p>Ministry of Welfare, List of Exposure Limits (Iceland, 11/2024) [bútýlasetat, allir ísómerar]</p> <p>TWA 8 hours: 241 mg/m³. TWA 8 hours: 50 ppm. STEL 15 minutes: 723 mg/m³. STEL 15 minutes: 150 ppm.</p>
acetone	<p>Ministry of Welfare, List of Exposure Limits (Iceland, 11/2024)</p> <p>TWA 8 hours: 600 mg/m³.</p>


SECTION 8: Exposure controls/personal protection

Toluene	<p>TWA 8 hours: 250 ppm. Ministry of Welfare, List of Exposure Limits (Iceland, 11/2024) Absorbed through skin. STEL 15 minutes: 188 mg/m³. STEL 15 minutes: 50 ppm. TWA 8 hours: 94 mg/m³. TWA 8 hours: 25 ppm.</p>
Xylene	<p>Ministry of Welfare, List of Exposure Limits (Iceland, 11/2024) [Xýlen, allir isómerar] Absorbed through skin. STEL 15 minutes: 442 mg/m³. STEL 15 minutes: 100 ppm. TWA 8 hours: 109 mg/m³. TWA 8 hours: 25 ppm.</p>
Ethyl acetate	<p>Ministry of Welfare, List of Exposure Limits (Iceland, 11/2024) TWA 8 hours: 540 mg/m³. TWA 8 hours: 150 ppm.</p>
iso-butanol	<p>Ministry of Welfare, List of Exposure Limits (Iceland, 11/2024) [Bútanól, allir isómerar nema n-bútanól] Absorbed through skin. STEL 15 minutes: 150 mg/m³. STEL 15 minutes: 50 ppm.</p>
Propan-2-ol	<p>Ministry of Welfare, List of Exposure Limits (Iceland, 11/2024) Absorbed through skin. TWA 8 hours: 490 mg/m³. TWA 8 hours: 200 ppm.</p>
Ethylbenzene	<p>Ministry of Welfare, List of Exposure Limits (Iceland, 11/2024) Absorbed through skin. STEL 15 minutes: 884 mg/m³. STEL 15 minutes: 200 ppm. TWA 8 hours: 200 mg/m³. TWA 8 hours: 50 ppm.</p>
 -Butyl acetate	<p>NAOSH (Ireland, 4/2024) Notes: EU derived Occupational Exposure Limit Values OELV 8 hours: 50 ppm. OELV 8 hours: 241 mg/m³. OELV 15 minutes: 150 ppm. OELV 15 minutes: 723 mg/m³.</p>
acetone	<p>NAOSH (Ireland, 4/2024) Notes: EU derived Occupational Exposure Limit Values OELV 8 hours: 500 ppm. OELV 8 hours: 1210 mg/m³.</p>
Toluene	<p>NAOSH (Ireland, 4/2024) Absorbed through skin. Notes: EU derived Occupational Exposure Limit Values OELV 8 hours: 50 ppm. OELV 8 hours: 192 mg/m³. OELV 15 minutes: 100 ppm. OELV 15 minutes: 384 mg/m³.</p>
Xylene	<p>NAOSH (Ireland, 4/2024) [xylene] Absorbed through skin. Notes: EU derived Occupational Exposure Limit Values OELV 8 hours: 50 ppm. OELV 8 hours: 221 mg/m³. OELV 15 minutes: 100 ppm. OELV 15 minutes: 442 mg/m³.</p>
Ethyl acetate	<p>NAOSH (Ireland, 4/2024) Notes: EU derived Occupational Exposure Limit Values OELV 8 hours: 200 ppm. OELV 15 minutes: 400 ppm. OELV 15 minutes: 1468 mg/m³. OELV 8 hours: 734 mg/m³.</p>
iso-butanol	<p>NAOSH (Ireland, 4/2024) Notes: Advisory Occupational Exposure Limit Values (OELVs) OELV 8 hours: 150 ppm. OELV 8 hours: 700 mg/m³.</p>
Propan-2-ol	<p>NAOSH (Ireland, 4/2024) Absorbed through skin. Notes: Advisory</p>

SECTION 8: Exposure controls/personal protection

Ethylbenzene	Occupational Exposure Limit Values (OELVs) OELV 8 hours: 200 ppm. OELV 15 minutes: 400 ppm. NAOSH (Ireland, 4/2024) Absorbed through skin. Notes: EU derived Occupational Exposure Limit Values OELV 8 hours: 100 ppm. OELV 8 hours: 442 mg/m ³ . OELV 15 minutes: 200 ppm. OELV 15 minutes: 884 mg/m ³ .
 n-Butyl acetate	Legislative Decree No. 81/2008. Title IX. Protection from chemical agents, carcinogens and mutagens (Italy, 9/2024) Short Term 15 minutes: 150 ppm. Short Term 15 minutes: 723 mg/m ³ . Limit value 8 hours: 50 ppm. Limit value 8 hours: 241 mg/m ³ .
acetone	Legislative Decree No. 81/2008. Title IX. Protection from chemical agents, carcinogens and mutagens (Italy, 9/2024) Limit value 8 hours: 500 ppm. Limit value 8 hours: 1210 mg/m ³ .
Toluene	Legislative Decree No. 81/2008. Title IX. Protection from chemical agents, carcinogens and mutagens (Italy, 9/2024) Absorbed through skin. Limit value 8 hours: 50 ppm. Limit value 8 hours: 192 mg/m ³ . Short Term 15 minutes: 100 ppm. Short Term 15 minutes: 384 mg/m ³ .
Xylene	Legislative Decree No. 81/2008. Title IX. Protection from chemical agents, carcinogens and mutagens (Italy, 9/2024) [xilene, isomeri misti, puro] Absorbed through skin. Limit value 8 hours: 50 ppm. Limit value 8 hours: 221 mg/m ³ . Short Term 15 minutes: 100 ppm. Short Term 15 minutes: 442 mg/m ³ .
Ethyl acetate	Legislative Decree No. 81/2008. Title IX. Protection from chemical agents, carcinogens and mutagens (Italy, 9/2024) Short Term 15 minutes: 400 ppm. Short Term 15 minutes: 1468 mg/m ³ . Limit value 8 hours: 200 ppm. Limit value 8 hours: 734 mg/m ³ .
Ethylbenzene	Legislative Decree No. 81/2008. Title IX. Protection from chemical agents, carcinogens and mutagens (Italy, 9/2024) Absorbed through skin. Limit value 8 hours: 100 ppm. Limit value 8 hours: 442 mg/m ³ . Short Term 15 minutes: 200 ppm. Short Term 15 minutes: 884 mg/m ³ .
 n-Butyl acetate	Ministers Cabinet Regulations Nr.325 - AER (Latvia, 3/2024) TWA 8 hours: 241 mg/m ³ . STEL 15 minutes: 150 ppm. STEL 15 minutes: 723 mg/m ³ . TWA 8 hours: 50 ppm.
acetone	Ministers Cabinet Regulations Nr.325 - AER (Latvia, 3/2024) TWA 8 hours: 1210 mg/m ³ . TWA 8 hours: 500 ppm.
Toluene	Ministers Cabinet Regulations Nr.325 - AER (Latvia, 3/2024) Absorbed through skin. TWA 8 hours: 50 mg/m ³ . STEL 15 minutes: 150 mg/m ³ . TWA 8 hours: 14 ppm. STEL 15 minutes: 40 ppm.
Xylene	Ministers Cabinet Regulations Nr.325 - AER (Latvia, 3/2024) [Ksilols] Absorbed through skin.


SECTION 8: Exposure controls/personal protection

Ethyl acetate	<p>TWA 8 hours: 221 mg/m³. TWA 8 hours: 50 ppm. STEL 15 minutes: 100 ppm. STEL 15 minutes: 442 mg/m³.</p> <p>Ministers Cabinet Regulations Nr.325 - AER (Latvia, 3/2024) TWA 8 hours: 200 mg/m³. STEL 15 minutes: 400 ppm. STEL 15 minutes: 1468 mg/m³. TWA 8 hours: 54 ppm.</p>
iso-butanol	<p>Ministers Cabinet Regulations Nr.325 - AER (Latvia, 3/2024) [Butilspirti] TWA 8 hours: 10 mg/m³.</p>
Propan-2-ol	<p>Ministers Cabinet Regulations Nr.325 - AER (Latvia, 3/2024) TWA 8 hours: 350 mg/m³. STEL 15 minutes: 600 mg/m³.</p>
Ethylbenzene	<p>Ministers Cabinet Regulations Nr.325 - AER (Latvia, 3/2024) Absorbed through skin. TWA 8 hours: 442 mg/m³. TWA 8 hours: 100 ppm. STEL 15 minutes: 200 ppm. STEL 15 minutes: 884 mg/m³.</p>
 -Butyl acetate	<p>Lithuanian Hygiene Standard HN 23 (Lithuania, 1/2024) TWA 8 hours: 241 mg/m³. TWA 8 hours: 50 ppm. STEL 15 minutes: 723 mg/m³. STEL 15 minutes: 150 ppm.</p>
acetone	<p>Lithuanian Hygiene Standard HN 23 (Lithuania, 1/2024) TWA 8 hours: 1210 mg/m³. TWA 8 hours: 500 ppm. STEL 15 minutes: 2420 mg/m³. STEL 15 minutes: 1000 ppm.</p>
Toluene	<p>Lithuanian Hygiene Standard HN 23 (Lithuania, 1/2024) Repr. Absorbed through skin. TWA 8 hours: 192 mg/m³. TWA 8 hours: 50 ppm. STEL 15 minutes: 384 mg/m³. STEL 15 minutes: 100 ppm.</p>
Xylene	<p>Lithuanian Hygiene Standard HN 23 (Lithuania, 1/2024) [ksilenas, mišrūs izomerai, grynas] Absorbed through skin. STEL 15 minutes: 442 mg/m³. TWA 8 hours: 50 ppm. STEL 15 minutes: 100 ppm. TWA 8 hours: 221 mg/m³.</p>
Ethyl acetate	<p>Lithuanian Hygiene Standard HN 23 (Lithuania, 1/2024) TWA 8 hours: 500 mg/m³. TWA 8 hours: 150 ppm. CEIL: 1100 mg/m³. CEIL: 300 ppm.</p>
iso-butanol	<p>Lithuanian Hygiene Standard HN 23 (Lithuania, 1/2024) Absorbed through skin. TWA 8 hours: 10 mg/m³.</p>
Propan-2-ol	<p>Lithuanian Hygiene Standard HN 23 (Lithuania, 1/2024) TWA 8 hours: 350 mg/m³. TWA 8 hours: 150 ppm. STEL 15 minutes: 600 mg/m³. STEL 15 minutes: 250 ppm.</p>
Ethylbenzene	<p>Lithuanian Hygiene Standard HN 23 (Lithuania, 1/2024) Absorbed through skin. TWA 8 hours: 442 mg/m³. TWA 8 hours: 100 ppm. STEL 15 minutes: 884 mg/m³. STEL 15 minutes: 200 ppm.</p>

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n-Butyl acetate	Grand-Duchy Regulation 2016. Chemical agents. Annex I (Luxembourg, 3/2021) STEL 15 minutes: 150 ppm. STEL 15 minutes: 723 mg/m ³ . TWA 8 hours: 50 ppm. TWA 8 hours: 241 mg/m ³ .
acetone	Grand-Duchy Regulation 2016. Chemical agents. Annex I (Luxembourg, 3/2021) TWA 8 hours: 500 ppm. TWA 8 hours: 1210 mg/m ³ .
Toluene	Grand-Duchy Regulation 2016. Chemical agents. Annex I (Luxembourg, 3/2021) Absorbed through skin. STEL 15 minutes: 100 ppm. STEL 15 minutes: 384 mg/m ³ . TWA 8 hours: 50 ppm. TWA 8 hours: 192 mg/m ³ .
Xylene	Grand-Duchy Regulation 2016. Chemical agents. Annex I (Luxembourg, 3/2021) [xylène Isomères mixtes, pures] Absorbed through skin. TWA 8 hours: 50 ppm. TWA 8 hours: 221 mg/m ³ . STEL 15 minutes: 100 ppm. STEL 15 minutes: 442 mg/m ³ .
Ethyl acetate	Grand-Duchy Regulation 2016. Chemical agents. Annex I (Luxembourg, 3/2021) STEL 15 minutes: 400 ppm. STEL 15 minutes: 1468 mg/m ³ . TWA 8 hours: 200 ppm. TWA 8 hours: 734 mg/m ³ .
Ethylbenzene	Grand-Duchy Regulation 2016. Chemical agents. Annex I (Luxembourg, 3/2021) Absorbed through skin. TWA 8 hours: 100 ppm. TWA 8 hours: 442 mg/m ³ . STEL 15 minutes: 200 ppm. STEL 15 minutes: 884 mg/m ³ .
n-Butyl acetate	EU OEL (Europe, 1/2022) STEL 15 minutes: 150 ppm. STEL 15 minutes: 723 mg/m ³ . TWA 8 hours: 241 mg/m ³ . TWA 8 hours: 50 ppm.
acetone	EU OEL (Europe, 1/2022) TWA 8 hours: 500 ppm. TWA 8 hours: 1210 mg/m ³ .
Toluene	EU OEL (Europe, 1/2022) Absorbed through skin. TWA 8 hours: 192 mg/m ³ . TWA 8 hours: 50 ppm. STEL 15 minutes: 384 mg/m ³ . STEL 15 minutes: 100 ppm.
Xylene	EU OEL (Europe, 1/2022) [xylene, mixed isomers] Absorbed through skin. TWA 8 hours: 50 ppm. TWA 8 hours: 221 mg/m ³ . STEL 15 minutes: 100 ppm. STEL 15 minutes: 442 mg/m ³ .
Ethyl acetate	EU OEL (Europe, 1/2022) STEL 15 minutes: 400 ppm. STEL 15 minutes: 1468 mg/m ³ . TWA 8 hours: 200 ppm. TWA 8 hours: 734 mg/m ³ .
Ethylbenzene	EU OEL (Europe, 1/2022) Absorbed through skin. TWA 8 hours: 100 ppm. TWA 8 hours: 442 mg/m ³ . STEL 15 minutes: 200 ppm.

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 n-Butyl acetate

STEL 15 minutes: 884 mg/m³.

Ministry of Social Affairs and Employment, Legal limit values (Netherlands, 5/2024)

TWA 8 hours: 241 mg/m³.

STEL 15 minutes: 723 mg/m³.

STEL 15 minutes: 150 ppm.

TWA 8 hours: 50 ppm.

acetone

Ministry of Social Affairs and Employment, Legal limit values (Netherlands, 5/2024)

STEL 15 minutes: 2420 mg/m³.

TWA 8 hours: 1210 mg/m³.

TWA 8 hours: 500 ppm.

STEL 15 minutes: 1000 ppm.

Toluene

Ministry of Social Affairs and Employment, Legal limit values (Netherlands, 5/2024)

TWA 8 hours: 150 mg/m³.

STEL 15 minutes: 384 mg/m³.

STEL 15 minutes: 100 ppm.

TWA 8 hours: 39 ppm.

Xylene

Ministry of Social Affairs and Employment, Legal limit values (Netherlands, 5/2024) [xyleen, o-, m-, p-isomeren] Absorbed through skin.

TWA 8 hours: 210 mg/m³.

STEL 15 minutes: 442 mg/m³.

STEL 15 minutes: 100 ppm.

TWA 8 hours: 47.5 ppm.

Ethyl acetate

Ministry of Social Affairs and Employment, Legal limit values (Netherlands, 5/2024)

STEL 15 minutes: 1468 mg/m³.

TWA 8 hours: 734 mg/m³.

STEL 15 minutes: 400 ppm.

TWA 8 hours: 200 ppm.

Ethylbenzene


Ministry of Social Affairs and Employment, Legal limit values (Netherlands, 5/2024) Absorbed through skin.

TWA 8 hours: 215 mg/m³.

STEL 15 minutes: 430 mg/m³.

STEL 15 minutes: 97.3 ppm.

TWA 8 hours: 48.6 ppm.

 n-Butyl acetate

FOR-2011-12-06-1358 (Norway, 5/2024)

STEL 15 minutes: 723 mg/m³.

STEL 15 minutes: 150 ppm.

TWA 8 hours: 241 mg/m³.

TWA 8 hours: 50 ppm.

acetone

FOR-2011-12-06-1358 (Norway, 5/2024)

TWA 8 hours: 125 ppm.

TWA 8 hours: 295 mg/m³.

Toluene

FOR-2011-12-06-1358 (Norway, 5/2024) Absorbed through skin.

TWA 8 hours: 25 ppm.

TWA 8 hours: 94 mg/m³.

Xylene

FOR-2011-12-06-1358 (Norway, 5/2024) [xylen] Absorbed through skin.

TWA 8 hours: 25 ppm.

TWA 8 hours: 108 mg/m³.

Ethyl acetate

FOR-2011-12-06-1358 (Norway, 5/2024)

TWA 8 hours: 200 ppm.

TWA 8 hours: 734 mg/m³.

STEL 15 minutes: 1468 mg/m³.

STEL 15 minutes: 400 ppm.

iso-butanol

FOR-2011-12-06-1358 (Norway, 5/2024) Absorbed through skin.


CEIL: 75 mg/m³.

CEIL: 25 ppm.


Propan-2-ol

FOR-2011-12-06-1358 (Norway, 5/2024)

SECTION 8: Exposure controls/personal protection

Ethylbenzene	<p>TWA 8 hours: 100 ppm. TWA 8 hours: 245 mg/m³.</p> <p>FOR-2011-12-06-1358 (Norway, 5/2024) Carc. Absorbed through skin. TWA 8 hours: 5 ppm. TWA 8 hours: 20 mg/m³.</p>
 Butyl acetate	<p>Regulation of the Minister of Family, Labor and Social Policy of June 12, 2018 on the maximum permissible concentrations and intensities of factors harmful to health in the work environment (Journal of Laws of 2018, item 1286) (Poland, 7/2024) TWA 8 hours: 240 mg/m³. STEL 15 minutes: 720 mg/m³.</p>
acetone	<p>Regulation of the Minister of Family, Labor and Social Policy of June 12, 2018 on the maximum permissible concentrations and intensities of factors harmful to health in the work environment (Journal of Laws of 2018, item 1286) (Poland, 7/2024) TWA 8 hours: 600 mg/m³. STEL 15 minutes: 1800 mg/m³.</p>
Toluene	<p>Regulation of the Minister of Family, Labor and Social Policy of June 12, 2018 on the maximum permissible concentrations and intensities of factors harmful to health in the work environment (Journal of Laws of 2018, item 1286) (Poland, 7/2024) Absorbed through skin. TWA 8 hours: 100 mg/m³. STEL 15 minutes: 200 mg/m³.</p>
Xylene	<p>Regulation of the Minister of Family, Labor and Social Policy of June 12, 2018 on the maximum permissible concentrations and intensities of factors harmful to health in the work environment (Journal of Laws of 2018, item 1286) (Poland, 7/2024) [xylene – mixed isomers (1,2-, 1,3-, 1,4-)] Absorbed through skin. TWA 8 hours: 100 mg/m³. STEL 15 minutes: 200 mg/m³.</p>
Ethyl acetate	<p>Regulation of the Minister of Family, Labor and Social Policy of June 12, 2018 on the maximum permissible concentrations and intensities of factors harmful to health in the work environment (Journal of Laws of 2018, item 1286) (Poland, 7/2024) TWA 8 hours: 734 mg/m³. STEL 15 minutes: 1468 mg/m³. STEL 15 minutes: 400 ppm. TWA 8 hours: 200 ppm.</p>
iso-butanol	<p>Regulation of the Minister of Family, Labor and Social Policy of June 12, 2018 on the maximum permissible concentrations and intensities of factors harmful to health in the work environment (Journal of Laws of 2018, item 1286) (Poland, 7/2024) Absorbed through skin. TWA 8 hours: 100 mg/m³. STEL 15 minutes: 200 mg/m³.</p>
Propan-2-ol	<p>Regulation of the Minister of Family, Labor and Social Policy of June 12, 2018 on the maximum permissible concentrations and intensities of factors harmful to health in the work environment (Journal of Laws of 2018, item 1286) (Poland, 7/2024) Absorbed through skin. TWA 8 hours: 900 mg/m³. STEL 15 minutes: 1200 mg/m³.</p>
Ethylbenzene	<p>Regulation of the Minister of Family, Labor and Social Policy of June 12, 2018 on the maximum permissible concentrations and intensities of factors harmful to health in the work environment (Journal of Laws of 2018, item 1286) (Poland, 7/2024) Absorbed through skin.</p>

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 Butyl acetate

TWA 8 hours: 200 mg/m³.
STEL 15 minutes: 400 mg/m³.

Portuguese Institute of Quality (Portugal, 11/2014)

TWA 8 hours: 150 ppm.
STEL 15 minutes: 200 ppm.

Decree-Law 24/2012 - Occupational exposure limits for chemical agents (Portugal, 6/2021)

STEL 15 minutes: 150 ppm.
STEL 15 minutes: 723 mg/m³.
TWA 8 hours: 50 ppm.
TWA 8 hours: 241 mg/m³.

acetone

Portuguese Institute of Quality (Portugal, 11/2014) A4.

TWA 8 hours: 500 ppm.
STEL 15 minutes: 750 ppm.

Decree-Law 24/2012 - Occupational exposure limits for chemical agents (Portugal, 6/2021)

TWA 8 hours: 500 ppm.
TWA 8 hours: 1210 mg/m³.

Toluene

Portuguese Institute of Quality (Portugal, 11/2014) A4.

TWA 8 hours: 20 ppm.

Decree-Law 24/2012 - Occupational exposure limits for chemical agents (Portugal, 6/2021) Absorbed through skin.

STEL 15 minutes: 100 ppm.
STEL 15 minutes: 384 mg/m³.
TWA 8 hours: 50 ppm.
TWA 8 hours: 192 mg/m³.

Xylene

Portuguese Institute of Quality (Portugal, 11/2014) [xileno (isómeros o, m & p)] A4.

TWA 8 hours: 100 ppm.
STEL 15 minutes: 150 ppm.

Decree-Law 24/2012 - Occupational exposure limits for chemical agents (Portugal, 6/2021) [xilenos] Absorbed through skin.

STEL 15 minutes: 100 ppm.
STEL 15 minutes: 442 mg/m³.
TWA 8 hours: 50 ppm.
TWA 8 hours: 221 mg/m³.

Ethyl acetate

Portuguese Institute of Quality (Portugal, 11/2014)

TWA 8 hours: 400 ppm.

Decree-Law 24/2012 - Occupational exposure limits for chemical agents (Portugal, 6/2021)

STEL 15 minutes: 400 ppm.
STEL 15 minutes: 1468 mg/m³.
TWA 8 hours: 200 ppm.
TWA 8 hours: 734 mg/m³.

iso-butanol

Portuguese Institute of Quality (Portugal, 11/2014)

TWA 8 hours: 50 ppm.

Propan-2-ol

Portuguese Institute of Quality (Portugal, 11/2014) A4.

TWA 8 hours: 200 ppm.
STEL 15 minutes: 400 ppm.

Ethylbenzene

Portuguese Institute of Quality (Portugal, 11/2014) A3.

TWA 8 hours: 20 ppm.

Decree-Law 24/2012 - Occupational exposure limits for chemical agents (Portugal, 6/2021) Absorbed through skin.

STEL 15 minutes: 200 ppm.
STEL 15 minutes: 884 mg/m³.
TWA 8 hours: 100 ppm.
TWA 8 hours: 442 mg/m³.


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n-Butyl acetate	<p>HG 1218/2006, Annex 1, with subsequent modifications and additions (Romania, 3/2024) VLA 8 hours: 241 mg/m³. VLA 8 hours: 50 ppm. Short term 15 minutes: 723 mg/m³. Short term 15 minutes: 150 ppm.</p>
acetone	<p>HG 1218/2006, Annex 1, with subsequent modifications and additions (Romania, 3/2024) VLA 8 hours: 1210 mg/m³. VLA 8 hours: 500 ppm.</p>
Toluene	<p>HG 1218/2006, Annex 1, with subsequent modifications and additions (Romania, 3/2024) R2. Absorbed through skin. VLA 8 hours: 192 mg/m³. VLA 8 hours: 50 ppm. Short term 15 minutes: 384 mg/m³. Short term 15 minutes: 100 ppm.</p>
Xylene	<p>HG 1218/2006, Annex 1, with subsequent modifications and additions (Romania, 3/2024) [xilen] Absorbed through skin. VLA 8 hours: 221 mg/m³. VLA 8 hours: 50 ppm. Short term 15 minutes: 442 mg/m³. Short term 15 minutes: 100 ppm.</p>
Ethyl acetate	<p>HG 1218/2006, Annex 1, with subsequent modifications and additions (Romania, 3/2024) VLA 8 hours: 734 mg/m³. VLA 8 hours: 200 ppm. Short term 15 minutes: 1468 mg/m³. Short term 15 minutes: 400 ppm.</p>
iso-butanol	<p>HG 1218/2006, Annex 1, with subsequent modifications and additions (Romania, 3/2024) VLA 8 hours: 100 mg/m³. VLA 8 hours: 33 ppm. Short term 15 minutes: 200 mg/m³. Short term 15 minutes: 66 ppm.</p>
Propan-2-ol	<p>HG 1218/2006, Annex 1, with subsequent modifications and additions (Romania, 3/2024) VLA 8 hours: 200 mg/m³. VLA 8 hours: 81 ppm. Short term 15 minutes: 500 mg/m³. Short term 15 minutes: 203 ppm.</p>
Ethylbenzene	<p>HG 1218/2006, Annex 1, with subsequent modifications and additions (Romania, 3/2024) Absorbed through skin. VLA 8 hours: 442 mg/m³. VLA 8 hours: 100 ppm. Short term 15 minutes: 884 mg/m³. Short term 15 minutes: 200 ppm.</p>
n-Butyl acetate	<p>Government regulation SR c. 355/2006 (Slovakia, 6/2024) [butylacetáty] Inhalation sensitiser. TWA 8 hours: 241 mg/m³ (Butyl acetates). TWA 8 hours: 50 ppm (Butyl acetates). STEL 15 minutes: 723 mg/m³ (Butyl acetates). STEL 15 minutes: 150 ppm (Butyl acetates).</p>
acetone	<p>Government regulation SR c. 355/2006 (Slovakia, 6/2024) Inhalation sensitiser. TWA 8 hours: 1210 mg/m³. TWA 8 hours: 500 ppm.</p>
Toluene	<p>Government regulation SR c. 355/2006 (Slovakia, 6/2024) Absorbed through skin , Inhalation sensitiser. TWA 8 hours: 192 mg/m³. TWA 8 hours: 50 ppm. STEL 15 minutes: 384 mg/m³. STEL 15 minutes: 100 ppm.</p>
Xylene	<p>Government regulation SR c. 355/2006 (Slovakia, 6/2024)</p>

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Ethyl acetate	<p>[xylén, zmiešané izoméry] Absorbed through skin , Inhalation sensitiser.</p> <p>TWA 8 hours: 221 mg/m³ (xylene, mixed isomers).</p> <p>TWA 8 hours: 50 ppm (xylene, mixed isomers).</p> <p>STEL 15 minutes: 442 mg/m³ (xylene, mixed isomers).</p> <p>STEL 15 minutes: 100 ppm (xylene, mixed isomers).</p> <p>Government regulation SR c. 355/2006 (Slovakia, 6/2024)</p> <p>Inhalation sensitiser.</p> <p>TWA 8 hours: 734 mg/m³.</p> <p>TWA 8 hours: 200 ppm.</p> <p>STEL 15 minutes: 1468 mg/m³.</p> <p>STEL 15 minutes: 400 ppm.</p>
iso-butanol	<p>Government regulation SR c. 355/2006 (Slovakia, 6/2024)</p> <p>[butylalkoholy] Inhalation sensitiser.</p> <p>TWA 8 hours: 310 mg/m³ (Butyl alkohols).</p> <p>TWA 8 hours: 100 ppm (Butyl alkohols).</p>
Propan-2-ol	<p>Government regulation SR c. 355/2006 (Slovakia, 6/2024)</p> <p>Inhalation sensitiser.</p> <p>TWA 8 hours: 500 mg/m³.</p> <p>TWA 8 hours: 200 ppm.</p> <p>STEL 15 minutes: 1000 mg/m³.</p> <p>STEL 15 minutes: 400 ppm.</p>
Ethylbenzene	<p>Government regulation SR c. 355/2006 (Slovakia, 6/2024)</p> <p>Absorbed through skin , Inhalation sensitiser.</p> <p>TWA 8 hours: 442 mg/m³.</p> <p>TWA 8 hours: 100 ppm.</p> <p>STEL 15 minutes: 884 mg/m³.</p> <p>STEL 15 minutes: 200 ppm.</p>
n-Butyl acetate	<p>Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 4/2024)</p> <p>TWA 8 hours: 241 mg/m³.</p> <p>TWA 8 hours: 50 ppm.</p> <p>KTV 15 minutes: 723 mg/m³ 4 times per shift [time between two exposure events at this concentration must be at least 60 minutes].</p> <p>KTV 15 minutes: 150 ppm 4 times per shift [time between two exposure events at this concentration must be at least 60 minutes].</p>
acetone	<p>Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 4/2024)</p> <p>TWA 8 hours: 1210 mg/m³.</p> <p>TWA 8 hours: 500 ppm.</p> <p>KTV 15 minutes: 1000 ppm 4 times per shift [time between two exposure events at this concentration must be at least 60 minutes].</p> <p>KTV 15 minutes: 2420 mg/m³ 4 times per shift [time between two exposure events at this concentration must be at least 60 minutes].</p>
Toluene	<p>Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 4/2024)</p> <p>Repr Dev 2. Absorbed through skin.</p> <p>TWA 8 hours: 192 mg/m³.</p> <p>TWA 8 hours: 50 ppm.</p> <p>KTV 15 minutes: 384 mg/m³ 4 times per shift [time between two exposure events at this concentration must be at least 60 minutes].</p> <p>KTV 15 minutes: 100 ppm 4 times per shift [time between two exposure events at this concentration must be at least 60 minutes].</p>
Xylene	<p>Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 4/2024)</p> <p>[ksilen] Absorbed through skin.</p> <p>TWA 8 hours: 221 mg/m³.</p> <p>TWA 8 hours: 50 ppm.</p> <p>KTV 15 minutes: 442 mg/m³ 4 times per shift [time between two exposure events at this concentration must be at least 60 minutes].</p> <p>KTV 15 minutes: 100 ppm 4 times per shift [time between two exposure events at this concentration must be at least 60 minutes].</p>
Ethyl acetate	<p>Regulation on protection of workers from the risks related to</p>



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iso-butanol	<p>exposure to chemical substances at work (Slovenia, 4/2024) TWA 8 hours: 734 mg/m³. TWA 8 hours: 200 ppm. KTV 15 minutes: 1468 mg/m³ 4 times per shift [time between two exposure events at this concentration must be at least 60 minutes]. KTV 15 minutes: 400 ppm 4 times per shift [time between two exposure events at this concentration must be at least 60 minutes].</p> <p>Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 4/2024) TWA 8 hours: 310 mg/m³. TWA 8 hours: 100 ppm. KTV 15 minutes: 310 mg/m³ 4 times per shift [time between two exposure events at this concentration must be at least 60 minutes]. KTV 15 minutes: 100 ppm 4 times per shift [time between two exposure events at this concentration must be at least 60 minutes].</p>
Propan-2-ol	<p>Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 4/2024) TWA 8 hours: 500 mg/m³. TWA 8 hours: 200 ppm. KTV 15 minutes: 1000 mg/m³ 4 times per shift [time between two exposure events at this concentration must be at least 60 minutes]. KTV 15 minutes: 400 ppm 4 times per shift [time between two exposure events at this concentration must be at least 60 minutes].</p>
Ethylbenzene	<p>Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 4/2024) Absorbed through skin. TWA 8 hours: 442 mg/m³. TWA 8 hours: 100 ppm. KTV 15 minutes: 884 mg/m³ 4 times per shift [time between two exposure events at this concentration must be at least 60 minutes]. KTV 15 minutes: 200 ppm 4 times per shift [time between two exposure events at this concentration must be at least 60 minutes].</p>
1-Ethoxy-2-propanol	<p>Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 4/2024) Absorbed through skin. KTV 15 minutes: 100 ppm 4 times per shift [time between two exposure events at this concentration must be at least 60 minutes]. TWA 8 hours: 50 ppm. KTV 15 minutes: 440 mg/m³ 4 times per shift [time between two exposure events at this concentration must be at least 60 minutes]. TWA 8 hours: 220 mg/m³.</p>
 Butyl acetate	<p>National institute of occupational safety and health (Spain, 1/2024) TWA 8 hours: 50 ppm. TWA 8 hours: 241 mg/m³. STEL 15 minutes: 150 ppm. STEL 15 minutes: 723 mg/m³.</p>
acetone	<p>National institute of occupational safety and health (Spain, 1/2024) TWA 8 hours: 500 ppm. TWA 8 hours: 1210 mg/m³.</p>
Toluene	<p>National institute of occupational safety and health (Spain, 1/2024) Absorbed through skin. TWA 8 hours: 50 ppm. TWA 8 hours: 192 mg/m³. STEL 15 minutes: 100 ppm. STEL 15 minutes: 384 mg/m³.</p>
Xylene	<p>National institute of occupational safety and health (Spain, 1/2024) [xileno, mezcla isómeros] Absorbed through skin. TWA 8 hours: 50 ppm. TWA 8 hours: 221 mg/m³. STEL 15 minutes: 100 ppm. STEL 15 minutes: 442 mg/m³.</p>

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Ethyl acetate	National institute of occupational safety and health (Spain, 1/2024) TWA 8 hours: 200 ppm. TWA 8 hours: 734 mg/m ³ . STEL 15 minutes: 1468 mg/m ³ . STEL 15 minutes: 400 ppm.
iso-butanol	National institute of occupational safety and health (Spain, 1/2024) TWA 8 hours: 50 ppm. TWA 8 hours: 154 mg/m ³ .
Propan-2-ol	National institute of occupational safety and health (Spain, 1/2024) TWA 8 hours: 200 ppm. TWA 8 hours: 500 mg/m ³ . STEL 15 minutes: 400 ppm. STEL 15 minutes: 1000 mg/m ³ .
Ethylbenzene	National institute of occupational safety and health (Spain, 1/2024) Absorbed through skin. TWA 8 hours: 100 ppm. TWA 8 hours: 441 mg/m ³ . STEL 15 minutes: 200 ppm. STEL 15 minutes: 884 mg/m ³ .
n-Butyl acetate	Work environment authority Regulation 2018:1 (Sweden, 11/2022) [butyl acetate] TWA 8 hours: 50 ppm. TWA 8 hours: 241 mg/m ³ . STEL 15 minutes: 150 ppm. STEL 15 minutes: 723 mg/m ³ .
acetone	Work environment authority Regulation 2018:1 (Sweden, 11/2022) TWA 8 hours: 250 ppm. TWA 8 hours: 600 mg/m ³ . STEL 15 minutes: 500 ppm. STEL 15 minutes: 1200 mg/m ³ .
Toluene	Work environment authority Regulation 2018:1 (Sweden, 11/2022) Absorbed through skin , Ototoxicant. TWA 8 hours: 50 ppm. TWA 8 hours: 192 mg/m ³ . STEL 15 minutes: 100 ppm. STEL 15 minutes: 384 mg/m ³ .
Xylene	Work environment authority Regulation 2018:1 (Sweden, 11/2022) [xylene] Absorbed through skin. TWA 8 hours: 50 ppm. TWA 8 hours: 221 mg/m ³ . STEL 15 minutes: 100 ppm. STEL 15 minutes: 442 mg/m ³ .
Ethyl acetate	Work environment authority Regulation 2018:1 (Sweden, 11/2022) TWA 8 hours: 150 ppm. TWA 8 hours: 550 mg/m ³ . STEL 15 minutes: 300 ppm. STEL 15 minutes: 1100 mg/m ³ .
iso-butanol	Work environment authority Regulation 2018:1 (Sweden, 11/2022) Absorbed through skin. TWA 8 hours: 50 ppm. TWA 8 hours: 150 mg/m ³ . STEL 15 minutes: 75 ppm. STEL 15 minutes: 250 mg/m ³ .
Propan-2-ol	Work environment authority Regulation 2018:1 (Sweden, 11/2022) TWA 8 hours: 150 ppm. TWA 8 hours: 350 mg/m ³ . STEL 15 minutes: 250 ppm.

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Ethylbenzene	<p>STEL 15 minutes: 600 mg/m³.</p> <p>Work environment authority Regulation 2018:1 (Sweden, 11/2022) Absorbed through skin.</p> <p>TWA 8 hours: 50 ppm.</p> <p>TWA 8 hours: 220 mg/m³.</p> <p>STEL 15 minutes: 200 ppm.</p> <p>STEL 15 minutes: 884 mg/m³.</p>
 Butyl acetate	<p>SUVA (Switzerland, 1/2025)</p> <p>TWA 8 hours: 50 ppm.</p> <p>TWA 8 hours: 240 mg/m³.</p> <p>STEL 15 minutes: 150 ppm.</p> <p>STEL 15 minutes: 720 mg/m³.</p>
acetone	<p>SUVA (Switzerland, 1/2025)</p> <p>TWA 8 hours: 500 ppm.</p> <p>TWA 8 hours: 1200 mg/m³.</p> <p>STEL 15 minutes: 1000 ppm.</p> <p>STEL 15 minutes: 2400 mg/m³.</p>
Toluene	<p>SUVA (Switzerland, 1/2025) Develop 2. Absorbed through skin , Ototoxicant.</p> <p>TWA 8 hours: 50 ppm.</p> <p>TWA 8 hours: 190 mg/m³.</p> <p>STEL 15 minutes: 200 ppm.</p> <p>STEL 15 minutes: 760 mg/m³.</p>
Xylene	<p>SUVA (Switzerland, 1/2025) [Xylol] Absorbed through skin.</p> <p>TWA 8 hours: 50 ppm.</p> <p>TWA 8 hours: 220 mg/m³.</p> <p>STEL 15 minutes: 100 ppm.</p> <p>STEL 15 minutes: 440 mg/m³.</p>
Ethyl acetate	<p>SUVA (Switzerland, 1/2025)</p> <p>STEL 15 minutes: 400 ppm.</p> <p>STEL 15 minutes: 1460 mg/m³.</p> <p>TWA 8 hours: 200 ppm.</p> <p>TWA 8 hours: 730 mg/m³.</p>
iso-butanol	<p>SUVA (Switzerland, 1/2025)</p> <p>TWA 8 hours: 50 ppm.</p> <p>TWA 8 hours: 150 mg/m³.</p> <p>STEL 15 minutes: 50 ppm.</p> <p>STEL 15 minutes: 150 mg/m³.</p>
Propan-2-ol	<p>SUVA (Switzerland, 1/2025)</p> <p>TWA 8 hours: 200 ppm.</p> <p>TWA 8 hours: 500 mg/m³.</p> <p>STEL 15 minutes: 400 ppm.</p> <p>STEL 15 minutes: 1000 mg/m³.</p>
Ethylbenzene	<p>SUVA (Switzerland, 1/2025) Absorbed through skin , Ototoxicant.</p> <p>TWA 8 hours: 50 ppm.</p> <p>TWA 8 hours: 220 mg/m³.</p> <p>STEL 15 minutes: 50 ppm.</p> <p>STEL 15 minutes: 220 mg/m³.</p>
1-Ethoxy-2-propanol	<p>SUVA (Switzerland, 1/2025) Absorbed through skin.</p> <p>STEL 15 minutes: 100 ppm.</p> <p>STEL 15 minutes: 440 mg/m³.</p> <p>TWA 8 hours: 50 ppm.</p> <p>TWA 8 hours: 220 mg/m³.</p>
 Butyl acetate	<p>EH40/2005 WELs (United Kingdom (UK), 1/2020)</p> <p>STEL 15 minutes: 966 mg/m³.</p> <p>STEL 15 minutes: 200 ppm.</p> <p>TWA 8 hours: 724 mg/m³.</p> <p>TWA 8 hours: 150 ppm.</p>
acetone	<p>EH40/2005 WELs (United Kingdom (UK), 1/2020)</p> <p>STEL 15 minutes: 3620 mg/m³.</p> <p>STEL 15 minutes: 1500 ppm.</p> <p>TWA 8 hours: 500 ppm.</p> <p>TWA 8 hours: 1210 mg/m³.</p>

SECTION 8: Exposure controls/personal protection

Toluene	EH40/2005 WELs (United Kingdom (UK), 1/2020) Absorbed through skin. STEL 15 minutes: 384 mg/m ³ . TWA 8 hours: 191 mg/m ³ . TWA 8 hours: 50 ppm. STEL 15 minutes: 100 ppm.
Xylene	EH40/2005 WELs (United Kingdom (UK), 1/2020) [xylene, o-,m-, p- or mixed isomers] Absorbed through skin. STEL 15 minutes: 441 mg/m ³ . TWA 8 hours: 50 ppm. TWA 8 hours: 220 mg/m ³ . STEL 15 minutes: 100 ppm.
Ethyl acetate	EH40/2005 WELs (United Kingdom (UK), 1/2020) STEL 15 minutes: 400 ppm. TWA 8 hours: 200 ppm. STEL 15 minutes: 1468 mg/m ³ . TWA 8 hours: 734 mg/m ³ .
iso-butanol	EH40/2005 WELs (United Kingdom (UK), 1/2020) STEL 15 minutes: 231 mg/m ³ . STEL 15 minutes: 75 ppm. TWA 8 hours: 154 mg/m ³ . TWA 8 hours: 50 ppm.
Propan-2-ol	EH40/2005 WELs (United Kingdom (UK), 1/2020) STEL 15 minutes: 1250 mg/m ³ . STEL 15 minutes: 500 ppm. TWA 8 hours: 999 mg/m ³ . TWA 8 hours: 400 ppm.
Ethylbenzene	EH40/2005 WELs (United Kingdom (UK), 1/2020) Absorbed through skin. STEL 15 minutes: 552 mg/m ³ . STEL 15 minutes: 125 ppm. TWA 8 hours: 100 ppm. TWA 8 hours: 441 mg/m ³ .

Biological exposure indices

Product/ingredient name	Exposure indices
Toluene	VGU BEI (Austria, 9/2020) BEI Fitness: 250 µg/l, toluene [in blood]. Sampling time: one year. BEI Fitness: 0.8 mg/l, o-cresol [in urine]. Sampling time: one year. BEI Fitness: 130000 /µl, platelets (non-pathological differential blood count) [in blood]. Sampling time: one year. BEI Fitness: 150000 /µl, platelets [in blood]. Sampling time: one year. BEI Fitness: 3700 to 13000 /µl, leukocytes (non-pathological differential blood count) [in blood]. Sampling time: one year. BEI Fitness: 4000 to 13000 /µl, leukocytes [in blood]. Sampling time: one year. BEI Fitness - men: 3.8 million/µl, erythrocytes [in blood]. Sampling time: one year. BEI Fitness - women: 3.2 million/µl, erythrocytes [in blood]. Sampling time: one year. BEI Fitness - men: 12 g/dl, hemoglobin [in blood]. Sampling time: one year. BEI Fitness - women: 10 g/dl, hemoglobin [in blood]. Sampling time: one year.
Xylene	VGU BEI (Austria, 9/2020) [Xylolole] BEI Fitness: 1000 µg/l, xylene [in blood]. Sampling time: one year. BEI Fitness: 1.5 g/l, methylhippuricacid [in urine]. Sampling time: one year.
No exposure indices known.	

SECTION 8: Exposure controls/personal protection

acetone	<p>Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 13/2003. (Bulgaria, 4/2024) BLV: 80 mg/l, acetone [in urine]. Sampling time: at the end of the exposure or at the end of the work shift.</p>
Toluene	<p>Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 13/2003. (Bulgaria, 4/2024) BLV: 1.6 mmol/mmol creatinine, hippuric acid [in urine]. Sampling time: at the end of the exposure or at the end of the work shift.</p>
Ethylbenzene	<p>Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 13/2003. (Bulgaria, 4/2024) Notes: significant skin resorption possible BLV: 2000 mg/g creatinine, mandelic acid and phenylglyoxylic acid – in total [in urine]. Sampling time: at the end of the exposure or at the end of the work shift.</p>
acetone	<p>Ordinance on the protection of workers from exposure to hazardous chemicals at work, biological limit values (Annex IV) (Croatia, 12/2023) BEI: 20 mg/g creatinine, acetone [in urine]. Sampling time: at the end of the work shift. BEI: 39 mmol/mol creatinine, acetone [in urine]. Sampling time: at the end of the work shift. BEI: 20 mg/l, acetone [in blood]. Sampling time: at the end of the work shift. BEI: 0.34 mmol/l, acetone [in blood]. Sampling time: at the end of the work shift.</p>
Toluene	<p>Ordinance on the protection of workers from exposure to hazardous chemicals at work, biological limit values (Annex IV) (Croatia, 12/2023) BEI: 20 ppm, toluene [in end exhaled air]. Sampling time: during exposure. BEI: 0.83 µmol/l, toluene [in end exhaled air]. Sampling time: during exposure. BEI: 1 mg/l, toluene [in blood]. Sampling time: at the end of the work shift. BEI: 10.85 µmol/l, toluene [in blood]. Sampling time: at the end of the work shift. BEI: 1.05 mmol/mol creatinine, o-cresol [in urine]. Sampling time: at the end of the work shift. BEI: 1 mg/g creatinine, o-cresol [in urine]. Sampling time: at the end of the work shift. BEI: 1.58 mol/mol creatinine, hippuric acid [in urine]. Sampling time: at the end of the work shift. BEI: 2.5 g/g creatinine, hippuric acid [in urine]. Sampling time: at the end of the work shift.</p>
Xylene	<p>Ordinance on the protection of workers from exposure to hazardous chemicals at work, biological limit values (Annex IV) (Croatia, 12/2023) [ksilen] BEI: 1.5 mg/l, xylene [in blood]. Sampling time: at the end of the work shift. BEI: 14.13 µmol/l, xylene [in blood]. Sampling time: at the end of the work shift. BEI: 0.88 mol/mol creatinine, methylhippuric acid [in urine]. Sampling time: at the end of the work shift. BEI: 1.5 g/g creatinine, methylhippuric acid [in urine]. Sampling time: at the end of the work shift.</p>
Propan-2-ol	<p>Ordinance on the protection of workers from exposure to hazardous chemicals at work, biological limit values (Annex IV) (Croatia, 12/2023)</p>

SECTION 8: Exposure controls/personal protection

	<p>BEI: 50 mg/l, acetone [in urine]. Sampling time: at the end of the work shift.</p> <p>BEI: 50 mg/l, acetone [in blood]. Sampling time: at the end of the work shift.</p> <p>BEI: 0.86 µmol/l, acetone [in urine]. Sampling time: at the end of the work shift.</p> <p>BEI: 0.86 µmol/l, acetone [in blood]. Sampling time: at the end of the work shift.</p>
Ethylbenzene	<p>Ordinance on the protection of workers from exposure to hazardous chemicals at work, biological limit values (Annex IV) (Croatia, 12/2023)</p> <p>BEI: 1.5 mg/l, ethylbenzene [in blood]. Sampling time: during exposure.</p> <p>BEI: 14.1 µmol/l, ethylbenzene [in blood]. Sampling time: during exposure.</p> <p>BEI: 1.12 mol/mol creatinine, almond acid [in urine]. Sampling time: at the end of the work shift and at the end of the working week.</p> <p>BEI: 1.5 g/g creatinine, almond acid [in urine]. Sampling time: at the end of the work shift and at the end of the working week.</p>
No exposure indices known.	
Toluene	<p>Government regulation of Czech Republic Limit Values of Biological Exposure Tests (Czech Republic, 9/2015)</p> <p>Biological limit values: 1000 µmol/mmol creatinine, hippuric acid [in urine]. Sampling time: end of the shift.</p> <p>Biological limit values: 1600 mg/g, hippuric acid [in urine]. Sampling time: end of the shift.</p> <p>Biological limit values: 1.6 µmol/mmol creatinine, o-kresol (after hydrolysis) [in urine]. Sampling time: end of the shift.</p> <p>Biological limit values: 1.5 mg/g creatinine, o-kresol (after hydrolysis) [in urine]. Sampling time: end of the shift.</p>
Xylene	<p>Government regulation of Czech Republic Limit Values of Biological Exposure Tests (Czech Republic, 9/2015) [Xyleny]</p> <p>Biological limit values: 820 µmol/mmol creatinine, methylhippuric acid [in urine]. Sampling time: end of the shift.</p> <p>Biological limit values: 1400 mg/g creatinine, methylhippuric acid [in urine]. Sampling time: end of the shift.</p>
Ethylbenzene	<p>Government regulation of Czech Republic Limit Values of Biological Exposure Tests (Czech Republic, 9/2015)</p> <p>Biological limit values: 1100 µmol/mmol creatinine, almond acid [in urine]. Sampling time: end of the shift.</p> <p>Biological limit values: 1500 mg/g creatinine, almond acid [in urine]. Sampling time: end of the shift.</p>
No exposure indices known.	
No exposure indices known.	
No exposure indices known.	
Toluene	<p>Institute of Occupational Health, Ministry of Social Affairs (Finland, 9/2020)</p> <p>BEI: 500 nmol/l, toluene [in blood]. Sampling time: the morning after the working day.</p>
Xylene	<p>Institute of Occupational Health, Ministry of Social Affairs (Finland, 9/2020) [Ksyleeni]</p> <p>BEI: 5 mmol/l, methylhippuric acid [in urine]. Sampling time: at the end of the work shift.</p>
Ethylbenzene	<p>Institute of Occupational Health, Ministry of Social Affairs (Finland, 9/2020)</p> <p>BEI: 5.2 mmol/l, mandelic acid [in urine]. Sampling time: after</p>

SECTION 8: Exposure controls/personal protection

Toluene

work shift at the end of the working week or exposure period.

Biological limit values (BLV) - Labour Code / ANSES (France, 4/2023)

BLV: 30 µg/l, toluene [in urine]. Sampling time: at the end of the shift.

BLV: 20 µg/l, toluene [in blood]. Sampling time: at the beginning of the shift and at the end of the week.

BLV: 300 µg/g Cr, ortho-cresol [in urine]. Sampling time: end of shift and weekend.

acetone

DFG BEI-values list (Germany, 7/2024)

BEI: 50 mg/l, acetone [in urine]. Sampling time: end of exposure or end of shift.

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

BEI: 50 mg/l, acetone [in urine]. Sampling time: end of exposure or end of shift.

Toluene

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

BEI: 600 µg/l, toluene [in blood]. Sampling time: immediately after exposure.

BEI: 1.5 mg/l, o-cresol (after hydrolysis) [in urine]. Sampling time: end of exposure or end of shift / for long-term exposures: at the end of the shift after several shifts.

BEI: 75 µg/l, toluene [in urine]. Sampling time: end of exposure or end of shift.

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

BEI: 600 µg/l, toluene [in whole blood]. Sampling time: immediately after exposure.

BEI: 1.5 mg/l, o-cresol (after hydrolysis) [in urine]. Sampling time: at the end of the shift, for long-term exposure after several previous shifts.

BEI: 75 µg/l, toluene [in urine]. Sampling time: end of exposure or end of shift.

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.

Propan-2-ol

DFG BEI-values list (Germany, 7/2024)

BEI: 25 mg/l, acetone [in blood]. Sampling time: end of exposure or end of shift.

BEI: 25 mg/l, acetone [in urine]. Sampling time: end of exposure or end of shift.

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

BEI: 25 mg/l, acetone [in whole blood]. Sampling time: end of exposure or end of shift.

BEI: 25 mg/l, acetone [in urine]. Sampling time: end of exposure or end of shift.

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

SECTION 8: Exposure controls/personal protection

1-Ethoxy-2-propanol

[in urine]. Sampling time: end of exposure or end of shift.

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

BEI: See Section XII.2: Substances for which no BAT values are currently be derived, but documentaries in the "work Medico-toxicological justifications for BAT values, EKA and BLW", 1-ethoxy-2-propanol [in urine]. Sampling time: end of exposure or end of shift.

No exposure indices known.

acetone

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

BEI: 1380 µmol/l, acetone [in urine]. Sampling time: at the end of the shift.

BEI: 80 mg/l, acetone [in urine]. Sampling time: at the end of the shift.

Toluene

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

BEI: 1 mg/g creatinine, o-cresol [in urine]. Sampling time: at the end of the shift.

BEI: 1 µmol/mmol creatinine, o-cresol [in urine]. Sampling time: at the end of the shift.

Xylene

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

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.

Propan-2-ol

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

BEI: 430 µmol/l, acetone [in urine]. Sampling time: at the end of the shift.

BEI: 25 mg/l, acetone [in urine]. Sampling time: at the end of the shift.

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.

acetone

NAOSH BGVs (Ireland, 1/2011)

BMGV: 50 mg/l, acetone [in urine]. Sampling time: end of shift - As soon as possible after exposure ceases.

Toluene

NAOSH BGVs (Ireland, 1/2011)

BMGV: 0.3 mg/g creatinine, o-cresol [in urine]. Sampling time: end of shift - As soon as possible after exposure ceases.

BMGV: 0.03 mg/l, toluene [in urine]. Sampling time: end of shift - As soon as possible after exposure ceases.

BMGV: 0.02 mg/l, toluene [in blood]. Sampling time: prior to last shift of workweek.

Xylene

NAOSH BGVs (Ireland, 1/2011) [Xylene]

BMGV: 1.5 g/g creatinine, methylhippuric acids [in urine].

Sampling time: end of shift - As soon as possible after exposure ceases.

Propan-2-ol

NAOSH BGVs (Ireland, 1/2011)

BMGV: 40 mg/l, acetone [in urine]. Sampling time: end of shift at end of workweek.

Ethylbenzene

NAOSH BGVs (Ireland, 1/2011)

SECTION 8: Exposure controls/personal protection

	<p>BMGV: Semi-quantitative, the biological analyte is an indicator of exposure to the substance but the quantitative interpretation of the measurement is ambiguous. These analytes should be used as a screening test if a quantitative test is not practical; or as a confirmatory test if the quantitative test is not specific and the origin of the determinant is in question., ethylbenzene [in endexhaled air]. Sampling time: not critical.</p> <p>BMGV: 0.7 g/g creatinine [Semi-quantitative, the biological analyte is an indicator of exposure to the substance but the quantitative interpretation of the measurement is ambiguous. These analytes should be used as a screening test if a quantitative test is not practical; or as a confirmatory test if the quantitative test is not specific and the origin of the determinant is in question.], mandelic acid and phenylglyoxylic acid [in urine]. Sampling time: end of shift at end of workweek.</p>
No exposure indices known.	
acetone	<p>Minister Cabinet Regulations No.325 - BEI (Latvia, 3/2024) BEI: 80 mg/l, acetone [in urine]. Sampling time: at the end of the exposure or at the end of the shift.</p>
Toluene	<p>Minister Cabinet Regulations No.325 - BEI (Latvia, 3/2024) BEI: 600 µg/l, toluene [in blood]. Sampling time: at the end of the exposure. BEI: 75 µg/l, toluene [in urine]. Sampling time: end of the shift. BEI: 1.5 mg/l, o-cresol (after hydrolysis) [in urine]. Sampling time: at the end of the exposure or at the end of the shift.</p>
Xylene	<p>Minister Cabinet Regulations No.325 - BEI (Latvia, 3/2024) [ksiloli (visi izomēri)] BEI: 2000 mg/l, methylhippuric (toluric) acid (all isomers) [in urine]. Sampling time: at the end of the exposure or at the end of the shift.</p>
Propan-2-ol	<p>Minister Cabinet Regulations No.325 - BEI (Latvia, 3/2024) BEI: 25 mg/l, acetone [in urine]. Sampling time: at the end of the exposure or at the end of the shift. BEI: 25 mg/l, acetone [in blood]. Sampling time: at the end of the exposure or at the end of the shift.</p>
No exposure indices known.	
No exposure indices known.	
No exposure indices known.	
No exposure indices known.	
No exposure indices known.	
No exposure indices known.	
acetone	<p>Portuguese Institute of Quality (Portugal, 11/2014) BEI: 50 mg/l, acetone [in urine]. Sampling time: end of shift.</p>
Toluene	<p>Portuguese Institute of Quality (Portugal, 11/2014) BEI: 0.3 mg/g creatinine, o-cresol [in urine]. Sampling time: end of shift. BEI: 0.03 mg/l, toluene [in urine]. Sampling time: end of shift. BEI: 0.02 mg/l, toluene [in blood]. Sampling time: end of shift at the end of the workweek.</p>
Xylene	<p>Portuguese Institute of Quality (Portugal, 11/2014) [Xilenos (graus técnico e comercial)] BEI: 1.5 g/g creatinine, (o, m, p) -methyl-boronic acids [in urine]. Sampling time: end of shift.</p>
Propan-2-ol	<p>Portuguese Institute of Quality (Portugal, 11/2014) BEI: 40 mg/l, acetone [in urine]. Sampling time: end of shift at the</p>

SECTION 8: Exposure controls/personal protection

	end of the workweek.
Ethylbenzene	Portuguese Institute of Quality (Portugal, 11/2014) BEI: 0.7 g/g creatinine, sum of mandelic acid and phenylglyoxylic acid [in urine]. Sampling time: end of shift.
acetone	HG 1218/2006, Annex 2, with subsequent modifications and additions (Romania, 3/2024) OBLV: 50 mg/l, acetone [in urine]. Sampling time: end of shift.
Toluene	HG 1218/2006, Annex 2, with subsequent modifications and additions (Romania, 3/2024) OBLV: 3 mg/l, o-cresol [in urine]. Sampling time: end of shift. OBLV: 2 g/l, hippuric acid [in urine]. Sampling time: end of shift.
Xylene	HG 1218/2006, Annex 2, with subsequent modifications and additions (Romania, 3/2024) [xilen] OBLV: 3 g/l, methylhippuric acid [in urine]. Sampling time: end of shift.
Propan-2-ol	HG 1218/2006, Annex 2, with subsequent modifications and additions (Romania, 3/2024) OBLV: 50 mg/l, acetone [in urine]. Sampling time: end of shift.
Ethylbenzene	HG 1218/2006, Annex 2, with subsequent modifications and additions (Romania, 3/2024) OBLV: 1.5 g/g creatinine, mandelic acid [in urine]. Sampling time: end of the week.
acetone	Government regulation SR c. 355/2006 (Slovakia, 6/2024) BLV: 103.9 µmol/mmol creatinine, as acetone [in urine]. Sampling time: at the end of exposure or work shift. BLV: 53.36 mg/g creatinine, as acetone [in urine]. Sampling time: at the end of exposure or work shift. BLV: 1378 µmol/l, as acetone [in urine]. Sampling time: at the end of exposure or work shift. BLV: 80 mg/l, as acetone [in urine]. Sampling time: at the end of exposure or work shift.
Toluene	Government regulation SR c. 355/2006 (Slovakia, 6/2024) BLV: 1010 µmol/mmol creatinine, as hippuric acid [in urine]. Sampling time: at the end of exposure or work shift. BLV: 1.08 µmol/mmol creatinine, as o-cresol [in urine]. Sampling time: at the end of exposure or work shift; long-term exposure: after several work shifts. BLV: 1600 mg/g creatinine, as hippuric acid [in urine]. Sampling time: at the end of exposure or work shift. BLV: 1.03 mg/g creatinine, as o-cresol [in urine]. Sampling time: at the end of exposure or work shift; long-term exposure: after several work shifts. BLV: 13399 µmol/l, as hippuric acid [in urine]. Sampling time: at the end of exposure or work shift. BLV: 14.3 µmol/l, as o-cresol [in urine]. Sampling time: at the end of exposure or work shift; long-term exposure: after several work shifts. BLV: 6517 nmol/l, as toluene [in blood]. Sampling time: at the end of exposure or work shift. BLV: 2401 mg/l, as hippuric acid [in urine]. Sampling time: at the end of exposure or work shift. BLV: 1.5 mg/l, as o-cresol [in urine]. Sampling time: at the end of exposure or work shift; long-term exposure: after several work shifts. BLV: 600 µg/l, as toluene [in blood]. Sampling time: at the end of exposure or work shift.
Xylene	Government regulation SR c. 355/2006 (Slovakia, 6/2024)

SECTION 8: Exposure controls/personal protection

Ethylbenzene

[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.

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.

acetone

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

BAT: 80 mg/l, acetone [in urine]. Sampling time: at the end of the work shift.

Toluene

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

BAT: 1.5 mg/l, o-cresol (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.

BAT: 600 µg/l, toluene [in blood]. Sampling time: immediately after exposure.

BAT: 75 µg/l, toluene [in urine]. Sampling time: at the end of the work shift.

Xylene

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

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

Propan-2-ol

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

SECTION 8: Exposure controls/personal protection

	<p>BAT: 25 mg/l, acetone [in urine]. Sampling time: at the end of the work shift.</p> <p>BAT: 25 mg/l, acetone [in blood]. Sampling time: at the end of the work shift.</p>
Ethylbenzene	<p>Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 4/2024)</p> <p>BAT: 250 mg/g creatinine, mandelic acid and phenylglyoxylic acid [in urine]. Sampling time: at the end of the work shift.</p>
acetone	<p>National institute of occupational safety and health (Spain, 1/2024)</p> <p>VLB: 50 mg/l, acetone [in urine]. Sampling time: end of shift.</p>
Toluene	<p>National institute of occupational safety and health (Spain, 1/2024)</p> <p>VLB: 0.05 mg/l, toluene [in blood]. Sampling time: prior to last shift of workweek.</p> <p>VLB: 0.6 mg/g creatinine, o-cresol [in urine]. Sampling time: end of shift.</p> <p>VLB: 0.08 mg/l, toluene [in urine]. Sampling time: end of shift.</p>
Xylene	<p>National institute of occupational safety and health (Spain, 1/2024) [Xilenos]</p> <p>VLB: 1 g/g creatinine, methylhippuric acids [in urine]. Sampling time: end of shift.</p>
Propan-2-ol	<p>National institute of occupational safety and health (Spain, 1/2024)</p> <p>VLB: 40 mg/l, acetone [in urine]. Sampling time: end of workweek.</p>
Ethylbenzene	<p>National institute of occupational safety and health (Spain, 1/2024)</p> <p>VLB: 700 mg/g creatinine, sum of mandelic acid and acid and phenylglyoxylic acid [in urine]. Sampling time: end of workweek.</p>
No exposure indices known.	
acetone	<p>SUVA (Switzerland, 1/2025)</p> <p>BEI: 50 mg/l, acetone [in urine]. Sampling time: immediately after exposure or after working hours.</p> <p>BEI: 0.86 mmol/l, acetone [in urine]. Sampling time: immediately after exposure or after working hours.</p>
Toluene	<p>SUVA (Switzerland, 1/2025)</p> <p>BEI: 2 g/g creatinine, hippuric acid [in urine]. Sampling time: immediately after exposure or after working hours. In case of long-term exposure: after more than one shift.</p> <p>BEI: 1.26 mmol/mmol creatinine, hippuric acid [in urine]. Sampling time: immediately after exposure or after working hours. In case of long-term exposure: after more than one shift.</p> <p>BEI: 0.5 mg/l, o-cresol [in urine]. Sampling time: immediately after exposure or after working hours. In case of long-term exposure: after more than one shift.</p> <p>BEI: 4.62 µmol/l, o-cresol [in urine]. Sampling time: immediately after exposure or after working hours. In case of long-term exposure: after more than one shift.</p> <p>BEI: 600 µg/l, toluene [in blood]. Sampling time: immediately after exposure or after working hours.</p> <p>BEI: 6.48 µmol/l, toluene [in blood]. Sampling time: immediately after exposure or after working hours.</p> <p>BEI: 75 µg/l, toluene [in urine]. Sampling time: immediately after exposure or after working hours.</p>
Xylene	<p>SUVA (Switzerland, 1/2025) [Xylol (alle Isomere)]</p> <p>BEI: 2 g/l, methyl hippuric acid [in urine]. Sampling time:</p>

SECTION 8: Exposure controls/personal protection

Propan-2-ol	immediately after exposure or after working hours. SUVA (Switzerland, 1/2025) BEI: 0.4 mmol/l, acetone [in blood]. Sampling time: immediately after exposure or after working hours. BEI: 25 mg/l, acetone [in blood]. Sampling time: immediately after exposure or after working hours. BEI: 0.4 mmol/l, acetone [in urine]. Sampling time: immediately after exposure or after working hours. BEI: 25 mg/l, acetone [in urine]. Sampling time: immediately after exposure or after working hours.
Ethylbenzene	SUVA (Switzerland, 1/2025) BEI: 600 mg/g creatinine, mandelic acid + phenylglyoxylic acid [in urine]. Sampling time: immediately after exposure or after working hours.
Xylene	EH40/2005 BMGVs (United Kingdom (UK), 1/2020) [Xylene, o-, m-, p- or mixed isomers] BGV: 650 mmol/mol creatinine, methyl hippuric acid [in urine]. Sampling time: post shift.

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

Butyl acetate

Result

DNEL - General population - Long term - Oral

2 mg/kg bw/day

Effects: Systemic

DNEL - General population - Short term - Oral

2 mg/kg bw/day

Effects: Systemic

DNEL - General population - Long term - Dermal

3.4 mg/kg bw/day

Effects: Systemic

DNEL - General population - Short term - Dermal

6 mg/kg bw/day

Effects: Systemic

DNEL - Workers - Long term - Dermal

7 mg/kg bw/day

Effects: Systemic

DNEL - Workers - Short term - Dermal

11 mg/kg bw/day

Effects: Systemic

DNEL - General population - Long term - Inhalation

12 mg/m³

Effects: Systemic

DNEL - General population - Long term - Inhalation

35.7 mg/m³

Effects: Local

SECTION 8: Exposure controls/personal protection

DNEL - Workers - Long term - Inhalation

48 mg/m³

Effects: Systemic

DNEL - General population - Short term - Inhalation

300 mg/m³

Effects: Local

DNEL - General population - Short term - Inhalation

300 mg/m³

Effects: Systemic

DNEL - Workers - Long term - Inhalation

300 mg/m³

Effects: Local

DNEL - Workers - Short term - Inhalation

600 mg/m³

Effects: Local

DNEL - Workers - Short term - Inhalation

600 mg/m³

Effects: Systemic

acetone

DNEL - General population - Long term - Oral

62 mg/kg bw/day

Effects: Systemic

DNEL - General population - Long term - Dermal

62 mg/kg bw/day

Effects: Systemic

DNEL - Workers - Long term - Dermal

186 mg/kg bw/day

Effects: Systemic

DNEL - General population - Long term - Inhalation

200 mg/m³

Effects: Systemic

DNEL - Workers - Long term - Inhalation

1210 mg/m³

Effects: Systemic

DNEL - Workers - Short term - Inhalation

2420 mg/m³

Effects: Local

Toluene

DNEL - General population - Long term - Oral

8.13 mg/kg bw/day

Effects: Systemic

DNEL - General population - Long term - Inhalation

56.5 mg/m³

Effects: Local

DNEL - General population - Long term - Inhalation

56.5 mg/m³

Effects: Systemic

DNEL - Workers - Long term - Inhalation

192 mg/m³

Effects: Local

DNEL - Workers - Long term - Inhalation

192 mg/m³

SECTION 8: Exposure controls/personal protection

Effects: Systemic

DNEL - General population - Long term - Dermal

226 mg/kg bw/day

Effects: Systemic

DNEL - General population - Short term - Inhalation

226 mg/m³

Effects: Local

DNEL - General population - Short term - Inhalation

226 mg/m³

Effects: Systemic

DNEL - Workers - Long term - Dermal

384 mg/kg bw/day

Effects: Systemic

DNEL - Workers - Short term - Inhalation

384 mg/m³

Effects: Local

DNEL - Workers - Short term - Inhalation

384 mg/m³

Effects: Systemic

Xylene

DNEL - General population - Long term - Oral

5 mg/kg bw/day

Effects: Systemic

DNEL - General population - Long term - Inhalation

65.3 mg/m³

Effects: Local

DNEL - General population - Long term - Inhalation

65.3 mg/m³

Effects: Systemic

DNEL - General population - Long term - Dermal

125 mg/kg bw/day

Effects: Systemic

DNEL - Workers - Long term - Dermal

212 mg/kg bw/day

Effects: Systemic

DNEL - Workers - Long term - Inhalation

221 mg/m³

Effects: Local

DNEL - Workers - Long term - Inhalation

221 mg/m³

Effects: Systemic

DNEL - General population - Short term - Inhalation

260 mg/m³

Effects: Local

DNEL - General population - Short term - Inhalation

260 mg/m³

Effects: Systemic

DNEL - Workers - Short term - Inhalation

442 mg/m³

Effects: Local

SECTION 8: Exposure controls/personal protection

Ethyl acetate

DNEL - Workers - Short term - Inhalation

442 mg/m³

Effects: Systemic

DNEL - General population - Long term - Oral

4.5 mg/kg bw/day

Effects: Systemic

DNEL - General population - Long term - Dermal

37 mg/kg bw/day

Effects: Systemic

DNEL - Workers - Long term - Dermal

63 mg/kg bw/day

Effects: Systemic

DNEL - General population - Long term - Inhalation

367 mg/m³

Effects: Local

DNEL - General population - Long term - Inhalation

367 mg/m³

Effects: Systemic

DNEL - General population - Short term - Inhalation

734 mg/m³

Effects: Local

DNEL - General population - Short term - Inhalation

734 mg/m³

Effects: Systemic

DNEL - Workers - Long term - Inhalation

734 mg/m³

Effects: Local

DNEL - Workers - Long term - Inhalation

734 mg/m³

Effects: Systemic

DNEL - Workers - Short term - Inhalation

1468 mg/m³

Effects: Local

DNEL - Workers - Short term - Inhalation

1468 mg/m³

Effects: Systemic

iso-butanol

DNEL - General population - Long term - Inhalation

55 mg/m³

Effects: Local

DNEL - Workers - Long term - Inhalation

310 mg/m³

Effects: Local

Propan-2-ol

DNEL - Workers - Long term - Inhalation

500 mg/m³

Effects: Systemic

DNEL - Workers - Long term - Dermal

888 mg/kg bw/day

Effects: Systemic

DNEL - General population - Long term - Oral

26 mg/kg bw/day

SECTION 8: Exposure controls/personal protection

Effects: Systemic

DNEL - General population - Short term - Oral

51 mg/kg bw/day

Effects: Systemic

DNEL - General population - Long term - Inhalation

89 mg/m³

Effects: Systemic

DNEL - General population - Short term - Inhalation

178 mg/m³

Effects: Systemic

DNEL - General population - Long term - Dermal

319 mg/kg bw/day

Effects: Systemic

DNEL - Workers - Short term - Inhalation

1000 mg/m³

Effects: Systemic

DMEL - Workers - Long term - Inhalation

442 mg/m³

Effects: Local

DMEL - Workers - Short term - Inhalation

884 mg/m³

Effects: Systemic

DNEL - General population - Long term - Oral

1.6 mg/kg bw/day

Effects: Systemic

DNEL - General population - Long term - Inhalation

15 mg/m³

Effects: Systemic

DNEL - Workers - Long term - Inhalation

77 mg/m³

Effects: Systemic

DNEL - Workers - Long term - Dermal

180 mg/kg bw/day

Effects: Systemic

DNEL - Workers - Short term - Inhalation

293 mg/m³

Effects: Local

DNEL - General population - Long term - Oral

14 mg/kg bw/day

Effects: Systemic

DNEL - General population - Long term - Dermal

44.3 mg/kg bw/day

Effects: Systemic

DNEL - Workers - Long term - Dermal

74 mg/kg bw/day

Effects: Systemic

DNEL - Workers - Long term - Inhalation

106 mg/m³

Effects: Systemic

Ethylbenzene

1-Ethoxy-2-propanol

SECTION 8: Exposure controls/personal protection

DNEL - General population - Long term - Inhalation

127 mg/m³

Effects: Systemic

DNEL - General population - Short term - Inhalation

300 mg/m³

Effects: Systemic

DNEL - Workers - Short term - Inhalation

500 mg/m³

Effects: Systemic

titanium dioxide

DNEL - General population - Long term - Inhalation

28 µg/m³

Effects: Local

DNEL - Workers - Long term - Inhalation

170 µg/m³

Effects: Local

PNECs

Not available.

8.2 Exposure controls

Appropriate engineering controls

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

Individual protection measures

Hygiene measures

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

Eye/face protection

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

Skin protection

Hand protection

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

Recommendations : Wear suitable gloves tested to EN374.

< 1 hour (breakthrough time): Nitrile gloves. thickness > 0.3 mm

1 - 4 hours (breakthrough time): 4H / Silver Shield® gloves.

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.

SECTION 8: Exposure controls/personal protection

- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.
Filter type: A
Filter type (spray application): A P
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

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

9.1 Information on basic physical and chemical properties

Appearance

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

Ingredient name	°C	°F	Method
acetone	56.05	132.9	
Ethyl acetate	77.1	170.8	

- Flammability** : Not available.
- Lower and upper explosion limit** : Lower: 0.8% (xylene)
Upper: 13% (acetone)
- Flash point** : Closed cup: -19°C (-2.2°F)
- Auto-ignition temperature** :

Ingredient name	°C	°F	Method
Ethoxy-2-propanol	255	491	
n-Butyl acetate	415	779	EU A.15

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

Ingredient name	Vapour Pressure at 20°C			Vapour pressure at 50°C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
acetone	180.01463	24				
Ethyl acetate	81.59163	10.9				

- Relative density** : Not available.

SECTION 9: Physical and chemical properties

Density	: 0.9 g/cm ³
Vapour density	: Not available.
<u>Particle characteristics</u>	
Median particle size	: Not applicable.

9.2 Other information

9.2.1 Information with regard to physical hazard classes

Explosive properties	: Not available.
Oxidising properties	: Not available.

9.2.2 Other safety characteristics

Not applicable.

SECTION 10: Stability and reactivity

10.1 Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	: The product is stable.
10.3 Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	: Avoid all possible sources of ignition (spark or flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
10.5 Incompatible materials	: Reactive or incompatible with the following materials: oxidising materials
10.6 Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

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

Acute toxicity

Product/ingredient name

 Butyl acetate

Result

Rat - Oral - LD50
10760 mg/kg
EU

Rabbit - Dermal - LD50
14112 mg/kg

Rat - Inhalation - LC50 Vapour
0.74 mg/l [4 hours]

acetone

Rat - Oral - LD50
5800 mg/kg
Toxic effects: Behavioral - Altered sleep time (including change in righting reflex) Behavioral - Tremor

Toluene

Rat - Oral - LD50
636 mg/kg
Rat - Inhalation - LC50 Vapour
49 g/m³ [4 hours]

Xylene


Rat - Oral - LD50
4300 mg/kg
Toxic effects: Liver - Other changes Kidney, Ureter, and Bladder - Other changes

SECTION 11: Toxicological information

	Rat - Inhalation - LC50 Vapour 21.7 mg/l [4 hours]
Ethyl acetate	Rat - Oral - LD50 5620 mg/kg
iso-butanol	Rat - Oral - LD50 2460 mg/kg
	Rabbit - Dermal - LD50 3400 mg/kg
	Rat - Inhalation - LC50 Vapour 19200 mg/m ³ [4 hours]
Propan-2-ol	Rabbit - Dermal - LD50 12800 mg/kg
	Rat - Oral - LD50 5000 mg/kg <u>Toxic effects:</u> Behavioral - General anesthetic
Ethylbenzene	Rat - Oral - LD50 3500 mg/kg
	Rabbit - Dermal - LD50 15400 mg/kg
	Rat - Inhalation - LC50 Dusts and mists 29000 mg/l [4 hours]
1-Ethoxy-2-propanol	Rat - Oral - LD50 4400 mg/kg
	Rabbit - Dermal - LD50 8100 mg/kg

Conclusion/Summary [Product] :  Not available.


Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
 OW COMBI 2315-15	N/A	12674.0	N/A	102.7	N/A
n-Butyl acetate	10760	14112	N/A	N/A	N/A
acetone	5800	N/A	N/A	N/A	N/A
Toluene	N/A	N/A	N/A	49	N/A
Xylene	4300	1100	N/A	11	N/A
Ethyl acetate	5620	N/A	N/A	N/A	N/A
iso-butanol	2460	3400	N/A	N/A	N/A
Propan-2-ol	5000	12800	N/A	N/A	N/A
Ethylbenzene	3500	15400	N/A	11	29000
1-Ethoxy-2-propanol	4400	8100	N/A	N/A	N/A

Skin corrosion/irritation

Product/ingredient name	Result
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SECTION 11: Toxicological information

 n-Butyl acetate

Rabbit - Skin - Moderate irritant

Duration of treatment/exposure: 24 hours

Amount/concentration applied: 500 mg

acetone

Rabbit - Skin - Mild irritant

Duration of treatment/exposure: 24 hours

Amount/concentration applied: 500 mg

Rabbit - Skin - Mild irritant

Amount/concentration applied: 395 mg

Toluene

Pig - Skin - Mild irritant

Duration of treatment/exposure: 24 hours

Amount/concentration applied: 250 uL

Rabbit - Skin - Mild irritant

Amount/concentration applied: 435 mg

Rabbit - Skin - Moderate irritant

Duration of treatment/exposure: 24 hours

Amount/concentration applied: 20 mg

Rabbit - Skin - Moderate irritant

Amount/concentration applied: 500 mg

Xylene

Rat - Skin - Mild irritant

Duration of treatment/exposure: 8 hours

Amount/concentration applied: 60 uL

Rabbit - Skin - Moderate irritant

Duration of treatment/exposure: 24 hours

Amount/concentration applied: 500 mg

Rabbit - Skin - Moderate irritant

Amount/concentration applied: 100 %

Propan-2-ol

Rabbit - Skin - Mild irritant

Amount/concentration applied: 500 mg

Ethylbenzene

Rabbit - Skin - Mild irritant

Duration of treatment/exposure: 24 hours

Amount/concentration applied: 15 mg

titanium dioxide

Human - Skin - Mild irritant


Duration of treatment/exposure: 72 hours

Amount/concentration applied: 300 ug l

Conclusion/Summary [Product] : Not available.

Serious eye damage/eye irritation

Product/ingredient name

 n-Butyl acetate

Result

Rabbit - Eyes - Moderate irritant

Amount/concentration applied: 100 mg

acetone

Human - Eyes - Mild irritant

Amount/concentration applied: 186300 ppm

Rabbit - Eyes - Mild irritant

Amount/concentration applied: 10 uL

Rabbit - Eyes - Moderate irritant

Duration of treatment/exposure: 24 hours

Amount/concentration applied: 20 mg

Rabbit - Eyes - Severe irritant

Date of issue/Date of revision

: 25/07/2025

Date of previous issue

: 10/01/2024

Version : 2

48/62

OW COMBI 2315-15 - All variants

Label No :  05767

SECTION 11: Toxicological information

Toluene

Amount/concentration applied: 20 mg

Rabbit - Eyes - Mild irritant

Duration of treatment/exposure: 0.5 minutes

Amount/concentration applied: 100 mg

Rabbit - Eyes - Mild irritant

Amount/concentration applied: 870 ug

Rabbit - Eyes - Severe irritant

Duration of treatment/exposure: 24 hours

Amount/concentration applied: 2 mg

Rabbit - Eyes - Severe irritant

Amount/concentration applied: 0.1 MI

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

Propan-2-ol

Rabbit - Eyes - Moderate irritant

Duration of treatment/exposure: 24 hours

Amount/concentration applied: 100 mg

Rabbit - Eyes - Moderate irritant

Amount/concentration applied: 10 mg

Rabbit - Eyes - Severe irritant

Amount/concentration applied: 100 mg

Ethylbenzene

Rabbit - Eyes - Severe irritant

Amount/concentration applied: 500 mg

1-Ethoxy-2-propanol

Rabbit - Eyes - Moderate irritant

Duration of treatment/exposure: 24 hours

Amount/concentration applied: 100 mg

Conclusion/Summary [Product] : Not available.

Respiratory corrosion/irritation

Not available.

Conclusion/Summary [Product] : Not available.

Respiratory or skin sensitization

Not available.

Skin

Conclusion/Summary [Product] : Not available.

Respiratory

Conclusion/Summary [Product] : Not available.

Germ cell mutagenicity

Not available.

Conclusion/Summary [Product] :  Not available.

SECTION 11: Toxicological information

Carcinogenicity

It has been observed that the carcinogenic hazard of this product arises when respirable dust is inhaled in quantities leading to significant impairment of particle clearance mechanisms in the lung.

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

Butyl acetate
acetone
Toluene
Xylene
Ethyl acetate
iso-butanol

Propan-2-ol

1-Ethoxy-2-propanol

Result

STOT SE 3, H336 (Narcotic effects)
STOT SE 3, H336 (Narcotic effects)
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)
STOT SE 3, H336 (Narcotic effects)
STOT SE 3, H336 (Narcotic effects)
STOT SE 3, H336 (Narcotic effects)

Specific target organ toxicity (repeated exposure)

Product/ingredient name

Toluene
Xylene
Ethylbenzene

Result

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

Aspiration hazard

Product/ingredient name

Toluene
Xylene
Ethylbenzene

Result

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 damage.

Inhalation

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

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
watering
redness

Inhalation

: Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
reduced foetal weight
increase in foetal deaths

SECTION 11: Toxicological information

Skin contact	skeletal malformations
	: Adverse symptoms may include the following: pain or irritation redness blistering may occur reduced foetal weight increase in foetal deaths skeletal malformations
Ingestion	
	: Adverse symptoms may include the following: stomach pains reduced foetal weight increase in foetal deaths skeletal malformations

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

Short term exposure

Potential immediate effects	: Not available.
Potential delayed effects	: Not available.

Long term exposure

Potential immediate effects	: Not available.
Potential delayed effects	: Not available.

Potential chronic health effects

Not available.

Conclusion/Summary [Product]	: Not available.
General	: No known significant effects or critical hazards.
Carcinogenicity	: No known significant effects or critical hazards.
Mutagenicity	: No known significant effects or critical hazards.
Reproductive toxicity	: Suspected of damaging the unborn child.

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.
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11.2.2 Other information

Not available.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name

 Butyl acetate

Result

Acute - LC50 - Fresh water

Fish - Fathead minnow - *Pimephales promelas*
Age: 31 to 32 days; Size: 21.6 mm; Weight: 0.175 g
18000 µg/l [96 hours]
Effect: Mortality

Acute - LC50 - Marine water

Crustaceans - Brine shrimp - *Artemia salina*
32 mg/l [48 hours]
Effect: Mortality

acetone

Acute - LC50 - Fresh water

Daphnia - Water flea - *Daphnia magna*
10000 µg/l [48 hours]
Effect: Mortality

SECTION 12: Ecological information

Acute - LC50 - Fresh water

Fish - Guppy - *Poecilia reticulata*

Age: 4 to 12 months; Size: 2 to 10 cm

5600 ppm [96 hours]

Effect: Mortality

Chronic - NOEC - Marine water

Algae - Green algae - *Ulva pertusa*

4.95 mg/l [96 hours]

Effect: Reproduction

Acute - EC50 - Marine water

Algae - Green algae - *Ulva pertusa*

20.565 mg/l [96 hours]

Effect: Reproduction

Chronic - NOEC - Fresh water

Crustaceans - Daphnia - *Daphniidae*

0.016 ml/l [21 days]

Effect: Population

Chronic - NOEC - Marine water

Fish - Threespine stickleback - *Gasterosteus aculeatus* -

Larvae

Age: 7 days

5 µg/l [42 days]

Effect: Growth

Toluene

Acute - LC50 - Fresh water

Fish - Coho salmon, silver salmon - *Oncorhynchus kisutch* - Fry

Weight: 1 g

5500 µg/l [96 hours]

Effect: Mortality

Acute - EC50 - Fresh water

Algae - Green algae - *Pseudokirchneriella subcapitata*

12500 µg/l [72 hours]

Effect: Growth

Chronic - NOEC - Fresh water

Daphnia - Water flea - *Daphnia magna*

Age: ≤24 hours

1000 µg/l [21 days]

Effect: Reproduction

Acute - EC50 - Fresh water

Daphnia - Water flea - *Daphnia magna* - Neonate

Age: ≤24 hours

5.56 mg/l [48 hours]

Effect: Intoxication

Ethyl acetate

Acute - LC50 - Fresh water

Daphnia - Water flea - *Daphnia cucullata*

Age: 11 days

154000 µg/l [48 hours]

Effect: Mortality

Acute - LC50 - Fresh water

Fish - Indian catfish - *Heteropneustes fossilis*

Size: 14.16 cm; Weight: 25.54 g

212500 µg/l [96 hours]

Effect: Mortality

Acute - EC50 - Fresh water

Algae - Green algae - *Selenastrum* sp.

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2500000 µg/l [96 hours]

Chronic - NOEC - Fresh water

Daphnia - Water flea - *Daphnia magna*

12 mg/l [21 days]

Effect: Behavior

Chronic - NOEC - Fresh water

Fish - Fathead minnow - *Pimephales promelas* - Embryo

Age: <24 hours

75.6 mg/l [32 days]

Effect: Mortality

iso-butanol

Acute - LC50 - Fresh water

Fish - Rainbow trout,donaldson trout - *Oncorhynchus mykiss*

Weight: 1.67 g

1330000 µg/l [96 hours]

Effect: Mortality

Acute - LC50 - Marine water

Crustaceans - Brine shrimp - *Artemia salina*

600 mg/l [48 hours]

Effect: Mortality

Propan-2-ol

Acute - LC50 - Marine water

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

1400000 µg/l [48 hours]

Effect: Mortality

Acute - LC50 - Fresh water

Fish - Harlequinfish, red rasbora - *Rasbora heteromorpha*

Size: 1 to 3 cm

4200000 µg/l [96 hours]

Effect: Mortality

titanium dioxide

Acute - LC50 - Marine water

Fish - Mummichog - *Fundulus heteroclitus*

>1000000 µg/l [96 hours]

Effect: Mortality

Acute - LC50 - Fresh water

Crustaceans - Water flea - *Ceriodaphnia dubia* - Neonate

Age: <24 hours

3 mg/l [48 hours]

Effect: Mortality

Conclusion/Summary [Product] : Not available.

12.2 Persistence and degradability

Product/ingredient name

iso-butanol

Result

74% [28 days] - Readily

Conclusion/Summary [Product] : Not available.

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

12.3 Bioaccumulative potential

SECTION 12: Ecological information

Product/ingredient name	LogP _{ow}	BCF	Potential
✓ Butyl acetate	2.3	-	Low
acetone	-0.23	-	Low
Toluene	2.73	90	Low
Xylene	3.12	8.1 to 25.9	Low
Ethyl acetate	0.68	30	Low
iso-butanol	1	-	Low
Propan-2-ol	0.05	-	Low
Ethylbenzene	3.6	-	Low
1-Ethoxy-2-propanol	<1	-	Low

12.4 Mobility in soil

Soil/water partition coefficient

Product/ingredient name	logK _{oc}	K _{oc}
✓ Butyl acetate	1.5	33.2139
acetone	0.56	3.6548
Toluene	2.1	117.115
Ethyl acetate	1.3	18.1744
iso-butanol	1.1	12.0246
Propan-2-ol	0.54	3.4364
Ethylbenzene	2.2	170.406
1-Ethoxy-2-propanol	1.2	14.7877

Results of PMT and vPvM assessment

Product/ingredient name	PMT	P	M	T	vPvM	vP	vM
✓ Butyl acetate	No	No	No	No	No	No	No
acetone	No	No	No	No	No	No	No
Toluene	No	No	No	No	No	No	No
Xylene	No	No	No	No	No	No	No
Ethyl acetate	No	No	No	No	No	No	No
iso-butanol	No	No	No	No	No	No	No
Propan-2-ol	No	No	No	No	No	No	No
Ethylbenzene	No	No	No	No	No	No	No
1-Ethoxy-2-propanol	No	No	No	No	No	No	No
titanium dioxide	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
✓ Butyl acetate	No	N/A	N/A	No	N/A	N/A	N/A
acetone	N/A	N/A	N/A	Yes	N/A	N/A	N/A
Toluene	No	N/A	No	Yes	No	N/A	No
Xylene	No	N/A	No	Yes	No	N/A	No
Ethyl acetate	No	N/A	No	No	No	N/A	No
iso-butanol	No	N/A	N/A	No	N/A	N/A	N/A
Propan-2-ol	No	N/A	N/A	No	N/A	N/A	N/A
Ethylbenzene	N/A	N/A	N/A	Yes	N/A	N/A	N/A
1-Ethoxy-2-propanol	No	N/A	N/A	No	N/A	N/A	N/A
titanium dioxide	No	No	No	No	No	No	No

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

SECTION 12: Ecological information

Product/ingredient name	PBT	P	B	T	vPvB	vP	vB
n-Butyl acetate	No	No	No	No	No	No	No
acetone	No	No	No	No	No	No	No
Toluene	No	No	No	No	No	No	No
Xylene	No	No	No	No	No	No	No
Ethyl acetate	No	No	No	No	No	No	No
iso-butanol	No	No	No	No	No	No	No
Propan-2-ol	No	No	No	No	No	No	No
Ethylbenzene	No	No	No	No	No	No	No
1-Ethoxy-2-propanol	No	No	No	No	No	No	No
titanium dioxide	No	No	No	No	No	No	No

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

12.6 Endocrine disrupting properties

Not available.

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

12.7 Other adverse effects

No known significant effects or critical hazards.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

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

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

European waste catalogue (EWC) : 08.01.11





Packaging

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

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

SECTION 14: Transport information

SECTION 14: Transport information

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

Additional information

ADR/RID

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

ADN

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

IATA

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

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

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

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

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

Product/ingredient name	%	Designation [Usage]
OW COMBI 2315-15 Toluene	≥90 <10	3 48

Labelling :

Other EU regulations

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

SECTION 15: Regulatory information

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

Explosive precursors : This product is regulated by Regulation (EU) 2019/1148. All suspicious transactions, and significant disappearances and thefts should be reported to the relevant national contact point.

Ozone depleting substances (EU 2024/590)

Not listed.

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

Not listed.

Persistent Organic Pollutants

Not listed.

Seveso Directive

This product is controlled under the Seveso Directive.

Danger criteria

Category

P₅c

National regulations

Austria

VbF class : Category 2

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

Belgium

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

Ingredient name	Status
Silice	Listed

Czech Republic

Storage code : I

Denmark

Fire class : F+1

Executive Order No. 1795/2015

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

MAL-code : 4-3

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

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

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

SECTION 15: Regulatory information

MAL-code: 4-3

Application: When spraying in new* booths if the operator is outside 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 and eye protection 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.

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

During downtimes, cleaning and repair in closed facilities, spray booths or cabins, if there is a risk of contact with wet paint or organic solvents.

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

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

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

During 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.

- Air-supplied full mask must be worn.

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

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

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

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

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

*See Regulations.

Low-boiling liquids	:	This product contains low-boiling point liquids. Any respiratory protective equipment should be air-fed.
Restrictions on use	:	Not to be used by professional users below 18 years of age. See the National Working Environment Authorities Executive Order regarding Young People At Work.
List of undesirable substances	:	Listed
Carcinogenic waste	:	Waste containers must be labeled: Contains a substance or substances regulated by Danish working environment legislation on cancer risks.

Finland

France

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

:	■ Butyl acetate	RG 84
	acetone	RG 84
	Toluene	RG 4bis, RG 84
	Xylene	RG 4bis, RG 84
	Ethyl acetate	RG 84
	iso-butanol	RG 84
	Propan-2-ol	RG 84

SECTION 15: Regulatory information

Ethylbenzene

RG 84

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

Germany

Storage class (TRGS 510) : 3

Hazardous incident ordinance

This product is controlled under the Germany Hazardous Incident Ordinance.

Danger criteria

Category	Reference number
P5c	1.2.5.3

Hazard class for water : 3

Technical instruction on air quality control (TA Luft)

Number [Class]	Description	%
5.2.1	Total dust	23.9
5.2.5	Organic substances	76
5.2.5 [I]	Organic substances	73.7

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
tolueen	-	-	-	Development 2	-
xyleen	-	-	-	Development 2	-

Water Discharge Policy (ABM) : A(1) Highly toxic for aquatic organisms, may have long-term hazardous effects in aquatic environment. Decontamination effort: A

Norway

Sweden

Flammable liquid class (SRVFS 2005:10) : 1

Switzerland

VOC content : VOC (w/w): 73.6%

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

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

SECTION 16: Other information

Indicates information that has changed from previously issued version.

Abbreviations and acronyms

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

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

Classification	Justification
Flam. Liq. 2, H225 Skin Irrit. 2, H315 Eye Dam. 1, H318 Repr. 2, H361d STOT SE 3, H336	On basis of test data Calculation method Calculation method Calculation method Calculation method

Full text of abbreviated H statements

H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H351	Suspected of causing cancer.
H361d	Suspected of damaging the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.
EUH066	Repeated exposure may cause skin dryness or cracking.

Full text of classifications [CLP/GHS]

Acute Tox. 4	ACUTE TOXICITY - Category 4
Asp. Tox. 1	ASPIRATION HAZARD - Category 1
Carc. 2	CARCINOGENICITY - Category 2
Eye Dam. 1	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
Eye Irrit. 2	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
Flam. Liq. 2	FLAMMABLE LIQUIDS - Category 2
Flam. Liq. 3	FLAMMABLE LIQUIDS - Category 3
Repr. 2	REPRODUCTIVE TOXICITY - Category 2
Skin Irrit. 2	SKIN CORROSION/IRRITATION - Category 2
STOT RE 2	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2
STOT SE 3	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 3

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Version : 2

OW COMBI 2315-15

All variants

Notice to reader

SECTION 16: Other information

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.

