

SAFETY DATA SHEET



TEKNOLAC COMBI 2280-02 - All variants

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

1.1 Product identifier

Product name : TEKNOLAC COMBI 2280-02 - 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. 3, H226

Skin Irrit. 2, H315

Eye Irrit. 2, H319

STOT RE 2, H373

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

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

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

2.2 Label elements

Hazard pictograms :



Signal word : Warning

Hazard statements :

H226 - Flammable liquid and vapour.

H315 - Causes skin irritation.

H319 - Causes serious eye irritation.

H373 - May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

Prevention :

P280 - Wear protective gloves. Wear eye or face protection.

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P260 - Do not breathe vapour.

P264 - Wash thoroughly after handling.

Response :

P314 - Get medical advice/attention if you feel unwell.

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1/28

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Label No : 76751

SECTION 2: Hazards identification


Storage	: Not applicable.
Disposal	: P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
Hazardous ingredients	: Contains: Xylene
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
 Xylene	REACH #: 01-2119488216-32 EC: 215-535-7 CAS: 1330-20-7 Index: 601-022-00-9	≥10 - <20	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]
titanium dioxide	REACH #: 01-2119489379-17 EC: 236-675-5 CAS: 13463-67-7	≥10 - ≤25	Carc. 2, H351 (inhalation)	-	[1] [*]
Ethylbenzene	REACH #: 01-2119489370-35 EC: 202-849-4 CAS: 100-41-4 Index: 601-023-00-4	≤5	Flam. Liq. 2, H225 Acute Tox. 4, H332 STOT RE 2, H373 (hearing organs) (oral, inhalation) Asp. Tox. 1, H304 See Section 16 for the full text of the H statements declared above.	ATE [Inhalation (vapours)] = 11 mg/ l	[1] [2]

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.

SECTION 3: Composition/information on ingredients

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

SECTION 4: First aid measures

4.1 Description of first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention following exposure or if feeling unwell. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention following exposure or if feeling unwell. 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. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

4.2 Most important symptoms and effects, both acute and delayed

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
- Ingestion** : No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

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

SECTION 5: Firefighting measures

5.1 Extinguishing media

- Suitable extinguishing media** : Use dry chemical, 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** : 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.

SECTION 5: Firefighting measures

Hazardous combustion products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
sulfur oxides
phosphorus 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. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

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

6.2 Environmental precautions

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

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. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry 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. 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. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product.

6.4 Reference to other sections

: See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not breathe vapour or mist. Do not ingest. Avoid contact with eyes, skin and clothing. 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. Risk of self-ignition of used cleaning rags, paper wipes etc. Contaminated materials should be soaked in water and placed in a closed metal container before disposal.
- 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. 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.

Seveso Directive - Reporting thresholds

Danger criteria

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

7.3 Specific end use(s)

- Recommendations** : Not available.
- Industrial sector specific solutions** : Not available.

SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
Xylene	Regulation on Limit Values - MAC (Austria, 4/2021). [Xylenes (all isomers)] PEAK: 442 mg/m ³ , 4 times per shift, 15 minutes. TWA: 50 ppm 8 hours. PEAK: 100 ppm, 4 times per shift, 15 minutes. TWA: 221 mg/m ³ 8 hours.
Ethylbenzene	Regulation on Limit Values - MAC (Austria, 4/2021). Absorbed through skin. TWA: 100 ppm 8 hours. TWA: 440 mg/m ³ 8 hours. CEIL: 200 ppm, 8 times per shift, 5 minutes.

SECTION 8: Exposure controls/personal protection

Xylene	CEIL: 880 mg/m ³ , 8 times per shift, 5 minutes. Limit values (Belgium, 5/2021). [Xylene] Absorbed through skin. TWA: 50 ppm 8 hours. TWA: 221 mg/m ³ 8 hours. STEL: 100 ppm 15 minutes. STEL: 442 mg/m ³ 15 minutes.
Ethylbenzene	Limit values (Belgium, 5/2021). Absorbed through skin. TWA: 20 ppm 8 hours. TWA: 87 mg/m ³ 8 hours. STEL: 125 ppm 15 minutes. STEL: 551 mg/m ³ 15 minutes.
Xylene	Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 13/2003. (Bulgaria, 6/2021). [Xylene (mixture of isomers), pure] Absorbed through skin. Limit value 8 hours: 221 mg/m ³ 8 hours. Limit value 15 min: 442 mg/m ³ 15 minutes. Limit value 15 min: 100 ppm 15 minutes. Limit value 8 hours: 50 ppm 8 hours.
Ethylbenzene	Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 13/2003. (Bulgaria, 6/2021). Absorbed through skin. Limit value 8 hours: 435 mg/m ³ 8 hours. Limit value 15 min: 545 mg/m ³ 15 minutes.
Distillates (petroleum), solvent-dewaxed light paraffinic	Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 13/2003. (Bulgaria, 6/2021). [Oils – mineral, petroleum] Limit value 8 hours: 5 mg/m ³ 8 hours.
Xylene	Ministry of Economy, Labour and Entrepreneurship ELV/STELV (Croatia, 1/2021). [xylene (all isomers)] Absorbed through skin. STELV: 442 mg/m ³ 15 minutes. STELV: 100 ppm 15 minutes. ELV: 221 mg/m ³ 8 hours. ELV: 50 ppm 8 hours.
Ethylbenzene	Ministry of Economy, Labour and Entrepreneurship ELV/STELV (Croatia, 1/2021). Absorbed through skin. STELV: 884 mg/m ³ 15 minutes. STELV: 200 ppm 15 minutes. ELV: 442 mg/m ³ 8 hours. ELV: 100 ppm 8 hours.
Xylene	Department of labour inspection (Cyprus, 7/2021). [Xylene, mixed isomers] Absorbed through skin. STEL: 100 ppm 15 minutes. STEL: 442 mg/m ³ 15 minutes. TWA: 50 ppm 8 hours. TWA: 221 mg/m ³ 8 hours.
Ethylbenzene	Department of labour inspection (Cyprus, 7/2021). Absorbed through skin. STEL: 884 mg/m ³ 15 minutes. TWA: 100 ppm 8 hours. TWA: 442 mg/m ³ 8 hours. STEL: 200 ppm 15 minutes.
Xylene	Government regulation of Czech Republic PEL/NPK-P (Czech Republic, 10/2022). [xylene, technical mixture of isomers and all isomers] Absorbed through skin. TWA: 200 mg/m ³ 8 hours. TWA: 45.4 ppm 8 hours. STEL: 400 mg/m ³ 15 minutes. STEL: 90.8 ppm 15 minutes.
Ethylbenzene	Government regulation of Czech Republic PEL/NPK-P (Czech Republic, 10/2022). Absorbed through skin. TWA: 200 mg/m ³ 8 hours.

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Distillates (petroleum), solvent-dewaxed light paraffinic	TWA: 45.4 ppm 8 hours. STEL: 500 mg/m ³ 15 minutes. STEL: 113.5 ppm 15 minutes. Government regulation of Czech Republic PEL/NPK-P (Czech Republic, 10/2022). [Mineral oils (aerosol)] TWA: 5 mg/m ³ 8 hours. Form: Aerosol STEL: 10 mg/m ³ 15 minutes. Form: Aerosol
Xylene	Working Environment Authority (Denmark, 6/2022). [Xylenes, all isomers] Absorbed through skin. TWA: 25 ppm 8 hours. TWA: 109 mg/m ³ 8 hours. STEL: 442 mg/m ³ 15 minutes. STEL: 100 ppm 15 minutes.
Ethylbenzene	Working Environment Authority (Denmark, 6/2022). Absorbed through skin. Carcinogen. TWA: 50 ppm 8 hours. TWA: 217 mg/m ³ 8 hours. STEL: 434 mg/m ³ 15 minutes. STEL: 100 ppm 15 minutes.
Distillates (petroleum), solvent-dewaxed light paraffinic	Working Environment Authority (Denmark, 6/2022). [oil mist, mineral oil particles] TWA: 1 mg/m ³ 8 hours. Form: mist and particles STEL: 2 mg/m ³ 15 minutes. Form: mist and particles
Xylene	Occupational exposure limits, Regulation No. 293 (Estonia, 12/2022). [Xylenes] Absorbed through skin. TWA: 50 ppm 8 hours. STEL: 100 ppm 15 minutes. STEL: 450 mg/m ³ 15 minutes. TWA: 200 mg/m ³ 8 hours.
Ethylbenzene	Occupational exposure limits, Regulation No. 293 (Estonia, 12/2022). Absorbed through skin. Skin sensitizer. TWA: 442 mg/m ³ 8 hours. TWA: 100 ppm 8 hours. STEL: 884 mg/m ³ 15 minutes. STEL: 200 ppm 15 minutes.
Xylene	EU OEL (Europe, 1/2022). [xylene, mixed isomers pure] Absorbed through skin. Notes: list of indicative occupational exposure limit values TWA: 50 ppm 8 hours. TWA: 221 mg/m ³ 8 hours. STEL: 100 ppm 15 minutes. STEL: 442 mg/m ³ 15 minutes.
Ethylbenzene	EU OEL (Europe, 1/2022). Absorbed through skin. Notes: list of indicative occupational exposure limit values TWA: 100 ppm 8 hours. TWA: 442 mg/m ³ 8 hours. STEL: 200 ppm 15 minutes. STEL: 884 mg/m ³ 15 minutes.
Xylene	Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021). [Xylenes] Absorbed through skin. STEL: 440 mg/m ³ 15 minutes. TWA: 220 mg/m ³ 8 hours. TWA: 50 ppm 8 hours. STEL: 100 ppm 15 minutes.
Ethylbenzene	Institute of Occupational Health, Ministry of Social Affairs (Finland, 10/2021). Absorbed through skin. TWA: 50 ppm 8 hours. TWA: 220 mg/m ³ 8 hours. STEL: 200 ppm 15 minutes. STEL: 880 mg/m ³ 15 minutes.

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Xylene	Ministry of Labor (France, 10/2022). [xylenes, mixed isomers, pure] Absorbed through skin. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code) STEL: 442 mg/m ³ 15 minutes. STEL: 100 ppm 15 minutes. TWA: 221 mg/m ³ 8 hours. TWA: 50 ppm 8 hours.
Ethylbenzene	Ministry of Labor (France, 10/2022). Absorbed through skin. Notes: Binding regulatory limit values (article R. 4412-149 of the Labor Code) TWA: 20 ppm 8 hours. TWA: 88.4 mg/m ³ 8 hours. STEL: 442 mg/m ³ 15 minutes. STEL: 100 ppm 15 minutes.
Xylene	TRGS 900 OEL (Germany, 6/2022). [xylene] Absorbed through skin. TWA: 220 mg/m ³ 8 hours. PEAK: 440 mg/m ³ 15 minutes. TWA: 50 ppm 8 hours. PEAK: 100 ppm 15 minutes. DFG MAC-values list (Germany, 7/2022). [Xylene (all isomers)] Absorbed through skin. TWA: 50 ppm 8 hours. PEAK: 100 ppm, 4 times per shift, 15 minutes. TWA: 220 mg/m ³ 8 hours. PEAK: 440 mg/m ³ , 4 times per shift, 15 minutes.
Ethylbenzene	TRGS 900 OEL (Germany, 6/2022). Absorbed through skin. TWA: 88 mg/m ³ 8 hours. PEAK: 176 mg/m ³ 15 minutes. TWA: 20 ppm 8 hours. PEAK: 40 ppm 15 minutes. DFG MAC-values list (Germany, 7/2022). Absorbed through skin. PEAK: 40 ppm, 4 times per shift, 15 minutes. PEAK: 176 mg/m ³ , 4 times per shift, 15 minutes. TWA: 88 mg/m ³ 8 hours. TWA: 20 ppm 8 hours.
Xylene	Presidential Decree 307/1986: Occupational exposure limit values (Greece, 9/2021). [Xylenes (all isomers)] Absorbed through skin. TWA: 100 ppm 8 hours. TWA: 435 mg/m ³ 8 hours. STEL: 150 ppm 15 minutes. STEL: 650 mg/m ³ 15 minutes.
Ethylbenzene	Presidential Decree 307/1986: Occupational exposure limit values (Greece, 9/2021). TWA: 100 ppm 8 hours. TWA: 435 mg/m ³ 8 hours. STEL: 125 ppm 15 minutes. STEL: 545 mg/m ³ 15 minutes.
Distillates (petroleum), solvent-dewaxed light paraffinic	Presidential Decree 307/1986: Occupational exposure limit values (Greece, 9/2021). [Mineral oils] Absorbed through skin. Presidential Decree 307/1986: Occupational exposure limit values (Greece, 9/2021). [Mineral oil] TWA: 5 mg/m ³ 8 hours. Form: mist
Xylene	5/2020. (II. 6.) ITM Decree (Hungary, 12/2022). [xylene, mixture of isomers] Absorbed through skin. TWA: 221 mg/m ³ 8 hours. PEAK: 442 mg/m ³ 15 minutes. PEAK: 100 ppm 15 minutes. TWA: 50 ppm 8 hours.
Ethylbenzene	5/2020. (II. 6.) ITM Decree (Hungary, 12/2022). Absorbed through skin. Skin sensitiser. Inhalation sensitiser.

SECTION 8: Exposure controls/personal protection

Xylene

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

Ministry of Welfare, List of Exposure Limits (Iceland, 5/2021). [xylene, all isomers] Absorbed through skin.

STEL: 442 mg/m³ 15 minutes.
STEL: 100 ppm 15 minutes.
TWA: 109 mg/m³ 8 hours.
TWA: 25 ppm 8 hours.

Ethylbenzene

Ministry of Welfare, List of Exposure Limits (Iceland, 5/2021). Absorbed through skin.

STEL: 884 mg/m³ 15 minutes.
STEL: 200 ppm 15 minutes.
TWA: 200 mg/m³ 8 hours.
TWA: 50 ppm 8 hours.

Distillates (petroleum), solvent-dewaxed light paraffinic

Ministry of Welfare, List of Exposure Limits (Iceland, 5/2021). [oil mist, mineral]

TWA: 1 mg/m³ 8 hours. Form: particulates

Xylene

NAOSH (Ireland, 5/2021). [xylene mixed isomers] Absorbed through skin. Notes: EU derived Occupational Exposure Limit Values

OELV-8hr: 50 ppm 8 hours.
OELV-8hr: 221 mg/m³ 8 hours.
OELV-15min: 100 ppm 15 minutes.
OELV-15min: 442 mg/m³ 15 minutes.

Ethylbenzene

NAOSH (Ireland, 5/2021). Absorbed through skin. Notes: EU derived Occupational Exposure Limit Values

OELV-8hr: 100 ppm 8 hours.
OELV-8hr: 442 mg/m³ 8 hours.
OELV-15min: 200 ppm 15 minutes.
OELV-15min: 884 mg/m³ 15 minutes.

Distillates (petroleum), solvent-dewaxed light paraffinic

NAOSH (Ireland, 5/2021). [Mineral oil, pure, highly & severely refined] Notes: Advisory Occupational Exposure Limit Values (OELVs)

OELV-8hr: 5 ppm 8 hours. Form: inhalable dust

Xylene

Legislative Decree No. 819/2008. Title IX. Protection from chemical agents, carcinogens and mutagens (Italy, 6/2020). [Xylenes, mixed isomers, pure] Absorbed through skin.

8 hours: 50 ppm 8 hours.
8 hours: 221 mg/m³ 8 hours.
Short Term: 100 ppm 15 minutes.
Short Term: 442 mg/m³ 15 minutes.

Ethylbenzene

Legislative Decree No. 819/2008. Title IX. Protection from chemical agents, carcinogens and mutagens (Italy, 6/2020). Absorbed through skin.

8 hours: 100 ppm 8 hours.
8 hours: 442 mg/m³ 8 hours.
Short Term: 200 ppm 15 minutes.
Short Term: 884 mg/m³ 15 minutes.

Xylene

Ministers Cabinet Regulations Nr.325 - AER (Latvia, 2/2021). [Xylenes] Absorbed through skin.

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

Ethylbenzene

Ministers Cabinet Regulations Nr.325 - AER (Latvia, 2/2021). Absorbed through skin.

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

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Xylene	Lithuanian Hygiene Standard HN 23 (Lithuania, 7/2022). [xylene, mixed isomers, pure] Absorbed through skin. STEL: 442 mg/m ³ 15 minutes. TWA: 50 ppm 8 hours. STEL: 100 ppm 15 minutes. TWA: 221 mg/m ³ 8 hours.
Ethylbenzene	Lithuanian Hygiene Standard HN 23 (Lithuania, 7/2022). Absorbed through skin. TWA: 442 mg/m ³ 8 hours. TWA: 100 ppm 8 hours. STEL: 884 mg/m ³ 15 minutes. STEL: 200 ppm 15 minutes.
Distillates (petroleum), solvent-dewaxed light paraffinic	Lithuanian Hygiene Standard HN 23 (Lithuania, 7/2022). [oil mist and fume] TWA: 1 mg/m ³ 8 hours. Form: Mist STEL: 3 mg/m ³ 15 minutes. Form: Mist
Xylene	Grand-Duchy Regulation 2016. Chemical agents. Annex I (Luxembourg, 3/2021). [xylenes, mixed isomers, pure] Absorbed through skin. TWA: 50 ppm 8 hours. TWA: 221 mg/m ³ 8 hours. STEL: 100 ppm 15 minutes. STEL: 442 mg/m ³ 15 minutes.
Ethylbenzene	Grand-Duchy Regulation 2016. Chemical agents. Annex I (Luxembourg, 3/2021). Absorbed through skin. TWA: 100 ppm 8 hours. TWA: 442 mg/m ³ 8 hours. STEL: 200 ppm 15 minutes. STEL: 884 mg/m ³ 15 minutes.
Xylene	EU OEL (Europe, 1/2022). [xylene, mixed isomers pure] Absorbed through skin. Notes: list of indicative occupational exposure limit values TWA: 50 ppm 8 hours. TWA: 221 mg/m ³ 8 hours. STEL: 100 ppm 15 minutes. STEL: 442 mg/m ³ 15 minutes.
Ethylbenzene	EU OEL (Europe, 1/2022). Absorbed through skin. Notes: list of indicative occupational exposure limit values TWA: 100 ppm 8 hours. TWA: 442 mg/m ³ 8 hours. STEL: 200 ppm 15 minutes. STEL: 884 mg/m ³ 15 minutes.
Distillates (petroleum), solvent-dewaxed light paraffinic	Ministry of Health (Malta, 1/2021). [mineral oils that have been used before in internal combustion engines to lubricate and cool the moving parts within the engine] Absorbed through skin.
Xylene	Ministry of Social Affairs and Employment, Legal limit values (Netherlands, 12/2022). [xylenes (all isomers)] Absorbed through skin. OEL, 8-h TWA: 210 mg/m ³ 8 hours. STEL, 15-min: 442 mg/m ³ 15 minutes. STEL, 15-min: 100 ppm 15 minutes. OEL, 8-h TWA: 47.5 ppm 8 hours.
Ethylbenzene	Ministry of Social Affairs and Employment, Legal limit values (Netherlands, 12/2022). Absorbed through skin. OEL, 8-h TWA: 215 mg/m ³ 8 hours. STEL, 15-min: 430 mg/m ³ 15 minutes. STEL, 15-min: 97.3 ppm 15 minutes. OEL, 8-h TWA: 48.6 ppm 8 hours.

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Xylene	FOR-2011-12-06-1358 (Norway, 12/2022). [Xylene, all isomers] Absorbed through skin. Notes: indicative limit value TWA: 25 ppm 8 hours. TWA: 108 mg/m ³ 8 hours.
Ethylbenzene	FOR-2011-12-06-1358 (Norway, 12/2022). Absorbed through skin. Carcinogen. Notes: indicative limit value TWA: 5 ppm 8 hours. TWA: 20 mg/m ³ 8 hours.
Distillates (petroleum), solvent-dewaxed light paraffinic	FOR-2011-12-06-1358 (Norway, 12/2022). [Oil mist (mineral oil particles)] TWA: 1 mg/m ³ 8 hours. Form: mineral oil particles FOR-2011-12-06-1358 (Norway, 12/2022). [Oil vapor] TWA: 50 mg/m ³ 8 hours. Form: Vapour
Xylene	Regulation of the Minister of Family, Labor and Social Policy of 18 February 2021, regarding the highest permissible concentrations and values of agents harmful to health in the work environment (Journal of Laws 2021, item 325) (Poland, 2/2021). [xylene – mixed isomers (1,2-, 1,3-, 1,4-)] Absorbed through skin. TWA: 100 mg/m ³ 8 hours. STEL: 200 mg/m ³ 15 minutes.
Ethylbenzene	Regulation of the Minister of Family, Labor and Social Policy of 18 February 2021, regarding the highest permissible concentrations and values of agents harmful to health in the work environment (Journal of Laws 2021, item 325) (Poland, 2/2021). Absorbed through skin. TWA: 200 mg/m ³ 8 hours. STEL: 400 mg/m ³ 15 minutes.
Xylene	Portuguese Institute of Quality (Portugal, 11/2014). [Xylene] TWA: 100 ppm 8 hours. STEL: 150 ppm 15 minutes.
Ethylbenzene	Portuguese Institute of Quality (Portugal, 11/2014). TWA: 20 ppm 8 hours.
Distillates (petroleum), solvent-dewaxed light paraffinic	Portuguese Institute of Quality (Portugal, 11/2014). [mineral oil, pure, high and heavily refined, excluding metal processing fluids] TWA: 5 mg/m ³ 8 hours. Form: Inhalable fraction
Xylene	HG 1218/2006, Annex 1, with subsequent modifications and additions (Romania, 3/2021). [Xylene] Absorbed through skin. VLA: 221 mg/m ³ 8 hours. VLA: 50 ppm 8 hours. Short term: 442 mg/m ³ 15 minutes. Short term: 100 ppm 15 minutes.
Ethylbenzene	HG 1218/2006, Annex 1, with subsequent modifications and additions (Romania, 3/2021). Absorbed through skin. VLA: 442 mg/m ³ 8 hours. VLA: 100 ppm 8 hours. Short term: 884 mg/m ³ 15 minutes. Short term: 200 ppm 15 minutes.
Distillates (petroleum), solvent-dewaxed light paraffinic	HG 1218/2006, Annex 1, with subsequent modifications and additions (Romania, 3/2021). [Mineral oil, other than mineral oils that have previously been used in internal combustion engines to lubricate and cool moving parts of the engine] VLA: 5 mg/m ³ 8 hours. Short term: 10 mg/m ³ 15 minutes.
Xylene	Government regulation SR c. 355/2006 (Slovakia, 9/2020). [xylene, mixed isomers] Absorbed through skin. TWA: 221 mg/m ³ , (xylene, mixed isomers) 8 hours. TWA: 50 ppm, (xylene, mixed isomers) 8 hours. STEL: 442 mg/m ³ , (xylene, mixed isomers) 15 minutes. STEL: 100 ppm, (xylene, mixed isomers) 15 minutes.
Ethylbenzene	Government regulation SR c. 355/2006 (Slovakia, 9/2020).

SECTION 8: Exposure controls/personal protection

Distillates (petroleum), solvent-dewaxed light paraffinic

Xylene

Ethylbenzene

Distillates (petroleum), solvent-dewaxed light paraffinic

Xylene

Ethylbenzene

Distillates (petroleum), solvent-dewaxed light paraffinic

Xylene

Ethylbenzene

Distillates (petroleum), solvent-dewaxed light paraffinic

Absorbed through skin.

TWA: 442 mg/m³ 8 hours.

TWA: 100 ppm 8 hours.

STEL: 884 mg/m³ 15 minutes.

STEL: 200 ppm 15 minutes.

Government regulation SR c. 355/2006 (Slovakia, 9/2020).

[Mineral oils]

TWA: 1 mg/m³, (Mineral oils) 8 hours. Form: liquid aerosol, fumes

TWA: 5 ppm, (Mineral oils) 8 hours. Form: liquid aerosol, fumes

STEL: 3 mg/m³, (Mineral oils) 15 minutes. Form: liquid aerosol, fumes

STEL: 15 ppm, (Mineral oils) 15 minutes. Form: liquid aerosol, fumes

Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 5/2021).

[xylene (mixture of isomers)] Absorbed through skin.

TWA: 221 mg/m³ 8 hours.

TWA: 50 ppm 8 hours.

KTV: 442 mg/m³, 4 times per shift, 15 minutes.

KTV: 100 ppm, 4 times per shift, 15 minutes.

Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 5/2021).

Absorbed through skin.

TWA: 442 mg/m³ 8 hours.

TWA: 100 ppm 8 hours.

KTV: 884 mg/m³, 4 times per shift, 15 minutes.

KTV: 200 ppm, 4 times per shift, 15 minutes.

Regulation on the protection of workers from the risks related to exposure to carcinogens or mutagens (Slovenia, 7/2022).

[mineral oils] Absorbed through skin.

National institute of occupational safety and health (Spain, 4/2022). [Xylene, mixture of isomers] Absorbed through skin.

TWA: 50 ppm 8 hours.

TWA: 221 mg/m³ 8 hours.

STEL: 100 ppm 15 minutes.

STEL: 442 mg/m³ 15 minutes.

National institute of occupational safety and health (Spain, 4/2022). Absorbed through skin.

TWA: 100 ppm 8 hours.

TWA: 441 mg/m³ 8 hours.

STEL: 200 ppm 15 minutes.

STEL: 884 mg/m³ 15 minutes.

National institute of occupational safety and health (Spain, 4/2022). [Refined mineral oil]

TWA: 5 mg/m³ 8 hours. Form: Mist

STEL: 10 mg/m³ 15 minutes. Form: Mist

Work environment authority Regulation 2018:1 (Sweden, 9/2021). [xylene] Absorbed through skin.

TWA: 50 ppm 8 hours.

TWA: 221 mg/m³ 8 hours.

STEL: 100 ppm 15 minutes.

STEL: 442 mg/m³ 15 minutes.

Work environment authority Regulation 2018:1 (Sweden, 9/2021). Absorbed through skin.

TWA: 50 ppm 8 hours.

TWA: 220 mg/m³ 8 hours.

STEL: 200 ppm 15 minutes.

STEL: 884 mg/m³ 15 minutes.

Work environment authority Regulation 2018:1 (Sweden, 9/2021). [old used mineral oil] Absorbed through skin.

Work environment authority Regulation 2018:1 (Sweden, 9/2021). [oil mist, incl. oil fumes]

TWA: 1 mg/m³ 8 hours. Form: mist and fume

SECTION 8: Exposure controls/personal protection

Xylene	STEL: 3 mg/m ³ 15 minutes. Form: mist and fume SUVA (Switzerland, 1/2023). [Xylenes (all isomers)] Absorbed through skin. TWA: 50 ppm 8 hours. TWA: 220 mg/m ³ 8 hours. STEL: 100 ppm 15 minutes. STEL: 440 mg/m ³ 15 minutes.
Ethylbenzene	SUVA (Switzerland, 1/2023). Absorbed through skin. TWA: 50 ppm 8 hours. TWA: 220 mg/m ³ 8 hours. STEL: 50 ppm 15 minutes. STEL: 220 mg/m ³ 15 minutes.
Xylene	EH40/2005 WELs (United Kingdom (UK), 1/2020). [xylene, o-,m-, p- or mixed isomers] Absorbed through skin. STEL: 441 mg/m ³ 15 minutes. TWA: 50 ppm 8 hours. TWA: 220 mg/m ³ 8 hours. STEL: 100 ppm 15 minutes.
Ethylbenzene	EH40/2005 WELs (United Kingdom (UK), 1/2020). Absorbed through skin. STEL: 552 mg/m ³ 15 minutes. STEL: 125 ppm 15 minutes. TWA: 100 ppm 8 hours. TWA: 441 mg/m ³ 8 hours.
Toluene	EH40/2005 WELs (United Kingdom (UK), 1/2020). Absorbed through skin. STEL: 384 mg/m ³ 15 minutes. TWA: 191 mg/m ³ 8 hours. TWA: 50 ppm 8 hours. STEL: 100 ppm 15 minutes.
manganese neodecanoate	EH40/2005 WELs (United Kingdom (UK), 1/2020). [manganese and its inorganic compounds inhalable fraction/respirable fraction, as Mn] TWA: 0.2 mg/m ³ , (as Mn) 8 hours. Form: Inhalable fraction TWA: 0.05 mg/m ³ , (as Mn) 8 hours. Form: Respirable fraction

Biological exposure indices

Product/ingredient name	Exposure indices
Xylene	VGU BEI (Austria, 9/2020) [xylenes] BEI Fitness: 1000 µg/l, xylene [in blood]. Sampling time: one year. BEI Fitness: 1.5 g/l, methylhippuric acid [in urine]. Sampling time: one year.
No exposure indices known.	
Ethylbenzene	Ministry of Labour and Social Policy and the Ministry of Health - Ordinance No 13/2003. (Bulgaria, 6/2021) Notes: significant skin resorption possible BLV: 2000 mg/g creatinine, mandelic acid and phenylglyoxylic acid – in total [in urine]. Sampling time: after the end of the exposure or the end of the work shift.
Xylene	Ministry of Economy, Labour and Entrepreneurship ILV/STEL (Croatia, 10/2018) [xylene] BEI: 1.5 mg/l, xylene [in blood]. Sampling time: at the end of the work shift. BEI: 14.13 µmol/l, xylene [in blood]. Sampling time: at the end of the work shift. BEI: 0.88 mol/mol creatinine, methylhippuric acid [in urine]. Sampling time: at the end of the work shift. BEI: 1.5 g/g creatinine, methylhippuric acid [in urine]. Sampling time: at the end of the work shift.
Ethylbenzene	Ministry of Economy, Labour and Entrepreneurship ILV/STEL (Croatia, 10/2018)

SECTION 8: Exposure controls/personal protection

No exposure indices known.

Xylene

BEI: 1.5 mg/l, ethylbenzene [in blood]. Sampling time: during exposure.
BEI: 14.1 µmol/l, ethylbenzene [in blood]. Sampling time: during exposure.
BEI: 1.12 mol/mol creatinine, almond acid [in urine]. Sampling time: at the end of the work shift and at the end of the working week.
BEI: 1.5 g/g creatinine, almond acid [in urine]. Sampling time: at the end of the work shift and at the end of the working week.

Government regulation of Czech Republic Limit Values of Biological Exposure Tests (Czech Republic, 9/2015) [Xylene]
Biological limit values: 820 µmol/mmol creatinine, methylhippuric acid [in urine]. Sampling time: end of the shift.
Biological limit values: 1400 mg/g creatinine, methylhippuric acid [in urine]. Sampling time: end of the shift.

Ethylbenzene

Government regulation of Czech Republic Limit Values of Biological Exposure Tests (Czech Republic, 9/2015)
Biological limit values: 1100 µmol/mmol creatinine, almond acid [in urine]. Sampling time: end of the shift.
Biological limit values: 1500 mg/g creatinine, almond acid [in urine]. Sampling time: end of the shift.

No exposure indices known.

No exposure indices known.

No exposure indices known.

Xylene

Institute of Occupational Health, Ministry of Social Affairs (Finland, 9/2020) [Xylene]
BEI: 5 mmol/l, methylhippuric acid [in urine]. Sampling time: at the end of the work shift.

Ethylbenzene

Institute of Occupational Health, Ministry of Social Affairs (Finland, 9/2020)
BEI: 5,2 mmol/l, mandelic acid [in urine]. Sampling time: after work shift at the end of the working week or exposure period.

No exposure indices known.

Xylene

DFG BEI-values list (Germany, 7/2022) [Xylene (all isomers)]
Notes: danger from percutaneous absorption (see p. 211 and p. 228).
BEI: 2000 mg/l, methylhippuric acid (toluric acid) (all isomers) [in urine]. Sampling time: end of exposure or end of shift.
TRGS 903 - BEI Values (Germany, 2/2022) [Xylene (all isomers)]
BEI: 2000 mg/l, methylhippuric acid [in urine]. Sampling time: end of exposure or end of shift.

Ethylbenzene

DFG BEI-values list (Germany, 7/2022) 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, 2/2022)
BEI: 250 mg/g creatinine, mandelic acid plus phenylglyoxylic acid [in urine]. Sampling time: end of exposure or end of shift.

No exposure indices known.

Xylene

5/2020. (II. 6.) ITM Decree (Hungary, 12/2022) [xylene]
BEI: 1500 mg/g creatinine, methylhippuric acid [in urine]. Sampling time: at the end of the shift.
BEI: 860 µmol/mmol creatinine, methylhippuric acid [in urine]. Sampling time: at the end of the shift.

Ethylbenzene

5/2020. (II. 6.) ITM Decree (Hungary, 12/2022)

SECTION 8: Exposure controls/personal protection

No exposure indices known.

Xylene

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.

NAOSH (Ireland, 1/2011) [Xylene]

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

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

Ethylbenzene

NAOSH (Ireland, 1/2011)

BMGV: Semi-quantitative, the biological analyte is an indicator of exposure to the substance but the quantitative interpretation of the measurement is ambiguous. These analytes should be used as a screening test if a quantitative test is not practical; or as a confirmatory test if the quantitative test is not specific and the origin of the determinant is in question., ethylbenzene [in endexhaled air]. Sampling time: not critical.

BMGV: 0.7 g/g creatinine [Semi-quantitative, the biological analyte is an indicator of exposure to the substance but the quantitative interpretation of the measurement is ambiguous. These analytes should be used as a screening test if a quantitative test is not practical; or as a confirmatory test if the quantitative test is not specific and the origin of the determinant is in question.], mandelic acid and phenylglyoxylic acid [in urine]. Sampling time: end of shift at end of workweek.

No exposure indices known.

No exposure indices known.

No exposure indices known.

No exposure indices known.

No exposure indices known.

No exposure indices known.

No exposure indices known.

No exposure indices known.

Xylene

Portuguese Institute of Quality (Portugal, 11/2014) [Xylenes]

BEI: 1.5 g/g creatinine, (o, m, p) -methyl-boronic acids [in urine].

Sampling time: end of shift.

Ethylbenzene

Portuguese Institute of Quality (Portugal, 11/2014)

BEI: 0.7 g/g creatinine, sum of mandelic acid and phenylglyoxylic acid [in urine]. Sampling time: end of shift.

Xylene

HG 1218/2006, Annex 2, with subsequent modifications and additions (Romania, 3/2020) [Xylene]

OBLV: 3 g/l, methylhippuric acid [in urine]. Sampling time: end of shift.

Ethylbenzene

HG 1218/2006, Annex 2, with subsequent modifications and additions (Romania, 3/2020)

OBLV: 1.5 g/g creatinine, mandelic acid [in urine]. Sampling time: end of the week.

Xylene

Government regulation SR c. 355/2006 (Slovakia, 9/2020) [xylene, all isomers]

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

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

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

SECTION 8: Exposure controls/personal protection

Ethylbenzene	<p>BLV: 14.6 µmol/l, xylene [in blood]. Sampling time: at the end of exposure or work shift.</p> <p>BLV: 2000 mg/l, sum of 2,3,4-methylhippuroic acids [in urine]. Sampling time: at the end of exposure or work shift.</p> <p>BLV: 1.5 mg/l, xylene [in blood]. Sampling time: at the end of exposure or work shift.</p> <p>Government regulation SR c. 355/2006 (Slovakia, 9/2020)</p> <p>BLV: 799 µmol/mmol creatinine, mandelic acid and phenylglyoxylic acid [in urine]. Sampling time: at the end of exposure or work shift; long-term exposure: after several work shifts.</p> <p>BLV: 7.44 µmol/mmol creatinine, 2 or 4-ethylfenol [in urine]. Sampling time: at the end of exposure or work shift; long-term exposure: after several work shifts.</p> <p>BLV: 1067 mg/g creatinine, mandelic acid and phenylglyoxylic acid [in urine]. Sampling time: at the end of exposure or work shift; long-term exposure: after several work shifts.</p> <p>BLV: 8.03 mg/g creatinine, 2 or 4-ethylfenol [in urine]. Sampling time: at the end of exposure or work shift; long-term exposure: after several work shifts.</p> <p>BLV: 10590 µmol/l, mandelic acid and phenylglyoxylic acid [in urine]. Sampling time: at the end of exposure or work shift; long-term exposure: after several work shifts.</p> <p>BLV: 98.6 µmol/l, 2 or 4-ethylfenol [in urine]. Sampling time: at the end of exposure or work shift; long-term exposure: after several work shifts.</p> <p>BLV: 1600 mg/l, mandelic acid and phenylglyoxylic acid [in urine]. Sampling time: at the end of exposure or work shift; long-term exposure: after several work shifts.</p> <p>BLV: 12 mg/l, 2 or 4-ethylfenol [in urine]. Sampling time: at the end of exposure or work shift; long-term exposure: after several work shifts.</p>
Xylene	<p>Regulation on protection of workers from the risks related to exposure to chemical substances at work (Slovenia, 5/2021) [xylene (all isomers)]</p> <p>BAT: 2 g/l, methylhippuric acid (all isomers) [in urine]. 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, 5/2021)</p> <p>BAT: 250 mg/g creatinine, mandelic acid and phenylglyoxylic acid [in urine]. Sampling time: at the end of the work shift.</p>
Xylene	<p>National institute of occupational safety and health (Spain, 4/2022) [Xylenes]</p> <p>VLB: 1 g/g creatinine, methylhippuric acids [in urine]. Sampling time: end of shift.</p>
Ethylbenzene	<p>National institute of occupational safety and health (Spain, 4/2022)</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.	<p>SUVA (Switzerland, 1/2023) [Xylene, all isomers]</p> <p>BEI: 2 g/l, methyl hippuric acid [in urine]. Sampling time: immediately after exposure or after working hours.</p>
Xylene	<p>SUVA (Switzerland, 1/2023)</p> <p>BEI: 600 mg/g creatinine, mandelic acid + phenylglyoxylic acid [in urine]. Sampling time: immediately after exposure or after working hours.</p>

SECTION 8: Exposure controls/personal protection

Xylene	EH40/2005 BMGVs (United Kingdom (UK), 8/2018) [Xylene, o-, m-, p- or mixed isomers] BGV: 650 mmol/mol creatinine, methyl hippuric acid [in urine]. Sampling time: post shift.
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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	Type	Exposure	Value	Population	Effects
Xylene	DNEL	Long term Inhalation	65.3 mg/m ³	General population	Local
	DNEL	Short term Inhalation	260 mg/m ³	General population	Local
	DNEL	Short term Inhalation	260 mg/m ³	General population	Systemic
	DNEL	Long term Inhalation	221 mg/m ³	Workers	Local
	DNEL	Long term Oral	12.5 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	65.3 mg/m ³	General population	Systemic
	DNEL	Long term Dermal	125 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	212 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	221 mg/m ³	Workers	Systemic
	DNEL	Short term Inhalation	442 mg/m ³	Workers	Local
	DNEL	Short term Inhalation	442 mg/m ³	Workers	Systemic
	DNEL	Long term Oral	1.6 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	15 mg/m ³	General population	Systemic
	DNEL	Long term Inhalation	77 mg/m ³	Workers	Systemic
	DNEL	Long term Dermal	180 mg/kg bw/day	Workers	Systemic
	DNEL	Short term Inhalation	293 mg/m ³	Workers	Local
Ethylbenzene	DMEL	Long term Inhalation	442 mg/m ³	Workers	Local
	DMEL	Short term Inhalation	884 mg/m ³	Workers	Systemic

PNECs

No PNECs 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.

SECTION 8: Exposure controls/personal protection

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.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Recommendations : Wear suitable gloves tested to EN374.
- < 1 hour (breakthrough time): Nitrile gloves. thickness > 0.3 mm
- 1 - 4 hours (breakthrough time): polyvinyl alcohol (PVA) thickness > 0.3 mm or 4H / Silver Shield® gloves.
- > 8 hours (breakthrough time): Viton® thickness > 0.3 mm gloves
- Wash hands before breaks and immediately after handling the product.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves. Refer to European Standard EN 1149 for further information on material and design requirements and test methods.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.
- Filter type: A
- Filter type (spray application): A P
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

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

9.1 Information on basic physical and chemical properties

Appearance

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

SECTION 9: Physical and chemical properties

Initial boiling point and boiling range :

Ingredient name	°C	°F	Method
Ethylbenzene	136.1	277	OECD 104
Xylene	136.16	277.1	

Flammability : Not available.

Lower and upper explosion limit : Lower: 0.8%
Upper: 6.7%

Flash point : Closed cup: 25°C (77°F)

Auto-ignition temperature :

Ingredient name	°C	°F	Method
Xylene	432	809.6	
Ethylbenzene	432.22	810	

Decomposition temperature : Not available.

pH : Not applicable.

Viscosity : Kinematic (40°C): >20.5 mm²/s

Solubility(ies) :

Not available.

Solubility in water : Not available.

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

Vapour pressure :

Ingredient name	Vapour Pressure at 20°C			Vapour pressure at 50°C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
Ethylbenzene	9.30076	1.2				
Xylene	6.7	0.89				

Relative density : Not available.

Density : 0.86 g/cm³

Vapour density : Not available.

Explosive properties : Not available.

Oxidising properties : Not available.

Particle characteristics

Median particle size : 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

SECTION 10: Stability and reactivity

10.6 Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

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

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Xylene	LC50 Inhalation Vapour	Rat	21.7 mg/l	4 hours
Ethylbenzene	LD50 Oral	Rat	4300 mg/kg	-
	LC50 Inhalation Dusts and mists	Rat	29000 mg/l	4 hours
	LD50 Dermal	Rabbit	15400 mg/kg	-
	LD50 Oral	Rat	3500 mg/kg	-

Conclusion/Summary : Based on available data, the classification criteria are not met.

Acute toxicity estimates

Route	ATE value
Dermal	5945.19 mg/kg
Inhalation (vapours)	48.67 mg/l

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Xylene	Eyes - Mild irritant	Rabbit	-	87 mg	-
	Eyes - Severe irritant	Rabbit	-	24 hours 5 mg	-
	Skin - Mild irritant	Rat	-	8 hours 60 uL	-
	Skin - Moderate irritant	Rabbit	-	100 %	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-
titanium dioxide	Skin - Mild irritant	Human	-	72 hours 300 ug l	-
Ethylbenzene	Eyes - Severe irritant	Rabbit	-	500 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 15 mg	-

Conclusion/Summary : Causes skin irritation.

Sensitisation

Conclusion/Summary : Based on available data, the classification criteria are not met.

Mutagenicity

Conclusion/Summary : Based on available data, the classification criteria are not met.

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.

Conclusion/Summary : Based on available data, the classification criteria are not met.

Reproductive toxicity

Conclusion/Summary : Based on available data, the classification criteria are not met.

Teratogenicity

Conclusion/Summary : Based on available data, the classification criteria are not met.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
Xylene	Category 3	-	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

SECTION 11: Toxicological information

Product/ingredient name	Category	Route of exposure	Target organs
Xylene Ethylbenzene	Category 2 Category 2	oral, inhalation oral, inhalation	- hearing organs

Aspiration hazard

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

Information on likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye irritation.
Inhalation : No known significant effects or critical hazards.
Skin contact : Causes skin irritation.
Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness
Inhalation : No specific data.
Skin contact : Adverse symptoms may include the following:
irritation
redness
Ingestion : No specific data.

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

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

Conclusion/Summary : Not available.
General : May cause damage to organs through prolonged or repeated exposure.
Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Reproductive toxicity : No known significant effects or critical hazards.

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties

Not available.

11.2.2 Other information

Not available.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
Titanium dioxide	Acute LC50 3 mg/l Fresh water	Crustaceans - <i>Ceriodaphnia dubia</i> - Neonate	48 hours
	Acute LC50 6.5 mg/l Fresh water	Daphnia - <i>Daphnia pulex</i> - Neonate	48 hours
	Acute LC50 >1000000 µg/l Marine water	Fish - <i>Fundulus heteroclitus</i>	96 hours

Conclusion/Summary : Based on available data, the classification criteria are not met.

12.2 Persistence and degradability

Conclusion/Summary : This product has not been tested for biodegradation.

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Xylene	3.12	8.1 to 25.9	Low
Ethylbenzene	3.6	-	Low

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

12.6 Endocrine disrupting properties

Not available.

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.
Risk of self-ignition of used cleaning rags, paper wipes etc. Contaminated materials should be soaked in water and placed in a closed metal container before disposal.

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

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





Packaging

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

SECTION 13: Disposal considerations

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

SECTION 14: Transport information

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

Additional information

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

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

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

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

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

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

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

Product/ingredient name	%	Designation [Usage]
TEKNOLAC COMBI 2280-02	≥90	3

SECTION 15: Regulatory information

Labelling :

Other EU regulations

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

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

Explosive precursors : Not applicable.

Ozone depleting substances (1005/2009/EU)

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 : A II
Very dangerous flammable liquid.

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

Czech Republic

Storage code : II

Denmark

Danish fire class : II-1

Executive Order No. 1795/2015

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

MAL-code : 4-6

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

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

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

SECTION 15: Regulatory information

MAL-code: 4-6

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

- Protective clothing must be worn.

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

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

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

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

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

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

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

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

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

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

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

*See Regulations.

Restrictions on use	:	Not to be used by professional users below 18 years of age. See the National Working Environment Authorities Executive Order regarding Young People At Work.
List of undesirable substances	:	Not listed
Carcinogenic waste	:	Waste containers must be labeled: Contains a substance or substances regulated by Danish working environment legislation on cancer risks.
Finland		
France		
Social Security Code, Articles L 461-1 to L 461-7	:	Xylene RG 4bis, RG 84 Ethylbenzene RG 84
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

SECTION 15: Regulatory information


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 : 2


Technical instruction on air quality control :  A-Luft Number 5.2.5: 21.2%
TA-Luft Class I - Number 5.2.5: 4.1%
TA-Luft Class II - Number 5.2.7.1.1: 1.7%

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
 xylene	-	-	-	Development 2	-
Solvent naphtha (petroleum), light arom.	Listed	Listed	-	-	-
Naphtha (petroleum), hydrotreated heavy	Listed	Listed	-	-	-

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

Norway

Sweden

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

Switzerland

VOC content :  VOC (w/w): 24.2%

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

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

SECTION 16: Other information

Indicates information that has changed from previously issued version.

Abbreviations and acronyms

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

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

Classification	Justification
Flam. Liq. 3, H226 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT RE 2, H373	On basis of test data 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.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H351	Suspected of causing cancer.
H373	May cause damage to organs through prolonged or repeated exposure.

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 Irrit. 2	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
Flam. Liq. 2	FLAMMABLE LIQUIDS - Category 2
Flam. Liq. 3	FLAMMABLE LIQUIDS - Category 3
Skin Irrit. 2	SKIN CORROSION/IRRITATION - Category 2
STOT 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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TEKNOLAC COMBI 2280-02

All variants

Notice to reader

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

