

Safety Data Sheet

This safety data sheet was created pursuant to the requirements of:
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision Date: 23-Apr-2026

Version 1

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

1.1. Product identifier

SDS # ISSI-005-EU
Product Name Binary UniCoat Pressure Sensitive Paint (Liquid)

Other means of identification

Pure substance/mixture Mixture

Contains Toluene; Ethyl benzene

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

Recommended use Wind tunnel testing

1.3. Details of the supplier of the safety data sheet

Supplier

Innovative Scientific Solutions, Inc.
7610 McEwen Road
Dayton, OH 45459

For further information, please contact

Contact Point Innovative Scientific Solutions, Inc. Phone: (937) 630-3012
Fax: (937) 630-3015
Email Address painting@innssi.com

1.4. Emergency telephone number

Emergency Telephone (24 hr) (937) 630-3012 x100

Emergency Telephone Number - §45 - (EC)1272/2008

Europe 112

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Flammable liquids	Category 2 - (H225)
Skin irritation	Category 2 - (H315)
Reproductive toxicity	Category 2 - (H361d)
Specific target organ toxicity (single exposure)	Category 3 - (H336)
Category 3 Target organ effects: Narcotic effects.	
Specific target organ toxicity (repeated exposure)	Category 2 - (H373)
Aspiration hazard	Category 1 - (H304)
Hazardous to the aquatic environment - chronic	Category 3 - (H412)

2.2. Label elements

Contains Toluene; Ethyl benzene



Signal word
Danger

Hazard statements

- H304 - May be fatal if swallowed and enters airways
- H315 - Causes skin irritation
- H336 - May cause drowsiness or dizziness
- H361d - Suspected of damaging the unborn child
- H373 - May cause damage to organs through prolonged or repeated exposure
- H412 - Harmful to aquatic life with long lasting effects
- H225 - Highly flammable liquid and vapour

Precautionary Statements - EU (§28, 1272/2008)

- P201 - Obtain special instructions before use
- P202 - Do not handle until all safety precautions have been read and understood
- P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
- P233 - Keep container tightly closed
- P240 - Ground and bond container and receiving equipment
- P241 - Use explosion-proof electrical, ventilating and lighting equipment
- P242 - Use only non-sparking tools
- P243 - Take precautionary measures against static discharge
- P260 - Do not breathe dust, fume, gas, mist, vapors and spray
- P264 - Wash face, hands and any exposed skin thoroughly after handling
- P271 - Use only outdoors or in a well-ventilated area
- P273 - Avoid release to the environment
- P280 - Wear protective gloves, protective clothing, eye protection and face protection
- P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
- P331 - Do NOT induce vomiting
- P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
- P362 - Take off contaminated clothing and wash before reuse
- P332 + P313 - If skin irritation occurs: Get medical advice/attention
- P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
- P312 - Call a POISON CENTER or doctor/physician if you feel unwell
- P308 + P313 - IF exposed or concerned: Get medical advice/attention
- P314 - Get medical advice/attention if you feel unwell
- P370 + P378 - In case of fire: Use CO2, dry chemical, or foam to extinguish
- P403 + P235 - Store in a well-ventilated place. Keep cool
- P405 - Store locked up
- P501 - Dispose of contents/ container to an approved waste disposal plant

Additional information

This product requires child resistant fastenings when supplied to the general public unless the product is placed on the market in the form of aerosols or in a container with a sealed spray attachment. This product requires tactile warnings if supplied to the general public.

2.3. Other hazards

No information available.

Endocrine Disruptor Information This product does not contain any known or suspected endocrine disruptors.

SECTION 3: Composition/information on ingredients**3.1 Substances**

Not applicable

3.2 Mixtures

Chemical name	Weight-%	REACH registration number	EC No. (Index No.)	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)
Toluene 108-88-3	10-30	No data available	203-625-9 (601-021-00-3)	Flam. Liq. 2 (H225) Asp. Tox. 1 (H304) Skin Irrit. 2 (H315) STOT SE 3 (H336) Repr. 2 (H361d) STOT RE 2 (H373)	-	-	-
m-Xylene 108-38-3	5-10	No data available	203-576-3 (601-022-00-9)	Flam. Liq. 3 (H226) Acute Tox. 4 (H312) Skin Irrit. 2 (H315) Acute Tox. 4 (H332)	-	-	-
p-Xylene 106-42-3	1-5	No data available	203-396-5 (601-022-00-9)	Flam. Liq. 3 (H226) Acute Tox. 4 (H312) Skin Irrit. 2 (H315) Acute Tox. 4 (H332)	-	-	-
o-Xylene 95-47-6	1-5	No data available	202-422-2 (601-022-00-9)	Flam. Liq. 3 (H226) Acute Tox. 4 (H312) Skin Irrit. 2 (H315) Acute Tox. 4 (H332)	-	-	-
Ethylbenzene 100-41-4	1-5	No data available	202-849-4 (601-023-00-4)	Flam. Liq. 2 (H225) Asp. Tox. 1 (H304) Acute Tox. 4 (H332) STOT RE 2 (H373)	-	-	-

Chemical name	Weight-%	REACH registration number	EC No. (Index No.)	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)
Titanium dioxide 13463-67-7	0.1-1	No data available	236-675-5	No data available	-	-	-

Full text of H- and EUH-phrases: see section 16

Acute Toxicity Estimate

If LD50/LC50 data is not available or does not correspond to the classification category, then the appropriate conversion value from CLP Annex I, Table 3.1.2, is used to calculate the acute toxicity estimate (ATEmix) for classifying a mixture based on its components

Chemical name	Oral LD50 mg/kg	Dermal LD50 mg/kg	Inhalation LC50 - 4 hour - dust/mist - mg/L	Inhalation LC50 - 4 hour - vapour - mg/L	Inhalation LC50 - 4 hour - gas - ppm
Toluene 108-88-3	5000	12000	12.5	No data available	No data available
m-Xylene 108-38-3	5000	12180	27.124	No data available	No data available
p-Xylene 106-42-3	4029	12126	No data available	No data available	No data available
o-Xylene 95-47-6	3608	14100	No data available	23.0258	No data available
Ethylbenzene 100-41-4	3500	15400	17.4	No data available	No data available
Titanium dioxide 13463-67-7	2000	No data available	5.0951	No data available	No data available

This product does not contain candidate substances of very high concern at a concentration $\geq 0.1\%$ (Regulation (EC) No. 1907/2006 (REACH), Article 59)

Additional Information

Substances without a classification are included, because they have established occupational exposure limits

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.
Inhalation	Remove to fresh air. Aspiration into lungs can produce severe lung damage. If breathing has stopped, give artificial respiration. Get medical attention immediately. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area.
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation develops and persists.

Ingestion	Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. ASPIRATION HAZARD IF SWALLOWED - CAN ENTER LUNGS AND CAUSE DAMAGE. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. Get immediate medical attention.
Self-protection of the first aider	Remove all sources of ignition. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Use personal protective equipment as required. See section 8 for more information. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Avoid contact with skin, eyes or clothing.

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

Symptoms	Difficulty in breathing. Coughing and/ or wheezing. Dizziness. Erythema (skin redness). May cause redness and tearing of the eyes. Inhalation of high vapour concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.
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4.3. Indication of any immediate medical attention and special treatment needed

Note to doctors	Because of the danger of aspiration, emesis or gastric lavage should not be used unless the risk is justified by the presence of additional toxic substances.
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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable Extinguishing Media	Dry chemical. Carbon dioxide (CO ₂). Water spray. Alcohol resistant foam.
Large Fire	CAUTION: Use of water spray when fighting fire may be inefficient.

Unsuitable extinguishing media	Do not scatter spilled material with high pressure water streams.
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5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical	Risk of ignition. Keep product and empty container away from heat and sources of ignition. In the event of fire, cool tanks with water spray. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
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5.3. Advice for firefighters

Special protective equipment and precautions for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protective equipment.
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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	Evacuate personnel to safe areas. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material.
Other information	Ventilate the area. Refer to protective measures listed in Sections 7 and 8.
For emergency responders	Use personal protection recommended in Section 8.

6.2. Environmental precautions

Environmental precautions Refer to protective measures listed in Sections 7 and 8. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

6.3. Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Do not touch or walk through spilled material. A vapour suppressing foam may be used to reduce vapours. Dyke far ahead of spill to collect run-off water. Keep out of drains, sewers, ditches and waterways. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.

Methods for cleaning up Take precautionary measures against static discharges. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labelled containers.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Reference to other sections See section 8 for more information. See section 13 for more information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling Use personal protective equipment. Avoid breathing vapours or mists. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use grounding and bonding connection when transferring this material to prevent static discharge, fire or explosion. Use with local exhaust ventilation. Use spark-proof tools and explosion-proof equipment. Keep in an area equipped with sprinklers. Use according to package label instructions. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Remove contaminated clothing and shoes. Take off contaminated clothing and wash it before reuse. In case of insufficient ventilation, wear suitable respiratory equipment.

General hygiene considerations Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Wear suitable gloves and eye/face protection.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep in properly labelled containers. Do not store near combustible materials. Keep in an area equipped with sprinklers. Store in accordance with the particular national regulations. Store in accordance with local regulations. Store locked up. Keep out of the reach of children. Store away from other materials.

Storage class (TRGS 510) LGK 3.

7.3. Specific end use(s)

Specific Use(s)
Wind tunnel testing.

Risk Management Methods (RMM) The information required is contained in this Safety Data Sheet.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure Limits

Chemical name	European Union	Austria	Belgium	Bulgaria	Croatia
Toluene 108-88-3	TWA: 50 ppm; TWA: 192 mg/m ³ ; STEL: 100 ppm; STEL: 384 mg/m ³ ; pSk	TWA-TMW: 50 ppm; TWA-TMW: 190 mg/m ³ ; STEL-KZGW: 100 ppm (4 X 15 min); STEL-KZGW: 380 mg/m ³ (4 X 15 min); Sk	TWA: 20 ppm; TWA: 77 mg/m ³ ; STEL: 100 ppm; STEL: 384 mg/m ³ ; Sd	TWA: 50 ppm; TWA: 192.0 mg/m ³ ; STEL: 100 ppm; STEL: 384.0 mg/m ³ ; Sk	TWA-GVI: 50 ppm; TWA-GVI: 192 mg/m ³ ; STEL-KGVI: 100 ppm; STEL-KGVI: 384 mg/m ³ ; Sk
m-Xylene 108-38-3	TWA: 50 ppm; TWA: 221 mg/m ³ ; STEL: 100 ppm; STEL: 442 mg/m ³ ; pSk	TWA-TMW: 50 ppm; TWA-TMW: 221 mg/m ³ ; STEL-KZGW: 100 ppm (4 X 15 min); STEL-KZGW: 442 mg/m ³ (4 X 15 min);	TWA: 50 ppm; TWA: 221 mg/m ³ ; STEL: 100 ppm; STEL: 442 mg/m ³ ; Sd	TWA: 50 ppm; TWA: 221.0 mg/m ³ ; STEL: 100 ppm; STEL: 442.0 mg/m ³ ; Sk	TWA-GVI: 50 ppm; TWA-GVI: 221 mg/m ³ ; STEL-KGVI: 100 ppm; STEL-KGVI: 442 mg/m ³ ; Sk
p-Xylene 106-42-3	TWA: 50 ppm; TWA: 221 mg/m ³ ; STEL: 100 ppm; STEL: 442 mg/m ³ ; pSk	TWA-TMW: 50 ppm; TWA-TMW: 221 mg/m ³ ; STEL-KZGW: 100 ppm (4 X 15 min); STEL-KZGW: 442 mg/m ³ (4 X 15 min);	TWA: 50 ppm; TWA: 221 mg/m ³ ; STEL: 100 ppm; STEL: 442 mg/m ³ ; Sd	TWA: 50 ppm; TWA: 221.0 mg/m ³ ; STEL: 100 ppm; STEL: 442.0 mg/m ³ ; Sk	TWA-GVI: 50 ppm; TWA-GVI: 221 mg/m ³ ; STEL-KGVI: 100 ppm; STEL-KGVI: 442 mg/m ³ ; Sk
o-Xylene 95-47-6	TWA: 50 ppm; TWA: 221 mg/m ³ ; STEL: 100 ppm; STEL: 442 mg/m ³ ; pSk	TWA-TMW: 50 ppm; TWA-TMW: 221 mg/m ³ ; STEL-KZGW: 100 ppm (4 X 15 min); STEL-KZGW: 442 mg/m ³ (4 X 15 min);	TWA: 50 ppm; TWA: 221 mg/m ³ ; STEL: 100 ppm; STEL: 442 mg/m ³ ; Sd	TWA: 50 ppm; TWA: 221.0 mg/m ³ ; STEL: 100 ppm; STEL: 442.0 mg/m ³ ; Sk	TWA-GVI: 50 ppm; TWA-GVI: 221 mg/m ³ ; STEL-KGVI: 100 ppm; STEL-KGVI: 442 mg/m ³ ; Sk
Ethylbenzene 100-41-4	TWA: 100 ppm; TWA: 442 mg/m ³ ; STEL: 200 ppm; STEL: 884 mg/m ³ ; pSk	TWA-TMW: 100 ppm; TWA-TMW: 440 mg/m ³ ; STEL-KZGW: 200 ppm (8 X 5 min); STEL-KZGW: 880 mg/m ³ (8 X 5 min); Sk	TWA: 20 ppm; TWA: 87 mg/m ³ ; STEL: 125 ppm; STEL: 551 mg/m ³ ; Sd	TWA: 435 mg/m ³ ; STEL: 545 mg/m ³ ; Sk	TWA-GVI: 100 ppm; TWA-GVI: 442 mg/m ³ ; STEL-KGVI: 200 ppm; STEL-KGVI: 884 mg/m ³ ; Sk
Titanium dioxide 13463-67-7	-	TWA-TMW: 5 mg/m ³ ; alveolar dust, respirable fraction STEL-KZGW: 10 mg/m ³ (2 X 60 min); alveolar dust, respirable fraction	TWA: 10 mg/m ³ ;	TWA: 10.0 mg/m ³ ; respirable dust	TWA-GVI: 10 mg/m ³ ; total dust, inhalable particles TWA-GVI: 4 mg/m ³ ; respirable dust

Chemical name	Cyprus	Czech Republic	Denmark	Estonia	Finland
Toluene 108-88-3	TWA: 50 ppm; TWA: 192 mg/m ³ ; STEL: 100 ppm; STEL: 384 mg/m ³ ; pSk	TWA: 200 mg/m ³ ; Ceiling: 500 mg/m ³ ; pSk	TWA: 25 ppm; TWA: 94 mg/m ³ ; STEL: 384 mg/m ³ ; STEL: 100 ppm; pSk	TWA: 50 ppm; TWA: 192 mg/m ³ ; STEL: 100 ppm; STEL: 384 mg/m ³ ; Sk	TWA: 25 ppm; TWA: 81 mg/m ³ ; STEL: 100 ppm; STEL: 380 mg/m ³ ; pSk
m-Xylene 108-38-3	TWA: 50 ppm; TWA: 221 mg/m ³ ; STEL: 100 ppm; STEL: 442 mg/m ³ ; pSk	TWA: 200 mg/m ³ ; Ceiling: 400 mg/m ³ ; pSk	TWA: 25 ppm; TWA: 109 mg/m ³ ; STEL: 442 mg/m ³ ; STEL: 100 ppm; pSk	TWA: 50 ppm; TWA: 200 mg/m ³ ; STEL: 100 ppm; STEL: 450 mg/m ³ ; Sk	TWA: 50 ppm; TWA: 220 mg/m ³ ; STEL: 100 ppm; STEL: 440 mg/m ³ ; pSk
p-Xylene 106-42-3	TWA: 50 ppm; TWA: 221 mg/m ³ ; STEL: 100 ppm; STEL: 442 mg/m ³ ; pSk	TWA: 200 mg/m ³ ; Ceiling: 400 mg/m ³ ; pSk	TWA: 25 ppm; TWA: 109 mg/m ³ ; STEL: 442 mg/m ³ ; STEL: 100 ppm; pSk	TWA: 50 ppm; TWA: 200 mg/m ³ ; STEL: 100 ppm; STEL: 450 mg/m ³ ; Sk	TWA: 50 ppm; TWA: 220 mg/m ³ ; STEL: 100 ppm; STEL: 440 mg/m ³ ; pSk
o-Xylene 95-47-6	TWA: 50 ppm; TWA: 221 mg/m ³ ; STEL: 100 ppm; STEL: 442 mg/m ³ ; pSk	TWA: 200 mg/m ³ ; Ceiling: 400 mg/m ³ ; pSk	TWA: 25 ppm; TWA: 109 mg/m ³ ; STEL: 442 mg/m ³ ; STEL: 100 ppm; pSk	TWA: 50 ppm; TWA: 200 mg/m ³ ; STEL: 100 ppm; STEL: 450 mg/m ³ ; Sk	TWA: 50 ppm; TWA: 220 mg/m ³ ; STEL: 100 ppm; STEL: 440 mg/m ³ ; pSk
Ethylbenzene 100-41-4	TWA: 100 ppm; TWA: 442 mg/m ³ ; STEL: 200 ppm; STEL: 884 mg/m ³ ; pSk	TWA: 200 mg/m ³ ; Ceiling: 500 mg/m ³ ; pSk	TWA: 50 ppm; TWA: 217 mg/m ³ ; STEL: 434 mg/m ³ ; STEL: 100 ppm; pSk	TWA: 100 ppm; TWA: 442 mg/m ³ ; STEL: 200 ppm; STEL: 884 mg/m ³ ; Sk S	TWA: 50 ppm; TWA: 220 mg/m ³ ; STEL: 200 ppm; STEL: 880 mg/m ³ ; pSk
Titanium dioxide 13463-67-7	-	-	TWA: 6 mg/m ³ ; STEL: 12 mg/m ³ ;	TWA: 5 mg/m ³ ;	-
Chemical name	France	Germany TRGS	Germany DFG	Greece	Hungary
Toluene 108-88-3	TWA- VME (restrictif): 20 p pm; TWA- VME (restrictif): 76.8 mg/m ³ ; STEL- VLCT (restrictif): 10 0 ppm; STEL- VLCT (restrictif): 38 4 mg/m ³ ; dSk	TWA-AGW; 50 ppm (2(II)); TWA-AGW; 190 mg/m ³ (2(II)); Sk	TWA-MAK: 50 ppm; II(2); TWA-MAK: 190 mg/m ³ ; II(2); Peak: 100 ppm; Peak: 380 mg/m ³ ; Sk	TWA: 50 ppm; TWA: 192 mg/m ³ ; STEL: 100 ppm; STEL: 384 mg/m ³ ; pSk	TWA-AK: 190 mg/m ³ ; TWA-AK: 50 ppm; STEL-CK: 384 mg/m ³ ; STEL-CK: 100 ppm; pSk
m-Xylene 108-38-3	TWA- VME (restrictif): 50 p pm; TWA- VME (restrictif): 221 mg/m ³ ; STEL- VLCT (restrictif): 10 0 ppm; STEL- VLCT (restrictif): 44 2 mg/m ³ ; dSk	TWA-AGW; 50 ppm (2(II)); TWA-AGW; 220 mg/m ³ (2(II)); Sk	-	TWA: 100 ppm; TWA: 435 mg/m ³ ; STEL: 150 ppm; STEL: 650 mg/m ³ ; pSk	TWA-AK: 221 mg/m ³ ; TWA-AK: 50 ppm; STEL-CK: 442 mg/m ³ ; STEL-CK: 100 ppm; pSk
p-Xylene 106-42-3	TWA- VME (restrictif): 50 p pm;	TWA-AGW; 50 ppm (2(II)); TWA-AGW;	-	TWA: 100 ppm; TWA: 435 mg/m ³ ; STEL: 150 ppm;	TWA-AK: 221 mg/m ³ ; TWA-AK: 50 ppm;

	TWA-VME (restrictif): 221 mg/m ³ ; STEL-VLCT (restrictif): 10 0 ppm; STEL-VLCT (restrictif): 44 2 mg/m ³ ; dSk	220 mg/m ³ (2(II)); Sk		STEL: 650 mg/m ³ ; pSk	STEL-CK: 442 mg/m ³ ; STEL-CK: 100 ppm; pSk
Chemical name	France	Germany TRGS	Germany DFG	Greece	Hungary
o-Xylene 95-47-6	TWA-VME (restrictif): 50 ppm; TWA-VME (restrictif): 221 mg/m ³ ; STEL-VLCT (restrictif): 10 0 ppm; STEL-VLCT (restrictif): 44 2 mg/m ³ ; dSk	TWA-AGW; 50 ppm (2(II)); TWA-AGW; 220 mg/m ³ (2(II)); Sk	-	TWA: 100 ppm; TWA: 435 mg/m ³ ; STEL: 150 ppm; STEL: 650 mg/m ³ ; pSk	TWA-AK: 221 mg/m ³ ; TWA-AK: 50 ppm; STEL-CK: 100 ppm; STEL-CK: 442 mg/m ³ ; pSk
Ethylbenzene 100-41-4	TWA-VME (restrictif): 20 ppm; TWA-VME (restrictif): 88.4 mg/m ³ ; STEL-VLCT (restrictif): 10 0 ppm; STEL-VLCT (restrictif): 44 2 mg/m ³ ; dSk	TWA-AGW; 20 ppm (2(II)); TWA-AGW; 88 mg/m ³ (2(II)); Sk	TWA-MAK: 20 ppm; II(2); TWA-MAK: 88 mg/m ³ ; II(2); Peak: 40 ppm; Peak: 176 mg/m ³ ; Sk	TWA: 100 ppm; TWA: 435 mg/m ³ ; STEL: 125 ppm; STEL: 545 mg/m ³ ; pSk	TWA-AK: 100 ppm; TWA-AK: 442 mg/m ³ ; STEL-CK: 200 ppm; STEL-CK: 884 mg/m ³ ; pSk
Titanium dioxide 13463-67-7	TWA-VME: 10 mg/m ³ ;	TWA-AGW; 10 mg/m ³ (2(II)); inhalable fraction TWA-AGW; 1.25 mg/m ³ (); respirable fraction	TWA-MAK: 0.3 mg/m ³ ; II(8);respirable fraction Peak: 2.4 mg/m ³ ; respirable fraction	TWA: 10 mg/m ³ ; inhalable fraction TWA: 5 mg/m ³ ; respirable fraction	-
Chemical name	Ireland	Italy MDLPS	Italy AIDII	Latvia	Lithuania
Toluene 108-88-3	TWA: 192 mg/m ³ ; TWA: 50 ppm; STEL: 384 mg/m ³ ; STEL: 100 ppm; pSk	TWA: 50 ppm; TWA: 192 mg/m ³ ; pSk	TWA: 20 ppm; TWA: 75.4 mg/m ³ ;	TWA: 14 ppm; TWA: 50 mg/m ³ ; STEL: 40 ppm; STEL: 150 mg/m ³ ; pSk	TWA-IPRD: 50 ppm; TWA-IPRD: 192 mg/m ³ ; STEL-TPRD: 100 ppm; STEL-TPRD: 384 mg/m ³ ; Sk
m-Xylene 108-38-3	TWA: 50 ppm; TWA: 221 mg/m ³ ; STEL: 100 ppm; STEL: 442 mg/m ³ ; pSk	TWA: 50 ppm; TWA: 221 mg/m ³ ; STEL: 100 ppm; STEL: 442 mg/m ³ ; pSk	TWA: 100 ppm; TWA: 434 mg/m ³ ; STEL (REL): 150 ppm; STEL (REL): 651 mg/m ³ ;	TWA: 50 ppm; TWA: 221 mg/m ³ ; STEL: 100 ppm; STEL: 442 mg/m ³ ; pSk	TWA-IPRD: 221 mg/m ³ ; TWA-IPRD: 50 ppm; STEL-TPRD: 442 mg/m ³ ; STEL-TPRD: 100 ppm;

					Sk
p-Xylene 106-42-3	TWA: 50 ppm; TWA: 221 mg/m ³ ; STEL: 100 ppm; STEL: 442 mg/m ³ ; pSk	TWA: 50 ppm; TWA: 221 mg/m ³ ; STEL: 100 ppm; STEL: 442 mg/m ³ ; pSk	TWA: 100 ppm; TWA: 434 mg/m ³ ; STEL (REL): 150 ppm; STEL (REL): 651 mg/m ³ ;	TWA: 50 ppm; TWA: 221 mg/m ³ ; STEL: 100 ppm; STEL: 442 mg/m ³ ; pSk	TWA-IPRD: 221 mg/m ³ ; TWA-IPRD: 50 ppm; STEL-TPRD: 442 mg/m ³ ; STEL-TPRD: 100 ppm; Sk
o-Xylene 95-47-6	TWA: 50 ppm; TWA: 221 mg/m ³ ; STEL: 100 ppm; STEL: 442 mg/m ³ ; pSk	TWA: 50 ppm; TWA: 221 mg/m ³ ; STEL: 100 ppm; STEL: 442 mg/m ³ ; pSk	TWA: 100 ppm; TWA: 434 mg/m ³ ; STEL (REL): 150 ppm; STEL (REL): 651 mg/m ³ ;	TWA: 50 ppm; TWA: 221 mg/m ³ ; STEL: 100 ppm; STEL: 442 mg/m ³ ; pSk	TWA-IPRD: 221 mg/m ³ ; TWA-IPRD: 50 ppm; STEL-TPRD: 442 mg/m ³ ; STEL-TPRD: 100 ppm; Sk
Chemical name	Ireland	Italy MDLPS	Italy AIDII	Latvia	Lithuania
Ethylbenzene 100-41-4	TWA: 100 ppm; TWA: 442 mg/m ³ ; STEL: 200 ppm; STEL: 884 mg/m ³ ; pSk	TWA: 100 ppm; TWA: 442 mg/m ³ ; STEL: 200 ppm; STEL: 884 mg/m ³ ; pSk	TWA: 20 ppm; TWA: 87 mg/m ³ ;	TWA: 100 ppm; TWA: 442 mg/m ³ ; STEL: 200 ppm; STEL: 884 mg/m ³ ; pSk	TWA-IPRD: 100 ppm; TWA-IPRD: 442 mg/m ³ ; STEL-TPRD: 200 ppm; STEL-TPRD: 884 mg/m ³ ; Sk
Titanium dioxide 13463-67-7	TWA: 10 mg/m ³ ; total inhalable dust TWA: 4 mg/m ³ ; respirable dust STEL: 30 mg/m ³ (calculated); respirable dust STEL: 12 mg/m ³ (calculated);	-	TWA: 10 mg/m ³ ;	TWA: 10 mg/m ³ ;	TWA-IPRD: 5 mg/m ³ ;
Chemical name	Luxembourg	Malta	Netherlands	Norway	Poland
Toluene 108-88-3	TWA: 50 ppm; TWA: 192 mg/m ³ ; STEL: 100 ppm; STEL: 384 mg/m ³ ; pSk	TWA: 50 ppm; TWA: 192 mg/m ³ ; STEL: 100 ppm; STEL: 384 mg/m ³ ; pSk	TWA: 39 ppm; TWA: 150 mg/m ³ ; STEL: 100 ppm; STEL: 384 mg/m ³ ;	TWA: 25 ppm; TWA: 94 mg/m ³ ; STEL: 37.5 ppm (value calculated); STEL: 141 mg/m ³ (value calculated); Sk	TWA-NDS: 100 mg/m ³ ; STEL-NDSch: 200 mg/m ³ ; Sk
m-Xylene 108-38-3	TWA: 50 ppm; TWA: 221 mg/m ³ ; STEL: 100 ppm; STEL: 442 mg/m ³ ; pSk	TWA: 50 ppm; TWA: 221 mg/m ³ ; STEL: 100 ppm; STEL: 442 mg/m ³ ; pSk	TWA: 47.5 ppm; TWA: 210 mg/m ³ ; STEL: 100 ppm; STEL: 442 mg/m ³ ; Sk	TWA: 25 ppm; TWA: 108 mg/m ³ ; STEL: 37.5 ppm (value calculated); STEL: 135 mg/m ³ (value calculated); Sk	TWA-NDS: 100 mg/m ³ ; STEL-NDSch: 200 mg/m ³ ; Sk
p-Xylene 106-42-3	TWA: 50 ppm; TWA: 221 mg/m ³ ; STEL: 100 ppm;	TWA: 50 ppm; TWA: 221 mg/m ³ ; STEL: 100 ppm;	TWA: 47.5 ppm; TWA: 210 mg/m ³ ; STEL: 100 ppm;	TWA: 25 ppm; TWA: 108 mg/m ³ ; STEL: 37.5	TWA-NDS: 100 mg/m ³ ; STEL-NDSch: 200

	STEL: 442 mg/m ³ ; pSk	STEL: 442 mg/m ³ ; pSk	STEL: 442 mg/m ³ ; Sk	ppm (value calculated); STEL: 135 mg/m ³ (value calculated); Sk	mg/m ³ ; Sk
o-Xylene 95-47-6	TWA: 50 ppm; TWA: 221 mg/m ³ ; STEL: 100 ppm; STEL: 442 mg/m ³ ; pSk	TWA: 50 ppm; TWA: 221 mg/m ³ ; STEL: 100 ppm; STEL: 442 mg/m ³ ; pSk	TWA: 47.5 ppm; TWA: 210 mg/m ³ ; STEL: 100 ppm; STEL: 442 mg/m ³ ; Sk	TWA: 25 ppm; TWA: 108 mg/m ³ ; STEL: 37.5 ppm (value calculated); STEL: 135 mg/m ³ (value calculated); Sk	TWA-NDS: 100 mg/m ³ ; STEL-NDSCh: 200 mg/m ³ ; Sk
Chemical name	Luxembourg	Malta	Netherlands	Norway	Poland
Ethylbenzene 100-41-4	TWA: 100 ppm; TWA: 442 mg/m ³ ; STEL: 200 ppm; STEL: 884 mg/m ³ ; pSk	TWA: 100 ppm; TWA: 442 mg/m ³ ; STEL: 200 ppm; STEL: 884 mg/m ³ ; pSk	TWA: 48.6 ppm; TWA: 215 mg/m ³ ; STEL: 97.3 ppm; STEL: 430 mg/m ³ ; Sk	TWA: 5 ppm; TWA: 20 mg/m ³ ; STEL: 10 ppm (value calculated); STEL: 30 mg/m ³ (value calculated); Sk	TWA-NDS: 200 mg/m ³ ; STEL-NDSCh: 400 mg/m ³ ; Sk
Titanium dioxide 13463-67-7	-	-	-	TWA: 5 mg/m ³ ; STEL: 10 mg/m ³ (value calculated);	TWA-NDS: 10 mg/m ³ ; inhalable fraction STEL-NDSCh: 30 mg/m ³ ;
Chemical name	Portugal	Romania	Slovakia	Slovenia	Spain
Toluene 108-88-3	TWA (VLE-MP): 50 ppm; TWA (VLE-MP): 192 mg/m ³ ; STEL (VLE-CD): 100 ppm; STEL (VLE-CD): 384 mg/m ³ ; pSk	TWA: 50 ppm; TWA: 192 mg/m ³ ; STEL: 100 ppm; STEL: 384 mg/m ³ ; Sk	TWA: 50 ppm; TWA: 192 mg/m ³ ; Ceiling: 384 mg/m ³ ; pSk	TWA: 50 ppm; TWA: 192 mg/m ³ ; STEL: 100 ppm; STEL: 384 mg/m ³ ; pSk	TWA-(VLA-ED): 50 ppm; TWA-(VLA-ED): 192 mg/m ³ ; STEL (VLA-EC): 100 ppm; STEL (VLA-EC): 384 mg/m ³ ; pSk
m-Xylene 108-38-3	TWA (VLE-MP): 50 ppm; TWA (VLE-MP): 221 mg/m ³ ; STEL (VLE-CD): 100 ppm; STEL (VLE-CD): 442 mg/m ³ ; pSk	TWA: 50 ppm; TWA: 221 mg/m ³ ; STEL: 100 ppm; STEL: 442 mg/m ³ ; Sk	TWA: 50 ppm; TWA: 221 mg/m ³ ; Ceiling: 442 mg/m ³ ; pSk	TWA: 50 ppm; TWA: 221 mg/m ³ ; STEL: 100 ppm; STEL: 442 mg/m ³ ; pSk	TWA-(VLA-ED): 50 ppm; TWA-(VLA-ED): 221 mg/m ³ ; STEL (VLA-EC): 100 ppm; STEL (VLA-EC): 442 mg/m ³ ; pSk
p-Xylene 106-42-3	TWA (VLE-MP): 50 ppm; TWA (VLE-MP): 221 mg/m ³ ; STEL (VLE-CD): 100 ppm; STEL (VLE-CD):	TWA: 50 ppm; TWA: 221 mg/m ³ ; STEL: 100 ppm; STEL: 442 mg/m ³ ; Sk	TWA: 50 ppm; TWA: 221 mg/m ³ ; Ceiling: 442 mg/m ³ ; pSk	TWA: 50 ppm; TWA: 221 mg/m ³ ; STEL: 100 ppm; STEL: 442 mg/m ³ ; pSk	TWA-(VLA-ED): 50 ppm; TWA-(VLA-ED): 221 mg/m ³ ; STEL (VLA-EC): 100 ppm; STEL (VLA-EC):

	442 mg/m ³ ; pSk				442 mg/m ³ ; pSk
o-Xylene 95-47-6	TWA (VLE-MP): 50 ppm; TWA (VLE-MP): 221 mg/m ³ ; STEL (VLE-CD): 100 ppm; STEL (VLE-CD): 442 mg/m ³ ; pSk	TWA: 50 ppm; TWA: 221 mg/m ³ ; STEL: 100 ppm; STEL: 442 mg/m ³ ; Sk	TWA: 50 ppm; TWA: 221 mg/m ³ ; Ceiling: 442 mg/m ³ ; pSk	TWA: 50 ppm; TWA: 221 mg/m ³ ; STEL: 100 ppm; STEL: 442 mg/m ³ ; pSk	TWA-(VLA-ED): 50 ppm; TWA-(VLA-ED): 221 mg/m ³ ; STEL (VLA-EC): 100 ppm; STEL (VLA-EC): 442 mg/m ³ ; pSk
Chemical name	Portugal	Romania	Slovakia	Slovenia	Spain
Ethylbenzene 100-41-4	TWA (VLE-MP): 100 ppm; TWA (VLE-MP): 442 mg/m ³ ; STEL (VLE-CD): 200 ppm; STEL (VLE-CD): 884 mg/m ³ ; pSk	TWA: 100 ppm; TWA: 442 mg/m ³ ; STEL: 200 ppm; STEL: 884 mg/m ³ ; Sk	TWA: 100 ppm; TWA: 442 mg/m ³ ; Ceiling: 884 mg/m ³ ; pSk	TWA: 100 ppm; TWA: 442 mg/m ³ ; STEL: 200 ppm; STEL: 884 mg/m ³ ; pSk	TWA-(VLA-ED): 100 ppm; TWA-(VLA-ED): 441 mg/m ³ ; STEL (VLA-EC): 200 ppm; STEL (VLA-EC): 884 mg/m ³ ; pSk
Titanium dioxide 13463-67-7	TWA (VLE-MP): 10 mg/m ³ ;	TWA: 10 mg/m ³ ; STEL: 15 mg/m ³ ;	TWA: 5 mg/m ³ ;	-	TWA-(VLA-ED): 10 mg/m ³ ;
Chemical name	Sweden		Switzerland		United Kingdom
Toluene 108-88-3	TLV-NGV: 50 ppm; TLV-NGV: 192 mg/m ³ ; STEL (Bindande KGV): 100 ppm; STEL (Bindande KGV): 384 mg/m ³ ; Sk		TWA-MAK: 50 ppm; TWA-MAK: 190 mg/m ³ ; STEL-KZGW: 200 ppm; STEL-KZGW: 760 mg/m ³ ; Sk		TWA: 50 ppm; TWA: 191 mg/m ³ ; STEL: 100 ppm; STEL: 384 mg/m ³ ; pSk
m-Xylene 108-38-3	TLV-NGV: 50 ppm; TLV-NGV: 221 mg/m ³ ; STEL (Bindande KGV): 100 ppm; STEL (Bindande KGV): 442 mg/m ³ ; Sk		-		TWA: 50 ppm; TWA: 220 mg/m ³ ; STEL: 100 ppm; STEL: 441 mg/m ³ ; pSk
p-Xylene 106-42-3	TLV-NGV: 50 ppm; TLV-NGV: 221 mg/m ³ ; STEL (Bindande KGV): 100 ppm; STEL (Bindande KGV): 442 mg/m ³ ; Sk		-		TWA: 50 ppm; TWA: 220 mg/m ³ ; STEL: 100 ppm; STEL: 441 mg/m ³ ; pSk
o-Xylene 95-47-6	TLV-NGV: 50 ppm; TLV-NGV: 221 mg/m ³ ; STEL (Bindande KGV): 100 ppm; STEL (Bindande KGV): 442 mg/m ³ ; Sk		-		TWA: 50 ppm; TWA: 220 mg/m ³ ; STEL: 100 ppm; STEL: 441 mg/m ³ ; pSk

Ethylbenzene 100-41-4	TLV-NGV: 50 ppm; TLV-NGV: 220 mg/m ³ ; STEL (Bindande KGV): 200 ppm; STEL (Bindande KGV): 884 mg/m ³ ; Sk	TWA-MAK: 50 ppm; TWA-MAK: 220 mg/m ³ ; STEL-KZGW: 50 ppm; STEL-KZGW: 220 mg/m ³ ; Sk	TWA: 100 ppm; TWA: 441 mg/m ³ ; STEL: 125 ppm; STEL: 552 mg/m ³ ; pSk
Titanium dioxide 13463-67-7	TLV-NGV: 5 mg/m ³ ; total dust	TWA-MAK: 3 mg/m ³ ; respirable dust	TWA: 10 mg/m ³ ; total inhalable TWA: 4 mg/m ³ ; respirable STEL: 30 mg/m ³ ; total inhalable STEL: 12 mg/m ³ ; respirable

**Biological occupational exposure
limits**

Chemical name	European Union	Austria	Bulgaria	Croatia	Czech Republic
Toluene 108-88-3	-	10 g/dL Hemoglobin - blood (Blood count) - by the first screening and once yearly 12 g/dL Hemoglobin - blood (Blood count) - by the first screening and once yearly 3.2 million/ μ L Erythrocytes - blood (Blood count) - by the first screening and once yearly 3.8 million/ μ L Erythrocytes - blood (Blood count) - by the first screening and once yearly 4000 Leukocytes/ μ L - blood (Blood count) - by the first screening and once yearly 13000 Leukocytes/ μ L - blood (Blood count) - by the first screening and once yearly 130000 Thrombocytes/ μ L - blood (Blood count) - by the first screening and once yearly	1.6 mmol/mmol Creatinine - urine (Hippuric acid) - at the end of exposure or end of work shift	1.0 mg/L - blood (Toluene) - at the end of the work shift 20 ppm - final exhaled air (Toluene) - during exposure 2.50 g/g Creatinine - urine (Hippuric acid) - at the end of the work shift 1.0 mg/g Creatinine - urine (o-Cresol) - at the end of the work shift	1.6 μ mol/mmol Creatinine (urine - o- Cresol end of shift) 1000 μ mol/mmol Creatinine (urine - Hippuric acid end of shift) 1.5 mg/g Creatinine (urine - o-Cresol end of shift) 1600 mg/g Creatinine (urine - Hippuric acid end of shift)

		150000 Thrombocytes/ μ L - blood (Blood count) - by the first screening and once yearly 0.8 mg/L - urine (o-Cresol) - after end of work day, at the end of a work week/end of the shift			
Chemical name	European Union	Austria	Bulgaria	Croatia	Czech Republic
Ethylbenzene 100-41-4	-	-	2000 mg/g Creatinine - urine (Mandelic acid and Phenylglyoxylic acid - total) - at the end of exposure or end of work shift	1.50 mg/L - blood (Ethylbenzene) - during exposure 1.50 g/g Creatinine - urine (Mandelic acid) - at the end of the work shift and at the end of the working week	1100 μ mol/mmol Creatinine (urine - Mandelic acid end of shift) 1500 mg/g Creatinine (urine - Mandelic acid end of shift)
Chemical name	Denmark	Finland	France	Germany DFG	Germany TRGS
Toluene 108-88-3	-	500 nmol/L (blood - Toluene in the morning after a working day)	20 μ g/L - blood (Toluene) - end of workweek - urine (Hippuric acid) - end of shift	600 μ g/L (whole blood - Toluene immediately after exposure) 75 μ g/L (urine - Toluene end of exposure or shift) 1.5 mg/L (urine - o-Cresol (after hydrolysis) at the end of the shift, in case of long-term exposure after several previous shifts) 600 μ g/L - BAT (immediately after exposure) blood 75 μ g/L - BAT (end of exposure or end of shift) urine 1.5 mg/L - BAT (end of exposure or end of shift) urine	600 μ g/L (whole blood - Toluene immediately after exposure) 75 μ g/L (urine - Toluene end of exposure or shift) 1.5 mg/L (urine - o-Cresol (after hydrolysis) at the end of the shift, in case of long-term exposure after several previous shifts)
m-Xylene 108-38-3	-	-	- urine (Methylhippuric acid) - end of shift	-	-
p-Xylene 106-42-3	-	-	- urine (Methylhippuric acid) - end of shift	-	-
o-Xylene	-	-	- urine	-	-

95-47-6			(Methylhippuric acid) - end of shift		
Chemical name	Denmark	Finland	France	Germany DFG	Germany TRGS
Ethylbenzene 100-41-4	-	5.2 mmol/L (urine - Mandelic acid after the shift after a working week or exposure period)	- urine (Mandelic acid) - end of shift at end of workweek	250 mg/g Creatinine (urine - Mandelic acid plus Phenylglyoxylic acid end of exposure or shift) 250 mg/g Creatinine - BAT (end of exposure or end of shift) urine 130 mg/g Creatinine - (end of exposure or end of shift) - urine 250 mg/g Creatinine - (end of exposure or end of shift) - urine 330 mg/g Creatinine - (end of exposure or end of shift) - urine 670 mg/g Creatinine - (end of exposure or end of shift) - urine 1300 mg/g Creatinine - (end of exposure or end of shift) - urine	250 mg/g Creatinine (urine - Mandelic acid plus Phenylglyoxylic acid end of exposure or shift)
Chemical name	Hungary	Ireland	Italy MDLPS	Italy AIDII	
Toluene 108-88-3	1 mg/g Creatinine (urine - o-Cresol end of shift) 1 µmol/mmol Creatinine (urine - o-Cresol end of shift)	0.02 mg/L (blood - Toluene prior to last shift of workweek) 0.03 mg/L (urine - Toluene end of shift) 0.3 mg/g Creatinine (urine - o-Cresol end of shift)	-	0.3 mg/g Creatinine - urine (o-Cresol (with hydrolysis)) - end of shift 0.03 mg/L - urine (Toluene) - end of shift 0.02 mg/L - blood (Toluene) - prior to last shift of workweek	
m-Xylene 108-38-3	-	-	-	1.5 g/g Creatinine - urine (Methylhippuric acids) -	

				end of shift
p-Xylene 106-42-3	-	-	-	1.5 g/g Creatinine - urine (Methylhippuric acids) - end of shift
o-Xylene 95-47-6	-	-	-	1.5 g/g Creatinine - urine (Methylhippuric acids) - end of shift
Ethylbenzene 100-41-4	1500 mg/g Creatinine (urine - Mandelic acid at end of workweek, end of shift) 1110 µmol/mmol Creatinine (urine - Mandelic acid at end of workweek, end of shift)	0.7 g/g Creatinine (urine - sum of Mandelic acid and Phenylglyoxylic acid end of shift at end of workweek) 0.7 g (end-exhaled air - not critical)	-	0.15 g/g Creatinine - urine (Sum of Mandelic acid and Phenylglyoxylic acid) - end of shift at end of workweek
Chemical name	Latvia	Luxembourg	Romania	Slovakia
Toluene 108-88-3	600 µg/L - blood (Toluene) - at the end of exposure 75 µg/L - urine (Toluene) - end of shift 1.5 mg/L - urine (o- Cresol) - at the end of exposure or shift	-	2 g/L - urine (Hippuric acid) - end of shift 3 mg/L - urine (o-Cresol) - end of shift	600 µg/L (blood - Toluene end of exposure or work shift) 1.5 mg/L (urine - o-Cresol after all work shifts) 1.5 mg/L (urine - o-Cresol end of exposure or work shift) 2401 mg/g creatinine (- Hippuric acid end of exposure or work shift)
Ethylbenzene 100-41-4	-	-	1.5 g/g Creatinine - urine (Mandelic acid) - end of work week	12 mg/L (urine - 2 and 4- Ethylphenol end of exposure or work shift) 1600 mg/L (urine - Mandelic acid and acid Phenylglyoxyl end of exposure or work shift)
Chemical name	Slovenia	Spain	Switzerland	United Kingdom
Toluene 108-88-3	600 µg/L - blood (Toluene) - immediately after exposure 1.5 mg/L - urine (o-Cresol (after hydrolysis)) - at the end of the work shift; for long-term exposure: at the end of the work shift after several consecutive workdays 75 µg/L - urine (Toluene) - at the end of the work shift	0.6 mg/L (urine - o-Cresol end of shift) 0.05 mg/L (blood - Toluene start of last shift of workweek) 0.08 mg/L (urine - Toluene end of shift)	600 µg/L (whole blood - Toluene end of shift) 6.48 µmol/L (whole blood - Toluene end of shift) 2 g/g creatinine (urine - Hippuric acid end of shift, and after several shifts (for long-term exposures)) 1.26 mmol/mmol creatinine (urine - Hippuric acid end of shift, and after several shifts (for long-term exposures)) 0.5 mg/L (urine - o-Cresol end of shift, and after several shifts (for long- term exposures)) 4.62 µmol/L (urine - o- Cresol end of shift, and after several shifts (for	-

			long-term exposures)) 75 µg/L (urine - Toluol end of shift)	
m-Xylene 108-38-3	-	-	-	650 mmol/mol creatinine - urine (Methyl hippuric acid) - post shift
p-Xylene 106-42-3	-	-	-	650 mmol/mol creatinine - urine (Methyl hippuric acid) - post shift
o-Xylene 95-47-6	-	-	-	650 mmol/mol creatinine - urine (Methyl hippuric acid) - post shift
Ethylbenzene 100-41-4	250 mg/g Creatinine - urine (Mandelic acid and Phenylglyoxylic acid) - at the end of the work shift	700 mg/g Creatinine (urine - Mandelic acid plus Phenylglyoxylic acid end of workweek)	600 mg/g creatinine (urine - Mandelic acid and Phenylglyoxylacid end of shift)	-

Derived No Effect Level (DNEL) - Workers

Chemical name	Oral	Dermal	Inhalation
Toluene 108-88-3	-	150 mg/kg bw/day [4] [6] 0.188 mg/cm ² [5] [6]	75.37 mg/m ³ [4] [6] 377 mg/m ³ [4] [7] 75.37 mg/m ³ [5] [6] 377 mg/m ³ [5] [7]
m-Xylene 108-38-3	-	212 mg/kg bw/day [4] [6]	221 mg/m ³ [4] [6] 442 mg/m ³ [4] [7] 221 mg/m ³ [5] [6] 442 mg/m ³ [5] [7]
Ethylbenzene 100-41-4	-	180 mg/kg bw/day [4] [6]	77 mg/m ³ [4] [6] 293 mg/m ³ [5] [7]
p-Xylene 106-42-3	-	212 mg/kg bw/day [4] [6]	221 mg/m ³ [4] [6] 442 mg/m ³ [4] [7] 221 mg/m ³ [5] [6] 442 mg/m ³ [5] [7]

Notes

- [4] Systemic health effects.
 [5] Local health effects.
 [6] Long term.
 [7] Short term.

Derived No Effect Level (DNEL) - General Public

Chemical name	Oral	Dermal	Inhalation
Toluene 108-88-3	2.69 mg/kg bw/day [4] [6]	0.1 mg/cm ² [5] [6]	18.9 mg/m ³ [4] [6] 188.5 mg/m ³ [4] [7] 18.9 mg/m ³ [5] [6] 188.5 mg/m ³ [5] [7]
m-Xylene 108-38-3	2.5 mg/kg bw/day [4] [6]	-	65.3 mg/m ³ [4] [6] 260 mg/m ³ [4] [7] 65.3 mg/m ³ [5] [6] 260 mg/m ³ [5] [7]
Ethylbenzene 100-41-4	1.6 mg/kg bw/day [4] [6]	-	15 mg/m ³ [4] [6]
p-Xylene 106-42-3	2.5 mg/kg bw/day [4] [6]	-	65.3 mg/m ³ [4] [6] 260 mg/m ³ [4] [7] 65.3 mg/m ³ [5] [6]

Chemical name	Oral	Dermal	Inhalation
			260 mg/m ³ [5] [7]

Notes

- [4] Systemic health effects.
- [5] Local health effects.
- [6] Long term.
- [7] Short term.

Predicted No Effect Concentration (PNEC)

Chemical name	Freshwater	Freshwater (intermittent release)	Marine water	Marine water (intermittent release)	Air
m-Xylene 108-38-3	0.044 mg/L	0.01 mg/L	0.0044 mg/L	0.001 mg/L	-
Ethylbenzene 100-41-4	0.02 g/kg food 0.1 mg/L	0.1 mg/L	0.02 g/kg food 0.01 mg/L	-	-
p-Xylene 106-42-3	0.044 mg/L	0.01 mg/L	0.0044 mg/L	0.001 mg/L	-

Chemical name	Freshwater sediment	Marine sediment	Sewage treatment	Soil	Food chain
m-Xylene 108-38-3	2.52 mg/kg sediment dw	0.252 mg/kg sediment dw	1.6 mg/L	0.852 mg/kg soil dw	-
Ethylbenzene 100-41-4	13.7 mg/kg sediment dw	1.37 mg/kg sediment dw	9.6 mg/L	2.68 mg/kg soil dw	-
p-Xylene 106-42-3	2.52 mg/kg sediment dw	0.252 mg/kg sediment dw	1.6 mg/L	0.852 mg/kg soil dw	-

8.2. Exposure controls

- Engineering controls** No information available.
- Personal Protective Equipment**
- Eye/face protection** Tight sealing safety goggles.
- Hand protection** Wear suitable gloves.
- Skin and body protection** Wear suitable protective clothing. Long sleeved clothing. Antistatic boots. Chemical resistant apron. Wear fire/flame resistant/retardant clothing.
- Respiratory protection** Use appropriate respiratory protection.
- General hygiene considerations** Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Wear suitable gloves and eye/face protection.
- Environmental exposure controls** No information available.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state Liquid

Appearance	Clear, colorless liquid
Colour	Colourless
Odour	Smells like Toluene.
Odour Threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
Melting point / freezing point	No data available	
Initial boiling point and boiling range	No data available	
Flammability (Solid, Gas)	No data available	
Flammability Limit in Air		
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Flash point	No data available	
<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
Autoignition temperature	No data available	
Decomposition temperature		
pH	No data available	
pH (as aqueous solution)	No data available	
Kinematic viscosity	No data available	
Dynamic viscosity	No data available	
Water solubility	No data available	
Solubility(ies)	No data available	
Partition Coefficient	No data available	
Vapour Pressure	No data available	
Relative Density	No data available	
Bulk Density	No data available	
Liquid Density	No data available	
Relative vapour density	No data available	
Particle characteristics		
Particle Size	No information available	
Particle Size Distribution	No information available	

9.2. Other information

9.2.1. Information with regards to physical hazard classes

Not applicable

9.2.2. Other safety characteristics

No information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity No information available.

10.2. Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge Yes.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

10.4. Conditions to avoid

Conditions to avoid Heat, flames and sparks.

10.5. Incompatible materials

Incompatible materials Strong acids. Strong bases. Strong oxidising agents.

10.6. Hazardous decomposition products

Hazardous Decomposition Products None known based on information supplied.

SECTION 11: Toxicological information

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

Information on likely routes of exposure

Product Information

Inhalation	Specific test data for the substance or mixture is not available. Aspiration into lungs can produce severe lung damage. May cause pulmonary edema. Pulmonary edema can be fatal. May cause irritation of respiratory tract. May cause drowsiness or dizziness. May be harmful if inhaled.
Eye contact	Specific test data for the substance or mixture is not available. May cause irritation.
Skin contact	Repeated exposure may cause skin dryness or cracking. Specific test data for the substance or mixture is not available. Causes skin irritation. (based on components).
Ingestion	Specific test data for the substance or mixture is not available. Potential for aspiration if swallowed. May cause lung damage if swallowed. Aspiration may cause pulmonary edema and pneumonitis. May be fatal if swallowed and enters airways. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Please see section 4 of this SDS for symptoms.

Acute toxicity

Numerical measures of toxicity

The following ATE values have been calculated for the mixture

ATEmix (oral)	11,077.00 mg/kg
ATEmix (dermal)	6,296.40 mg/kg
ATEmix (inhalation-vapour)	552.60 mg/L
ATEmix (inhalation-dust/mist)	7.32 mg/L

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Toluene	= 5000 mg/kg (Rat)	= 12000 mg/kg (Rabbit)	= 12.5 mg/L (Rat) 4 h

m-Xylene	= 5 g/kg (Rat)	= 12.18 g/kg (Rabbit)	= 27124 mg/m ³ (Rat) 4 h
p-Xylene	= 4029 mg/kg (Rat)	= 12126 mg/kg (Rabbit)	= 4740 ppm (Rat) 4 h
o-Xylene	= 3608 mg/kg (Rat)	= 14100 mg/kg (Rabbit)	= 4330 ppm (Rat) 6 h
Ethylbenzene	= 3500 mg/kg (Rat)	= 15400 mg/kg (Rabbit)	= 17.4 mg/L (Rat) 4 h
Titanium dioxide	> 2000 mg/kg (Rat)	-	> 5.09 mg/L (Rat) 4 h

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

Skin corrosion/irritation	Classification based on data available for ingredients. Causes skin irritation.
Serious eye damage/eye irritation	Not classified.
Respiratory or skin sensitisation	Not classified.
Germ cell mutagenicity	Not classified.
Carcinogenicity	Not classified.
Reproductive toxicity	Contains a known or suspected reproductive toxin. Classification based on data available for ingredients. Suspected of damaging fertility or the unborn child.

The table below indicates ingredients above the cut-off threshold considered as relevant which are listed as reproductive toxins.

Chemical name	European Union
Toluene	Repr. 2

STOT - single exposure	May cause drowsiness or dizziness.
STOT - repeated exposure	May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard	May be fatal if swallowed and enters airways.

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

Endocrine disrupting properties This product does not contain any known or suspected endocrine disruptors.

11.2.2. Other information

Other Adverse Effects No information available.

SECTION 12: Ecological information

12.1. Toxicity

Ecotoxicity Harmful to aquatic life with long lasting effects.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Toluene	EC50: >433mg/L (96h,	LC50: 15.22 - 19.05mg/L	EC50 = 19.7 mg/L 30 min	EC50: 5.46 - 9.83mg/L

	Pseudokirchneriella subcapitata) EC50: =12.5mg/L (72h, Pseudokirchneriella subcapitata)	(96h, Pimephales promelas) LC50: =12.6mg/L (96h, Pimephales promelas) LC50: 5.89 - 7.81mg/L (96h, Oncorhynchus mykiss) LC50: 14.1 - 17.16mg/L (96h, Oncorhynchus mykiss) LC50: =5.8mg/L (96h, Oncorhynchus mykiss) LC50: 11.0 - 15.0mg/L (96h, Lepomis macrochirus) LC50: =54mg/L (96h, Oryzias latipes) LC50: =28.2mg/L (96h, Poecilia reticulata) LC50: 50.87 - 70.34mg/L (96h, Poecilia reticulata)		(48h, Daphnia magna) EC50: =11.5mg/L (48h, Daphnia magna)
m-Xylene	EC50: =4.9mg/L (72h, Pseudokirchneriella subcapitata)	LC50: 14.3 - 18mg/L (96h, Pimephales promelas) LC50: =8.4mg/L (96h, Oncorhynchus mykiss) LC50: =12.9mg/L (96h, Poecilia reticulata)	-	EC50: 2.81 - 5.0mg/L (48h, Daphnia magna)
p-Xylene	EC50: =3.2mg/L (72h, Pseudokirchneriella subcapitata)	LC50: 7.2 - 9.9mg/L (96h, Pimephales promelas) LC50: =2.6mg/L (96h, Oncorhynchus mykiss) LC50: =8.8mg/L (96h, Poecilia reticulata)	EC50 = 5.7 mg/L 30 min	EC50: 3.55 - 6.31mg/L (48h, Daphnia magna)
o-Xylene	EC50: =4.7mg/L (72h, Pseudokirchneriella subcapitata)	LC50: 11.6 - 22.4mg/L (96h, Pimephales promelas) LC50: 11.6 - 22.4mg/L (96h, Lepomis macrochirus) LC50: 5.59 - 11.6mg/L (96h, Oncorhynchus mykiss) LC50: =12mg/L (96h, Poecilia reticulata)	-	EC50: =3.2mg/L (48h, Daphnia magna) EC50: 2.61 - 5.59mg/L (48h, Daphnia magna) EC50: 0.78 - 2.51mg/L (48h, Daphnia magna)
Ethylbenzene	EC50: =4.6mg/L (72h, Pseudokirchneriella subcapitata) EC50: >438mg/L (96h, Pseudokirchneriella subcapitata) EC50: 2.6 - 11.3mg/L (72h, Pseudokirchneriella subcapitata) EC50: 1.7 - 7.6mg/L (96h, Pseudokirchneriella subcapitata)	LC50: 11.0 - 18.0mg/L (96h, Oncorhynchus mykiss) LC50: =4.2mg/L (96h, Oncorhynchus mykiss) LC50: 7.55 - 11mg/L (96h, Pimephales promelas) LC50: =32mg/L (96h, Lepomis macrochirus) LC50: 9.1 - 15.6mg/L (96h, Pimephales promelas) LC50: =9.6mg/L (96h,	EC50 = 9.68 mg/L 30 min EC50 = 96 mg/L 24 h	EC50: 1.8 - 2.4mg/L (48h, Daphnia magna)

		Poecilia reticulata)	
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12.2. Persistence and degradability

Persistence/Degradability No information available.

12.3. Bioaccumulative potential

Bioaccumulation

Component Information

Chemical name	Partition coefficient
Toluene	2.73
m-Xylene	3.2
p-Xylene	3.2
Chemical name	Partition coefficient
o-Xylene	3.12
Ethylbenzene	3.6

12.4. Mobility in soil

Mobility in Soil No information available.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment The product does not contain any substance(s) classified as PBT or vPvB.

Chemical name	PBT and vPvB assessment
Toluene	Not PBT/vPvB
m-Xylene	Not PBT/vPvB
p-Xylene	Not PBT/vPvB
o-Xylene	Not PBT/vPvB
Ethylbenzene	Not PBT/vPvB
Titanium dioxide	Not PBT/vPvB

12.6. Endocrine disrupting properties

Endocrine disrupting properties No information available.

12.7. Other adverse effects

No information available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste from residues/unused products Should not be released into the environment. Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Empty containers pose a potential fire and explosion hazard. Do not cut, puncture or weld containers.

SECTION 14: Transport information

IMDG

14.1 UN number or ID number UN1263
 14.2 Proper Shipping Name Paint
 14.3 Transport hazard class(es) 3
 14.4 Packing Group II
 14.5 Marine Pollutant This material may meet the definition of a marine pollutant

RID

14.1 UN number or ID number UN1263
 14.2 Proper Shipping Name Paint
 14.3 Transport hazard class(es) 3
 14.4 Packing Group II

ADR

14.1 UN number or ID number UN1263
 14.2 Proper Shipping Name Paint
 14.3 Transport hazard class(es) 3
 14.4 Packing Group II

IATA

14.1 UN number or ID number UN1263
 14.2 Proper Shipping Name Paint
 14.3 Transport hazard class(es) 3
 14.4 Packing group II

SECTION 15: Regulatory information

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

National regulations

France

Occupational Illnesses (R-463-3, France)

Chemical name	French RG number
Toluene 108-88-3	RG 4bis, RG 84
m-Xylene 108-38-3	RG 4bis, RG 84
p-Xylene 106-42-3	RG 4bis, RG 84
o-Xylene 95-47-6	RG 4bis, RG 84
Ethylbenzene 100-41-4	RG 84

Netherlands

Chemical name	Netherlands - List of Carcinogens	Netherlands - List of Mutagens	Netherlands - List of Reproductive Toxins
Toluene	-	-	Development Category 2

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

Authorisations and/or restrictions on use:

This product contains one or more substance(s) subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Chemical name	Restricted substance per REACH Annex XVII	Substance subject to authorisation per REACH Annex XIV
Toluene - 108-88-3	48	-
m-Xylene - 108-38-3	75	-
p-Xylene - 106-42-3	75	-
o-Xylene - 95-47-6	75	-
Titanium dioxide - 13463-67-7	75	-

Persistent Organic Pollutants

Not applicable

Dangerous substance category per Seveso Directive (2012/18/EU)

P5a - FLAMMABLE LIQUIDS

P5b - FLAMMABLE LIQUIDS

P5c - FLAMMABLE LIQUIDS

Ozone-depleting substances (ODS) regulation (EC) 2024/590

Not applicable

International Inventories

Chemical name	TSCA	DSL/NDSL	EINECS/ELINCS	PICCS	ENCS	IECSC	AIIC	KECL
Toluene 108-88-3 (10-30)	X	X	X	X	X	X	X	X
m-Xylene 108-38-3 (5-10)	X	X	X	X	X	X	X	X
p-Xylene 106-42-3 (1-5)	X	X	X	X	X	X	X	X
o-Xylene 95-47-6 (1-5)	X	X	X	X	X	X	X	X
Ethylbenzene 100-41-4 (1-5)	X	X	X	X	X	X	X	X
Titanium dioxide 13463-67-7 (0.1-1)	X	X	X	X	X	X	X	X

International Inventories

TSCA

Contact supplier for inventory compliance status

DSL/NDSL

Contact supplier for inventory compliance status

EINECS/ELINCS

Contact supplier for inventory compliance status

ENCS

Contact supplier for inventory compliance status

IECSC

Contact supplier for inventory compliance status

KECL

Contact supplier for inventory compliance status

PICCS

Contact supplier for inventory compliance status

AIIC

Contact supplier for inventory compliance status

NZIoC

Contact supplier for inventory compliance status

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing Chemicals Inventory
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals

15.2. Chemical safety assessment

Chemical Safety Report No information available

SECTION 16: Other information

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of any hazard and/or precautionary statements referred to under Sections 2-15

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
 H332 - Harmful if inhaled
 H336 - May cause drowsiness or dizziness
 H361d - Suspected of damaging the unborn child
 H373 - May cause damage to organs through prolonged or repeated exposure

Legend

SVHC: Substances of Very High Concern for Authorisation:

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
+	Sensitisers		

Classification procedure	
Classification according to Regulation (EC) No. 1272/2008 [CLP]	Method Used
Acute oral toxicity	Calculation method
Acute dermal toxicity	Calculation method
Acute inhalation toxicity - gas	On basis of test data
Acute inhalation toxicity - vapour	Calculation method
Acute inhalation toxicity - dust/mist	Calculation method
Skin corrosion/irritation	Calculation method
Serious eye damage/eye irritation	Calculation method
Respiratory sensitisation	Calculation method
Skin sensitisation	Calculation method
Mutagenicity	Calculation method
Carcinogenicity	Calculation method
Reproductive toxicity	Calculation method
STOT - single exposure	Calculation method
STOT - repeated exposure	Calculation method
Chronic aquatic toxicity	Calculation method
Acute aquatic toxicity	Calculation method

Aspiration hazard	Calculation method
Ozone	Calculation method
Flammable liquids	On basis of test data

Key literature references and sources for data used to compile the SDS

U.S. Agency for Toxic Substances and Disease Registry (ATSDR)
U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
European Chemicals Agency (ECHA) (ECHA_API)
U.S. Environmental Protection Agency
Acute Exposure Guideline Level(s) (AEGl(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
Japan National Institute of Technology and Evaluation (NITE)
Australian National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine's PubMed database (NLM PUBMED)
U.S. National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
International Organization for Economic Co-operation and Development (OECD) Environment, Health, and Safety Publications
International Organization for Economic Co-operation and Development (OECD) High Production Volume Chemicals Program
International Organization for Economic Co-operation and Development (OECD) Screening Information Data Set
United Nations World Health Organization (WHO)

Issue Date: 23-Apr-2026

Revision Date: 23-Apr-2026

Revision Note: New

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)

Disclaimer

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End of Safety Data Sheet