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

1.1. Product identifier

Trade name : Hydrogenated Pyrolysis Gasoline
CAS-No. : 68477-58-7

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

1.2.1. Relevant identified uses

Main use category : Industrial use, Professional use

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

QATAR PETROCHEMICAL COMPANY (QAPCO)

P.O. Box 756
DOHA
QATAR
T 00974 424 2444

1.4. Emergency telephone number

Emergency number : For Chemical Emergency Call CHEMTREC 24hr/day 7days/week
Within USA and Canada: 1-800-424-9300 CCN724450
Outside USA and Canada: +1 703-741-5970; +1 703-527-3887
(collect calls accepted)

Country/Area	Organisation/Company	Address	Emergency number	Comment
Ireland	National Poisons Information Centre Beaumont Hospital	PO Box 1297 Beaumont Road 9 Dublin	+353 1 809 2566 (Healthcare professionals-24/7) +353 1 809 2166 (public, 8am - 10pm, 7/7)	

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
Acute toxicity (oral), Category 4	H302
Skin corrosion/irritation, Category 2	H315
Serious eye damage/eye irritation, Category 2	H319
Germ cell mutagenicity, Category 1B	H340
Carcinogenicity, Category 1A	H350
Reproductive toxicity, Category 2	H361
Specific target organ toxicity – Single exposure, Category 3, Narcosis	H336
Specific target organ toxicity – Repeated exposure, Category 1	H372

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Aspiration hazard, Category 1 H304
Hazardous to the aquatic environment – Chronic H412
Hazard, Category 3
Full text of H- and EUH-statements: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

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

Hazard pictograms (CLP)



Signal word

: Danger

Contains

: Hydrogenated Pyrolysis Gasoline consists of Benzene 40-70%, Toluene 2-10%, Ethyl benzene 0-5% and other mix of hydrocarbons having carbon numbers predominantly in the range of C6 through C10 and boiling in the range of approximately 3 °C to 194 °C (37 °F to 382 °F).]

Hazard statements (CLP)

: H225 - Highly flammable liquid and vapour.
H302 - Harmful if swallowed.
H304 - May be fatal if swallowed and enters airways.
H315 - Causes skin irritation.
H319 - Causes serious eye irritation.
H336 - May cause drowsiness or dizziness.
H340 - May cause genetic defects.
H350 - May cause cancer.
H361 - Suspected of damaging fertility or the unborn child.
H372 - Causes damage to organs through prolonged or repeated exposure.
H412 - Harmful to aquatic life with long lasting effects.
Precautionary statements (CLP)
: P201 - Obtain special instructions before use.
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 - Keep container tightly closed.
P260 - Do not breathe fume, gas, mist, spray, vapours.
P273 - Avoid release to the environment.
P280 - Wear protective gloves/protective clothing and eye/face protection.
P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER, a doctor.
P308+P313 - IF exposed or concerned: Get medical attention, medical advice.
P331 - Do NOT induce vomiting.
P391 - Collect spillage.
P403+P235 - Store in a well-ventilated place. Keep cool.

2.3. Other hazards

Other hazards

: Vapours may form explosive mixture with air. Results of PBT and vPvB assessment : Contains no PBT and/or vPvB substances ≥ 0.1% assessed in accordance with REACH Annex XIII.

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The substance is not included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Substance name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Distillates (petroleum), light distillate hydrotreating process, low-boiling; Low boiling point hydrogen treated naphtha; [A complex combination of hydrocarbons obtained by the distillation of products from the light distillate hydrotreating process. It consists of hydrocarbons having carbon numbers predominantly in the range of C6 through C9 and boiling in the range of approximately 3 °C to 194 °C (37 °F to 382 °F).]	CAS-No.: 68410-97-9 EC-No.: 270-093-2 EC Index: 649-332-00-3	100	Muta. 1B, H340 Carc. 1B, H350 Asp. Tox. 1, H304
benzene substance with national workplace exposure limit(s) (AT, BE, BG, CY, CZ, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IT, LT, LV, NL, PL, PT, RO, SE, SI, NO, CH, TR); substance with a Community workplace exposure limit	CAS-No.: 71-43-2 EC-No.: 200-753-7 EC Index: 601-020-00-8	< 70	Flam. Liq. 2, H225 Carc. 1A, H350 Muta. 1B, H340 STOT RE 1, H372 Asp. Tox. 1, H304 Eye Irrit. 2, H319 Skin Irrit. 2, H315
toluene substance with national workplace exposure limit(s) (AT, BE, BG, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GI, GR, HR, HU, IE, IT, LT, LU, LV, MT, NL, PL, PT, RO, SE, SI, SK, AL, IS, NO, MK, RS, CH, TR); substance with a Community workplace exposure limit	CAS-No.: 108-88-3 EC-No.: 203-625-9 EC Index: 601-021-00-3	< 25	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Repr. 2, H361d STOT SE 3, H336 STOT RE 2, H373 Asp. Tox. 1, H304
xylene substance with national workplace exposure limit(s) (AT, BE, BG, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GI, GR, HR, HU, IE, IT, LT, LU, LV, MT, NL, PL, PT, RO, SE, SI, SK, AL, IS, NO, MK, RS, CH, TR); substance with a Community workplace exposure limit	CAS-No.: 1330-20-7 EC-No.: 215-535-7 EC Index: 601-022-00-9	< 7	Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation), H332 (ATE=11 mg/l/4h) Acute Tox. 4 (Dermal), H312 (ATE=1100 mg/kg bodyweight) Skin Irrit. 2, H315

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Substance name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
ethylbenzene substance with national workplace exposure limit(s) (AT, BE, BG, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GI, GR, HR, HU, IE, IT, LT, LU, LV, MT, NL, PL, PT, RO, SE, SI, SK, AL, IS, NO, MK, RS, CH, TR); substance with a Community workplace exposure limit	CAS-No.: 100-41-4 EC-No.: 202-849-4 EC Index: 601-023-00-4	< 5	Flam. Liq. 2, H225 Acute Tox. 4 (Inhalation), H332 (ATE=17,4 mg/l/4h) STOT RE 2, H373 Asp. Tox. 1, H304
n-hexane substance with national workplace exposure limit(s) (AT, BE, BG, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GI, GR, HR, HU, IE, IT, LT, LU, LV, MT, NL, PL, PT, RO, SE, SI, SK, AL, IS, NO, MK, RS, CH, TR); substance with a Community workplace exposure limit	CAS-No.: 110-54-3 EC-No.: 203-777-6 EC Index: 601-037-00-0	< 4	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Repr. 2, H361f STOT SE 3, H336 STOT RE 2, H373 Asp. Tox. 1, H304 Aquatic Chronic 2, H411
Cyclopentane substance with national workplace exposure limit(s) (BE, DK, ES, FR, GR, IE, PT, CH)	CAS-No.: 287-92-3 EC-No.: 206-016-6 EC Index: 601-030-00-2	< 3	Flam. Liq. 2, H225 Aquatic Chronic 3, H412

Specific concentration limits:

Substance name	Product identifier	Specific concentration limits (%)
n-hexane	CAS-No.: 110-54-3 EC-No.: 203-777-6 EC Index: 601-037-00-0	(5 ≤ C < 100) STOT RE 2; H373

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

SECTION 4: First aid measures

4.1. Description of first aid measures

Additional advice	: First aider: Pay attention to self-protection!. Concerning personal protective equipment to use, see section 8. Never give anything by mouth to an unconscious person. In case of doubt or persistent symptoms, consult always a physician. Show this safety data sheet to the doctor in attendance.
Inhalation	: Remove casualty to fresh air and keep warm and at rest. In case of doubt or persistent symptoms, consult always a physician.
Skin contact	: Remove contaminated clothing and shoes. Gently wash with plenty of soap and water. In case of doubt or persistent symptoms, consult always a physician.
Eyes contact	: Rinse immediately carefully and thoroughly with eye-bath or water. Remove contact lenses, if present and easy to do. Continue rinsing. In case of doubt or persistent symptoms, consult always a physician.
Ingestion	: Rinse mouth thoroughly with water. Do NOT induce vomiting. Get immediate medical advice/attention.

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

Inhalation	: May cause drowsiness or dizziness.
Skin contact	: Causes skin irritation.
Eyes contact	: Causes serious eye irritation.
Ingestion	: May be fatal if swallowed and enters airways. Harmful if swallowed.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : carbon dioxide (CO₂), powder, alcohol-resistant foam, water spray.

Unsuitable extinguishing media : Strong water jet.

5.2. Special hazards arising from the substance or mixture

Specific hazards : Highly flammable liquid and vapour. Heating will cause a rise in pressure with a risk of bursting. Vapours may form explosive mixture with air. Vapours are heavier than air and may travel considerable distance to an ignition source and flash back to source of vapours.

Hazardous decomposition products in case of fire : Toxic fumes may be released. Carbon oxides (CO, CO₂). aromatic hydrocarbons.

5.3. Advice for firefighters

Firefighting instructions : Evacuate area. Use water spray or fog for cooling exposed containers. Contain the extinguishing fluids by bunding. Prevent fire fighting water from entering the environment.

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus.

Other information : Do not allow run-off from fire-fighting to enter drains or water courses. Dispose of waste in accordance with environmental legislation.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

For non-emergency personnel : Evacuate unnecessary personnel. Keep upwind. Provide adequate ventilation. Wear recommended personal protective equipment. Concerning personal protective equipment to use, see section 8. Do not breathe vapours. Avoid contact with skin, eyes and clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ensure equipment is adequately earthed. Use explosion-proof equipment. Use only non-sparking tools.

6.1.2. For emergency responders

For emergency responders : Ensure procedures and training for emergency decontamination and disposal are in place. Concerning personal protective equipment to use, see section 8.

6.2. Environmental precautions

Do not allow to enter into surface water or drains. Notify authorities if product enters sewers or public waters.

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6.3. Methods and material for containment and cleaning up

Methods for cleaning up	: Stop leak if safe to do so. Dam up the liquid spill. Small quantities of liquid spill: take up in non-combustible absorbent material and shovel into container for disposal. Recover large spills by pumping (use an explosion proof or hand pump). Place in a suitable container for disposal in accordance with the waste regulations (see Section 13). This material and its container must be disposed of in a safe way, and as per local legislation. Cover the spilled liquid product with foam to slow down evaporation.
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6.4. Reference to other sections

Concerning personal protective equipment to use, see section 8. Concerning disposal elimination after cleaning, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	: Provide adequate ventilation. Use personal protective equipment as required. Concerning personal protective equipment to use, see section 8. Do not breathe vapours. Avoid contact with skin, eyes and clothing. Take any precaution to avoid mixing with Incompatible materials, Refer to Section 10 on Incompatible Materials. Ensure proper process control to avoid excess waste discharge (temperature, concentration, pH, time). Avoid release to the environment. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground/bond container and receiving equipment. Use explosion-proof equipment. Use only non-sparking tools.
Hygiene measures	: Keep good industrial hygiene. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Do not eat, drink or smoke when using this product. Keep away from food, drink and animal feedingstuffs. Remove contaminated clothes. Separate working clothes from town clothes. Launder separately. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	: Storage of flammable liquids. Store in a dry, cool and well-ventilated place. Do not store near or with any of the incompatible materials listed in section 10. Bund storage facilities to prevent soil and water pollution in the event of spillage. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharge.
Incompatible substances or mixtures	: Strong oxidizing agents.
Heat and ignition sources	: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Packaging materials	: Keep only in the original container.

Switzerland

Storage class (LK)	: LK 3 - Flammable liquids
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7.3. Specific end use(s)

No data available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

benzene (71-43-2)	
EU - Indicative Occupational Exposure Limit (IOEL)	
IOEL TWA	0,66 mg/m ³ (limit value after 5 April 2026) 1,65 mg/m ³ (limit value from 5 April 2024 until 5 April 2026) 3,25 mg/m ³ (limit value until 5 April 2024)
	0,2 ppm (limit value after 5 April 2026) 0,5 ppm (limit value from 5 April 2024 until 5 April 2026) 1 ppm (limit value until 5 April 2024)
Remark	Present (Substantial contribution to the total body burden via dermal exposure possible)
Austria - Occupational Exposure Limits	
TRK (OEL TWA)	3,2 mg/m ³ 1 ppm
OEL chemical category	Skin notation, Group A1 Carcinogen
Belgium - Occupational Exposure Limits	
OEL TWA	3,25 mg/m ³ 1 ppm
OEL chemical category	Skin, Carcinogen, Skin notation significant contribution to the total accumulation in the body through skin exposure is possible
Bulgaria - Occupational Exposure Limits	
OEL TWA	3,25 mg/m ³ 1 ppm
Bulgaria - Biological limit values	
BLV	2 mg/l Parameter: Trans, trans-Muconic acid - Medium: urine - Sampling time: at the end of exposure or end of work shift (possible significant absorption through the skin) 0,045 mg/g creatinine Parameter: S-Phenyl Mercapturic acid - Medium: urine - Sampling time: at the end of exposure or end of work shift (possible significant absorption through the skin)
Croatia - Occupational Exposure Limits	
GVI (OEL TWA)	3,25 mg/m ³ 1 ppm
OEL chemical category	Carcinogen Category 1A, Skin notation significant contribution to the total body load possible exposure through the skin, Mutagen Category 1B

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benzene (71-43-2)	
Croatia - Biological limit values	
BLV	28 µg/l Parameter: Benzene - Medium: blood - Sampling time: right at the end of the work shift 46 µg/g creatinine Parameter: S-Phenylmercapturic acid - Medium: urine - Sampling time: at the end of the work shift (calculated on the average Creatinine value of 1.2 g/L urine)
Cyprus - Occupational Exposure Limits	
OEL TWA	3,25 mg/m ³ 1 ppm
OEL chemical category	Skin-potential for cutaneous absorption
Czech Republic - Occupational Exposure Limits	
PEL (OEL TWA)	3 mg/m ³
OEL chemical category	Potential for cutaneous absorption
Czech Republic - Biological limit values	
BLV	0,024 µmol/mmol Creatinine Parameter: S-Phenylmercapturic acid - Medium: urine - Sampling time: end of shift 0,05 mg/g creatinine Parameter: S-Phenylmercapturic acid - Medium: urine - Sampling time: end of shift 1,2 µmol/mmol Creatinine Parameter: trans,trans-Muconic acid - Medium: urine - Sampling time: end of shift 1,5 mg/g creatinine Parameter: trans,trans-Muconic acid - Medium: urine - Sampling time: end of shift
Denmark - Occupational Exposure Limits	
OEL TWA	1,6 mg/m ³ 0,5 ppm
OEL STEL	3,2 mg/m ³ 1 ppm
OEL chemical category	Potential for cutaneous absorption
Estonia - Occupational Exposure Limits	
OEL TWA	1,5 mg/m ³ 0,5 ppm
OEL STEL	9 mg/m ³ 3 ppm
OEL chemical category	Skin notation, Carcinogenic substance
Finland - Occupational Exposure Limits	
HTP (OEL TWA)	3,25 mg/m ³ 1 ppm
OEL chemical category	Potential for cutaneous absorption
France - Occupational Exposure Limits	
VME (OEL TWA)	3,25 mg/m ³ (restrictive limit)

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benzene (71-43-2)	
	1 ppm (restrictive limit)
OEL chemical category	Carcinogen category 1A, Mutagen category 1B, Risk of cutaneous absorption
France - Biological limit values	
BLV	Parameter: Muconic acid - Medium: urine - Sampling time: end of shift (per the Authority, the values for this substance must be decided and/or determined on a case by case basis. Guidance for the calculation of and interpretation of values is provided in the source)
Germany - Occupational Exposure Limits (Generic OEL data)	
Akzeptanzkonzentration (TRGS 910)	Risk-related concept of measures for activities involving carcinogenic hazardous substances): 0,2 mg/m ³
Toleranzkonzentration (TRGS 910)	Risk-related concept of measures for activities involving carcinogenic hazardous substances): 1,9 mg/m ³
Greece - Occupational Exposure Limits	
OEL TWA	3,25 mg/m ³
	1 ppm
OEL chemical category	skin - potential for cutaneous absorption
Hungary - Occupational Exposure Limits	
AK (OEL TWA)	3,25 mg/m ³
OEL chemical category	Potential for cutaneous absorption, Carc. 1A - Known Carcinogen, Muta1B
Ireland - Occupational Exposure Limits	
OEL TWA	3,25 mg/m ³
	1 ppm
OEL STEL	9,75 mg/m ³ (calculated)
	3 ppm (calculated)
OEL chemical category	Carc1A, Potential for cutaneous absorption
Italy - Occupational Exposure Limits	
OEL TWA	3,25 mg/m ³
	1 ppm
OEL chemical category	skin - potential for cutaneous absorption
Latvia - Occupational Exposure Limits	
OEL TWA	3,25 mg/m ³
	1 ppm
OEL chemical category	skin - potential for cutaneous exposure
Latvia - Biological Exposure Indices	
BEI	46 µg/g creatinine Parameter: Phenol - Medium: urine - Sampling time: end of shift 28 µg/l Medium: blood - Sampling time: end of shift

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benzene (71-43-2)	
Lithuania - Occupational Exposure Limits	
IPRV (OEL TWA)	3,25 mg/m ³
	1 ppm
TPRV (OEL STEL)	19 mg/m ³
	6 ppm
OEL chemical category	Mutagen, Carcinogen, Skin notation
Netherlands - Occupational Exposure Limits	
TGG-8u (OEL TWA)	0,7 mg/m ³
	0,2 ppm
MAC chemical category	Skin notation
Poland - Occupational Exposure Limits	
NDS (OEL TWA)	1,6 mg/m ³
Portugal - Occupational Exposure Limits	
OEL TWA	3,25 mg/m ³ (indicative limit value)
	1 ppm (indicative limit value)
OEL STEL	2,5 ppm
OEL chemical category	A1 - Confirmed Human Carcinogen, skin - potential for cutaneous exposure
Romania - Occupational Exposure Limits	
OEL TWA	3,25 mg/m ³
	1 ppm
OEL chemical category	C1A, Skin notation it is possible that regulation regarding inhaling could be added to a dermal absorption
Romania - Biological limit values	
BLV	25 µg/g creatinine Parameter: S-Phenylmercapturic acid - Medium: urine - Sampling time: end of shift 500 µg/g creatinine Parameter: trans,trans-Muconic acid - Medium: urine - Sampling time: end of shift 50 mg/l Parameter: total Phenols - Medium: urine - Sampling time: end of shift
Slovenia - Occupational Exposure Limits	
OEL TWA	3,25 mg/m ³
	1 ppm
OEL chemical category	Category 1B, Category 1A, Potential for cutaneous absorption
Spain - Occupational Exposure Limits	
VLA-ED (OEL TWA)	3,25 mg/m ³ (manufacturing, commercialization and use restrictions according to REACH)
	1 ppm (manufacturing, commercialization and use restrictions according to REACH)
OEL chemical category	C1A, M1B, skin - potential for cutaneous absorption

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benzene (71-43-2)	
Spain - Biological limit values	
BLV	0,045 mg/g creatinine Parameter: S-Phenyl mercapturic acid - Medium: urine - Sampling time: end of exposure or end of shift 2 mg/l Parameter: trans, trans-Muconic acid - Medium: urine - Sampling time: end of exposure or end of shift
Sweden - Occupational Exposure Limits	
NGV (OEL TWA)	1,5 mg/m ³
	0,5 ppm
KGV (OEL STEL)	9 mg/m ³
	3 ppm
OEL chemical category	Skin notation, Carcinogen
United Kingdom - Occupational Exposure Limits	
WEL TWA (OEL TWA)	3,25 mg/m ³
	1 ppm
WEL STEL (OEL STEL)	9,75 mg/m ³ (calculated)
	3 ppm (calculated)
WEL chemical category	Potential for cutaneous absorption, Capable of causing cancer and/or heritable genetic damage
Norway - Occupational Exposure Limits	
Grenseverdi (OEL TWA)	0,66 mg/m ³
	0,2 ppm
Korttidsverdi (OEL STEL)	1,98 mg/m ³ (value calculated)
	0,6 ppm (value calculated)
OEL chemical category	Skin notation, Carcinogen, Potential mutagen
Switzerland - Occupational Exposure Limits	
MAK (OEL TWA)	0,7 mg/m ³
	0,2 ppm
OEL chemical category	Skin notation, Category C1A carcinogen, Category 1B mutagen
Switzerland - BAT	
BAT	8 µg/g creatinine Parameter: S-Phenyl-mercapturic acid - Medium: urine - Sampling time: end of shift Parameter: S-Phenyl-mercapturic acid - Medium: urine - Sampling time: end of shift
USA - ACGIH - Occupational Exposure Limits	
ACGIH OEL TWA	0,5 ppm
ACGIH OEL STEL	2,5 ppm
ACGIH chemical category	Confirmed Human Carcinogen, Skin - potential significant contribution to overall exposure by the cutaneous route

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benzene (71-43-2)	
USA - ACGIH - Biological Exposure Indices	
BEI	25 µg/g creatinine Parameter: S-Phenylmercapturic acid - Medium: urine - Sampling time: end of shift (background) 500 µg/g creatinine Parameter: t,t-Muconic acid - Medium: urine - Sampling time: end of shift (background)

toluene (108-88-3)	
EU - Indicative Occupational Exposure Limit (IOEL)	
Local name	Toluene
IOEL TWA	192 mg/m ³
	50 ppm
IOEL STEL	384 mg/m ³
	100 ppm
Remark	Possibility of significant uptake through the skin
Regulatory reference	COMMISSION DIRECTIVE 2006/15/EC
Albania - Occupational Exposure Limits	
Local name	Toluen
OEL TWA	192 mg/m ³
	50 ppm
OEL STEL	384 mg/m ³
	100 ppm
Remark	Lëkurë (tregon mundësinë e një marrjeje të rëndësishme nëpërmjet lëkurës)
Regulatory reference	VENDIM Nr. 522, datë 6.8.2014 PËR MIRATIMIN E RREGULLORES "PËR MBROJTJEN E SIGURISË DHE SHËNDETIT TË PUNËMARRËSVE NGA RISQET E LIDHURA ME AGJENTËT KIMIKË NË PUNË"

Austria - Occupational Exposure Limits	
Local name	Toluol
MAK (OEL TWA)	190 mg/m ³
	50 ppm
MAK (OEL STEL)	380 mg/m ³
	100 ppm
Remark	H. Fortpflanzungsgefährdend: d
OEL chemical category	Skin notation
Regulatory reference	BGBI. II Nr. 156/2021
Austria - Biological limit values	
Local name	Toluol

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toluene (108-88-3)	
BLV	10 g/dl Parameter: Hämoglobin - Untersuchungsmaterial: Blut - Mitarbeiter/innen: Frauen 12 g/dl Parameter: Hämoglobin - Untersuchungsmaterial: Blut - Mitarbeiter/innen: Männer 250 µg/l Parameter: Hämoglobin - Untersuchungsmaterial: Blut - Probenahmezeitpunkt: Bei wiederholt erhöhten o-Cresolwerten ist zusätzlich Toluol im Blut am Ende eines Arbeitstages zu bestimmen (der Zeitpunkt der Untersuchung ist anzugeben) 0,8 mg/l Parameter: o-Cresol - Untersuchungsmaterial: Harn
Remark	Eignung: Blut: Erythrozyten: 3,2 Millionen/µl für Frauen, 3,8 Millionen/µl für Männer; Leukozyten: unterer Grenzwert: 4.000/µl (davon 2.000 Granulozyten) bzw. 3.700/µl bei nicht pathologischem Differentialblutbild, oberer Grenzwert: 13.000/µl; Thrombozyten: 150.000 bzw. 130.000/µl bei nicht pathologischem Differentialblutbild Eignung mit vorzeitiger Folgeuntersuchung: Bei Unterschreiten bzw. Überschreiten der Grenzwerte im Blut (ausgenommen Differentialblutbild) oder im Harn sowie bei atypischen Morphologien im Blut. Der Zeitabstand zwischen den Untersuchungen beträgt bei Eignung: ein Jahr; bei Eignung mit vorzeitiger Folgeuntersuchung: drei Monate.
Regulatory reference	Verordnung über die Gesundheitsüberwachung am Arbeitsplatz 2017 (VGÜ 2017)
Belgium - Occupational Exposure Limits	
Local name	Toluène # Tolueen
OEL TWA	77 mg/m ³
	20 ppm
OEL STEL	384 mg/m ³
	100 ppm
Remark	D: la mention "D" signifie que la résorption de l'agent, via la peau, les muqueuses ou les yeux, constitue une partie importante de l'exposition totale. Cette résorption peut se faire tant par contact direct que par présence de l'agent dans l'air. # D: de vermelding "D" betekent dat de opname van het agens via de huid, de slijmvliezen of de ogen een belangrijk deel van de totale blootstelling vormt. Deze opname kan het gevolg zijn van zowel direct contact als zijn aanwezigheid in de lucht.
OEL chemical category	Skin, Skin notation
Regulatory reference	Koninklijk besluit/Arrêté royal 16/11/2023
Bulgaria - Occupational Exposure Limits	
Local name	Толуен
OEL TWA	192 mg/m ³
	50 ppm
OEL STEL	384 mg/m ³
	100 ppm
Remark	Кожа (възможна е значителна резорбция чрез кожата); • (Химични агенти, за които са определени гранични стойности във въздуха на работната среда за Европейската общност)

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toluene (108-88-3)	
Regulatory reference	Наредба № 13 от 30.12.2003 г. за защита на работещите от рискове, свързани с експозиция на химични агенти при работа (изм. и доп. ДВ. бр. 47 от 2021 г., в сила от 04.06.2021 г.)
Bulgaria - Biological limit values	
Local name	Толуен
BLV	1,6 mmol/mmol Creatinine Parameter: Hippuric acid - Medium: urine - Sampling time: at the end of exposure or end of work shift
Regulatory reference	Наредба № 13 от 30.12.2003 г. за защита на работещите от рискове, свързани с експозиция на химични агенти при работа (изм. и доп. ДВ. бр. 47 от 2021 г., в сила от 04.06.2021 г.)
Croatia - Occupational Exposure Limits	
Local name	Toluen
GVI (OEL TWA)	192 mg/m ³
	50 ppm
KGVI (OEL STEL)	384 mg/m ³
	100 ppm
Remark	Direktiva: 2006/15/EZ. Napomena: Koža (razvrstana kao tvar koja nadražuje kožu (H315))
OEL chemical category	Skin notation
Regulatory reference	Pravilnik o zaštiti radnika od izloženosti opasnim kemikalijama na radu, graničnim vrijednostima izloženosti i biološkim graničnim vrijednostima (NN 148/2023)
Croatia - Biological limit values	
Local name	Toluen
BLV	1 mg/l Parameter: Toluene - Medium: blood - Sampling time: at the end of the work shift 20 ppm Parameter: Toluene - Medium: final exhaled air - Sampling time: during exposure 2,5 g/g creatinine Parameter: Hippuric acid - Medium: urine - Sampling time: at the end of the work shift (calculated on the average Creatinine value of 1.2 g/L urine) 1 mg/g creatinine Parameter: o-Cresol - Medium: urine - Sampling time: at the end of the work shift (calculated on the average Creatinine value of 1.2 g/L urine)
Regulatory reference	Pravilnik o zaštiti radnika od izloženosti opasnim kemikalijama na radu, graničnim vrijednostima izloženosti i biološkim graničnim vrijednostima (NN 91/2018)
Cyprus - Occupational Exposure Limits	
Local name	Τολουόλιο
OEL TWA	192 mg/m ³
	50 ppm
OEL STEL	384 mg/m ³

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	100 ppm
OEL chemical category	Skin-potential for cutaneous absorption
Remark	δέρμα
Regulatory reference	Κανονισμοί του 2007 (Κ.Α.Π. 295/2007)
Czech Republic - Occupational Exposure Limits	
Local name	Toluen (Methylbenzen)
PEL (OEL TWA)	200 mg/m ³
	50 ppm
NPK-P (OEL C)	384 mg/m ³
	100 ppm
Remark	B - u látky je zaveden biologický expoziční test (BET) v moči nebo krvi, D - při expozici se významně uplatňuje pronikání faktoru kůže, I - dráždí sliznice (oči, dýchací cesty) resp. kůže, P - u látky nelze vyloučit závažné pozdní účinky (s větou H372, H373).
OEL chemical category	Potential for cutaneous absorption
Regulatory reference	Nařízení vlády č. 361/2007 Sb. (Předpis 330/2023 Sb.)
Czech Republic - Biological limit values	
Local name	Toluen (Methylbenzen)
BLV	1,6 μmol/mmol Creatinine Parameter: o-Cresol - Medium: urine - Sampling time: end of shift (after hydrolysis) 1000 μmol/mmol Creatinine Parameter: Hippuric acid - Medium: urine - Sampling time: end of shift (exposure testing using the o-Cresol parameter to precisely measure Toluene exposure is needed if the value of Hippuric acid is between 1600 and 2500 mg/g of Creatinine, no additional testing is needed if the Hippuric acid value is >2500 mg/g of Creatinine as work exposure to Toluene will have highly exceeded the PEL value.) 1,5 mg/g creatinine Parameter: o-Cresol - Medium: urine - Sampling time: end of shift (after hydrolysis) 1600 mg/g creatinine Parameter: Hippuric acid - Medium: urine - Sampling time: end of shift (exposure testing using the o-Cresol parameter to precisely measure Toluene exposure is needed if the value of Hippuric acid is between 1600 and 2500 mg/g of Creatinine, no additional testing is needed if the Hippuric acid value is >2500 mg/g of Creatinine as work exposure to Toluene will have highly exceeded the PEL value.)
Remark	Je-li hodnota při nálezu kyseliny hippurové vyšší než 1600 mg/g, avšak nepřesahuje 2500 mg/g kreatininu, použije se ke zpřesnění expozice toluenu biologický expoziční test podle ukazatele o-Kresol. Je-li hodnota při nálezu kyseliny hippurové vyšší než 2500 mg/g, považuje se za hodnotu prokazující, že jde o pracovní expozici toluenu, jehož hodnota PEL je překračována a biologický expoziční test podle ukazatele o-Kresol se již neprovádí.
Regulatory reference	Vyhláška č. 107/2013 Sb. (kterou se mění vyhláška č. 432/2003 Sb.)
Denmark - Occupational Exposure Limits	
Local name	Toluen (Methylbenzen; Phenylmethan)

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toluene (108-88-3)	
OEL TWA	94 mg/m ³
	25 ppm
OEL STEL	384 mg/m ³
	100 ppm
Remark	E (betyder, at stoffet har en EF-grænseværdi); H (betyder, at stoffet kan optages gennem huden)
OEL chemical category	Potential for cutaneous absorption
Regulatory reference	BEK nr 202 af 21/02/2023
Estonia - Occupational Exposure Limits	
Local name	Tolueen (metüülbenseen)
OEL TWA	192 mg/m ³
	50 ppm
OEL STEL	384 mg/m ³
	100 ppm
Remark	A (Naha kaudu kergesti imenduv aine)
OEL chemical category	Skin notation
Regulatory reference	Vabariigi Valitsuse 20. märtsi 2001. a määruse nr 105 (RT I, 21.12.2022, 3)
Finland - Occupational Exposure Limits	
Local name	Tolueeni
HTP (OEL TWA)	81 mg/m ³
	25 ppm
HTP (OEL STEL)	380 mg/m ³
	100 ppm
Remark	Iho, melu
OEL chemical category	Potential for cutaneous absorption
Regulatory reference	HTP-ARVOT 2020 (Sosiaali- ja terveysministeriö)
Finland - Biological limit values	
Local name	Tolueeni
BLV	500 nmol/L Parameter: Toluene - Medium: blood - Sampling time: in the morning after a working day
Regulatory reference	HTP-ARVOT 2020 (Sosiaali- ja terveysministeriö)
France - Occupational Exposure Limits	
Local name	Toluène
VME (OEL TWA)	76,8 mg/m ³ (restrictive limit)
	20 ppm (restrictive limit)
VLE (OEL C/STEL)	384 mg/m ³ (restrictive limit)

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	100 ppm (restrictive limit)
Remark	Valeurs réglementaires contraignantes. Toxique pour la reproduction de catégorie 2, Risque de pénétration percutanée
OEL chemical category	Reproductive Toxin category 2, Risk of cutaneous absorption
Regulatory reference	Article R4412-149 du Code du travail (réf.: INRS ED 6443, 2022; Outil65; Décret n° 2019-1487; Décret n° 2020-1546; Décret n° 2021-434; Décret n° 2021-1849)
France - Biological limit values	
BLV	20 µg/l Parameter: Toluene - Medium: blood - Sampling time: end of workweek (Semi-quantitative (ambiguous interpretation)) Parameter: Hippuric acid - Medium: urine - Sampling time: end of shift (per the Authority, the values for this substance must be decided and/or determined on a case by case basis. Guidance for the calculation of and interpretation of values is provided in the source)
Germany - Occupational Exposure Limits (TRGS 900)	
Local name	Toluol
Occupational exposure limit value (mg/m ³) (TRGS900)	190 mg/m ³ (the risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed)
Occupational exposure limit value (ppm) (TRGS900)	50 ppm (the risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed)
Peak exposure limitation factor	2(II)
Remark	DFG - Senatskommission zur Prüfung gesundheitsschädlicher Arbeitsstoffe der DFG (MAK-Kommission); EU - Europäische Union (Von der EU wurde ein Luftgrenzwert festgelegt: Abweichungen bei Wert und Spitzenbegrenzung sind möglich); H - hautresorptiv; Y - Ein Risiko der Fruchtschädigung braucht bei Einhaltung des Arbeitsplatzgrenzwertes und des biologischen Grenzwertes (BGW) nicht befürchtet zu werden
Chemical category	Skin notation
Regulatory reference	TRGS900
Germany - Biological limit values (TRGS 903)	
Local name	Toluol
Biological limit value	600 µg/l Parameter: Toluene - Medium: whole blood - Sampling time: immediately after exposure 75 µg/l Parameter: Toluene - Medium: urine - Sampling time: end of shift 1,5 mg/l Parameter: o-Cresol (after hydrolysis) - Medium: urine - Sampling time: for long-term exposures: at the end of the shift after several shifts 1,5 mg/l Parameter: o-Cresol (after hydrolysis) - Medium: urine - Sampling time: end of shift
Regulatory reference	TRGS 903
Gibraltar - Occupational Exposure Limits	
Local name	Toluene
OEL TWA	192 mg/m ³ 50 ppm

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OEL STEL	384 mg/m ³ 100 ppm
Remark	Skin
OEL chemical category	Skin notation
Regulatory reference	Factories (Control of Chemical Agents at Work) Regulations 2003 (LN. 2018/181)
Greece - Occupational Exposure Limits	
Local name	Τολουόλιο
OEL TWA	192 mg/m ³ 50 ppm
OEL STEL	384 mg/m ³ 100 ppm
OEL chemical category	skin - potential for cutaneous absorption
Remark	Η ένδειξη «δέρμα» στις οριακές τιμές επαγγελματικής έκθεσης επισημαίνει το ενδεχόμενο σημαντικής διείσδυσης μέσω του δέρματος.
Regulatory reference	Π.Δ. 162/2007 - Προστασία της υγείας των εργαζομένων που εκτίθενται σε ορισμένους χημικούς παράγοντες κατά τη διάρκεια της εργασίας τους
Hungary - Occupational Exposure Limits	
Local name	TOLUOL
AK (OEL TWA)	190 mg/m ³
CK (OEL STEL)	384 mg/m ³
Remark	b (Bőrön át is felszívódik), i (ingerlő anyag, amely izgatja a bőrt, nyálkahártyát, szemet vagy mindhármat); BEM (biológiai expozíciós mutató); EU2 (2006/15/EK irányelvben közölt érték); R+T (Azok az anyagok, amelyek RÖVID és TARTÓS expozíciója is egészségkárosodást okoz)
OEL chemical category	Potential for cutaneous absorption
Regulatory reference	5/2020. (II. 6.) ITM rendelet - A kémiai kóroki tényezők hatásának kitett munkavállalók egészségének és biztonságának védelméről
Hungary - Biological Exposure Indices	
Local name	Toluol
BEI	1 mg/g creatinine Biológiai expozíciós (hatás) mutató: o-krezol - Biológiai minta: vizeletben - Mintavétel ideje: m.v. (műszak végén) 1 µmol/mmol Creatinine Biológiai expozíciós (hatás) mutató: o-krezol - Biológiai minta: vizeletben - Mintavétel ideje: m.v. (műszak végén)
Regulatory reference	5/2020. (II. 6.) ITM rendelet - A kémiai kóroki tényezők hatásának kitett munkavállalók egészségének és biztonságának védelméről
Ireland - Occupational Exposure Limits	
Local name	Toluene
OEL TWA	192 mg/m ³ 50 ppm

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OEL STEL	384 mg/m ³ 100 ppm
Remark	Sk (Substances which have the capacity to penetrate intact skin when they come in contact with it, and be absorbed into the body), IOELV (Indicative Occupational Exposure Limit Values)
OEL chemical category	Potential for cutaneous absorption
Regulatory reference	Chemical Agents Code of Practice 2021
Ireland - Biological limit values	
Local name	Toluene
BMGV	0,02 mg/l Parameter: toluene - Medium: blood - Sampling time: Prior to last shift of workweek 0,03 mg/l Parameter: toluene - Medium: urine - Sampling time: End of shift 0,3 mg/g creatinine Parameter: o-cresol - Medium: urine - Sampling time: End of shift - Notations: B (Background)
Regulatory reference	Biological Monitoring Guidelines (HSA, 2011)
Italy - Occupational Exposure Limits	
Local name	Toluene
OEL TWA	192 mg/m ³ 50 ppm
Remark	Cute
OEL chemical category	skin - potential for cutaneous absorption
Regulatory reference	Allegato XXXVIII del D.Lgs. 9 aprile 2008, n. 81 e s.m.i.
Latvia - Occupational Exposure Limits	
Local name	Toluols (metilbenzols)
OEL TWA	50 mg/m ³ 14 ppm
OEL STEL	150 mg/m ³ 40 ppm
Remark	Āda, letekme uz dzirdi
OEL chemical category	skin - potential for cutaneous exposure
Regulatory reference	Ministru kabineta 2007. gada 15. maija noteikumiem Nr. 325 (Grozījumi Ministru kabineta 2015. gada 7. aprīlī noteikumiem Nr. 163)
Latvia - Biological Exposure Indices	
Local name	Toluolam
BEI	1,6 g/g creatinine Parameter: Hippuric acid - Medium: urine - Sampling time: end of shift 0,05 mg/l Parameter: Toluene - Medium: blood - Sampling time: end of shift
Regulatory reference	Ministru kabineta 2007. gada 15. maija noteikumiem Nr. 325 (Grozījumi Ministru kabineta 2021. gada 18. februārī noteikumiem Nr. 110)

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Lithuania - Occupational Exposure Limits	
Local name	Toluenas
IPRV (OEL TWA)	192 mg/m ³
	50 ppm
TPRV (OEL STEL)	384 mg/m ³
	100 ppm
Remark	R (reprodukcijai toksiškas poveikis); O (medžiaga į organizmą gali prasiskverbti pro nepažeistą odą)
OEL chemical category	Reproductive toxin, Skin notation
Regulatory reference	LIETUVOS HIGIENOS NORMA HN 23:2011 (Nr. V-695/A1-272, 2018-06-12)
Luxembourg - Occupational Exposure Limits	
Local name	Toluène
OEL TWA	192 mg/m ³
	50 ppm
OEL STEL	384 mg/m ³
	100 ppm
OEL chemical category	Possibility of significant uptake through the skin
Remark	Peau
Regulatory reference	Mémorial A N° 226 de 2021 concernant la protection de la sécurité et de la santé des salariés contre les risques liés à des agents chimiques sur le lieu de travail
Malta - Occupational Exposure Limits	
Local name	Toluene
OEL TWA	192 mg/m ³
	50 ppm
OEL STEL	384 mg/m ³
	100 ppm
Remark	Skin # Ġilda
OEL chemical category	Possibility of significant uptake through the skin
Regulatory reference	S.L.424.24 - Chemical Agents at Work Regulations (L.N.356 of 2021)
Netherlands - Occupational Exposure Limits	
Local name	Tolueen
TGG-8u (OEL TWA)	150 mg/m ³
	39 ppm
TGG-15min (OEL STEL)	384 mg/m ³
	100 ppm
Regulatory reference	Arbeidsomstandighedenregeling 2024

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Poland - Occupational Exposure Limits	
Local name	Toluen
NDS (OEL TWA)	100 mg/m ³
NDSch (OEL STEL)	200 mg/m ³
Remark	Skóra (Oznakowanie substancji notacją „skóra” oznacza, że wchłanianie substancji przez skórę może być tak samo istotne jak przy narażeniu drogą oddechową).
Regulatory reference	Dz. U. 2018 poz. 1286 wraz z późn. zm.
Portugal - Indicative Occupational Exposure Limit (IOEL)	
Local name	Tolueno
IOEL TWA	192 mg/m ³
	50 ppm
IOEL STEL	384 mg/m ³
	100 ppm
Remark	Cutânea.
Regulatory reference	Decreto-Lei n.º 1/2021 de 6 de janeiro
Portugal - Occupational Exposure Limits	
Local name	Tolueno
OEL TWA	192 mg/m ³ (indicative limit value)
	50 ppm (indicative limit value)
OEL STEL	384 mg/m ³ (indicative limit value)
	100 ppm (indicative limit value)
OEL chemical category	A4 - Not Classifiable as a Human Carcinogen, skin - potential for cutaneous exposure indicative limit value
Remark	A4 (Agente não classificável como carcinogénico no Homem); IBE (Índice biológico de exposição)
Regulatory reference	Norma Portuguesa NP 1796:2014
Portugal - Biological Exposure Indices	
Local name	Tolueno
BEI	0,02 mg/l Parâmetro: Tolueno - Meio: sangue - Momento da amostragem: Antes do último turno da semana de trabalho 0,03 mg/l Parâmetro: Tolueno - Meio: urina - Momento da amostragem: Fim do turno 0,3 mg/g creatinine Parâmetro: o-Cresol - Meio: urina - Momento da amostragem: Fim do turno - Notação: Vb (Valor basal), Com hidrólise
Regulatory reference	Norma Portuguesa NP 1796:2014
Romania - Occupational Exposure Limits	
Local name	Toluen
OEL TWA	192 mg/m ³

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	50 ppm
OEL STEL	384 mg/m ³
	100 ppm
OEL chemical category	Skin notation
Remark	P - posibilitatea unei penetrări cutanate importante; R2 - susceptibil de a dăuna fertilității
Regulatory reference	Hotărârea Guvernului nr. 1.218/2006 (Hotărârea nr. 53/2021)
Romania - Biological limit values	
Local name	Toluen
BLV	2 g/l Parameter: Hippuric acid - Medium: urine - Sampling time: end of shift 3 mg/l Parameter: o-Cresol - Medium: urine - Sampling time: end of shift
Regulatory reference	Hotărârea Guvernului nr. 1.218/2006 (Hotărârea nr. 584/2018)
Serbia - Occupational Exposure Limits	
Local name	толуен
OEL TWA	192 mg/m ³
	50 ppm
OEL STEL	384 mg/m ³
	100 ppm
Remark	ЕУ** – напомена да се ради о хемијским материјама за које су утврђене индикативне граничне вредности изложености према Директиви 2006/15/ЕЗ (друга листа); К – напомена да хемијска материја може штетно деловати на кожу
Regulatory reference	ПРАВИЛНИК о превентивним мерама за безбедан и здрав рад при излагању хемијским материјама („Службени гласник РС”, бр. 106/09, 117/17 и 107/21)
Slovakia - Occupational Exposure Limits	
Local name	Toluén
NPHV (OEL TWA)	192 mg/m ³
	50 ppm
NPHV (OEL STEL)	384 mg/m ³
	100 ppm
NPHV (OEL C)	384 mg/m ³
Remark	K - znamená, že faktor môže byť ľahko absorbovaný kožou
OEL chemical category	Potential for cutaneous absorption
Regulatory reference	Nariadenie vlády č. 355/2006 Z. z. (236/2020 Z. z.)
Slovakia - Biological limit values	
Local name	Toluén

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BLV	600 µg/l Parameter: Toluene - Medium: blood - Sampling time: end of exposure or work shift 1,5 mg/l Parameter: o-Cresol - Medium: urine - Sampling time: after all work shifts (for long-term exposure) 1,5 mg/l Parameter: o-Cresol - Medium: urine - Sampling time: end of exposure or work shift 1600 mg/g creatinine Parameter: Hippuric acid - Sampling time: end of exposure or work shift
Regulatory reference	Nariadenie vlády č. 355/2006 Z. z. (Zmena: 471/2011 Z.z.)
Slovenia - Occupational Exposure Limits	
Local name	toluen
OEL TWA	192 mg/m ³
	50 ppm
OEL STEL	384 mg/m ³
	100 ppm
Remark	K (Lastnost lažjega prehajanja snovi v organizem skozi kožo), Y (Snovi, pri katerih ni nevarnosti za zarodek ob upoštevanju mejnih vrednosti in bat vrednosti), BAT (Biološka mejna vrednost), EU
OEL chemical category	Category 2, Potential for cutaneous absorption
Regulatory reference	Uradni list RS, št. 72/2021 z dne 11.5.2021
Slovenia - Biological limit values	
Local name	toluen
BLV	600 µg/l Parameter: toluen - Biološki vzorec: kri - Čas vzorčenja: takoj po izpostavljenosti ob koncu delovne izmene 1,5 mg/l Parameter: o-krezol (po hidrolizi) - Biološki vzorec: urin - Čas vzorčenja: ob koncu delovne izmene, pri dolgotrajni izpostavljenosti: ob koncu delovne izmene po več zaporednih delavnikih 75 µg/l Parameter: toluen - Biološki vzorec: urin - Čas vzorčenja: takoj po izpostavljenosti ob koncu delovne izmene
Regulatory reference	Uradni list RS, št. 72/2021 z dne 11.5.2021
Spain - Occupational Exposure Limits	
Local name	Tolueno
VLA-ED (OEL TWA)	192 mg/m ³ (indicative limit value)
	50 ppm (indicative limit value)
VLA-EC (OEL STEL)	384 mg/m ³
	100 ppm

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toluene (108-88-3)	
Remark	Vía dérmica (Indica que, en las exposiciones a esta sustancia, la aportación por la vía cutánea puede resultar significativa para el contenido corporal total si no se adoptan medidas para prevenir la absorción. En estas situaciones, es aconsejable la utilización del control biológico para poder cuantificar la cantidad global absorbida del contaminante), VLB® (Agente químico que tiene Valor Límite Biológico), VLI (Agente químico para el que la U.E. estableció en su día un valor límite indicativo), r (Esta sustancia tiene establecidas restricciones a la fabricación, la comercialización o el uso en los términos especificados en el "Reglamento (CE) n° 1907/2006 sobre Registro, Evaluación, Autorización y Restricción de sustancias y preparados químicos" (REACH) de 18 de diciembre de 2006 (DOUE L 369 de 30 de diciembre de 2006). Las restricciones de una sustancia pueden aplicarse a todos los usos o sólo a usos concretos. El anexo XVII del Reglamento REACH contiene la lista de todas las sustancias restringidas y especifica los usos que se han restringido).
OEL chemical category	skin - potential for cutaneous absorption
Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2023. INSHT
Spain - Biological limit values	
Local name	Tolueno
BLV	0,6 mg/l Parameter: o-Cresol - Medium: urine - Sampling time: end of shift 0,05 mg/l Parameter: Toluene - Medium: blood - Sampling time: start of last shift of workweek 0,08 mg/l Parameter: Toluene - Medium: urine - Sampling time: end of shift
Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2023. INSHT
Sweden - Occupational Exposure Limits	
Local name	Toluen
NGV (OEL TWA)	192 mg/m ³
	50 ppm
KGV (OEL STEL)	384 mg/m ³
	100 ppm
Remark	B (Ämnet kan orsaka hörselskada. Exponering för ämnet nära det befintliga yrkeshygieniska gränsvärdet och vid samtidig exponering för buller nära insatsvärdet 80 dB kan orsaka hörselskada); H (Ämnet kan lätt upptas genom huden. Det föreskrivna gränsvärdet bedöms ge tillräckligt skydd endast under förutsättning att huden är skyddad mot exponering för ämnet ifråga)
OEL chemical category	Skin notation
Regulatory reference	Hygieniska gränsvärden (AFS 2018:1)
United Kingdom - Occupational Exposure Limits	
Local name	Toluene
WEL TWA (OEL TWA)	191 mg/m ³
	50 ppm

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toluene (108-88-3)	
WEL STEL (OEL STEL)	384 mg/m ³
	100 ppm
Remark	Sk (Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity)
WEL chemical category	Potential for cutaneous absorption
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE
Iceland - Occupational Exposure Limits	
Local name	Tólúen (fenýlmetan, metýlbensen)
OEL TWA	94 mg/m ³
	25 ppm
OEL STEL	188 mg/m ³
	50 ppm
Remark	H (efnið getur auðveldlega borist inn í líkamann gegnum húð)
Regulatory reference	Reglugerð um mengunarmörk og aðgerðir til að draga úr mengun á vinnustöðum (Nr. 390/2009)
Norway - Occupational Exposure Limits	
Local name	Toluen
Grenseverdi (OEL TWA)	94 mg/m ³
	25 ppm
Korttidsverdi (OEL STEL)	141 mg/m ³ (value calculated)
	37,5 ppm (value calculated)
Remark	H: Kjemikalier som kan tas opp gjennom huden; E: EU har en veiledende grenseverdi og/eller anmerkning for stoffet.
OEL chemical category	Skin notation
Regulatory reference	FOR-2023-12-18-2278
North Macedonia - Occupational Exposure Limits	
Local name	Толуен
OEL TWA	192 mg/m ³
	50 ppm
KTV	2
Short time value [mg/m ³]	384 mg/m ³
Short time value	100 ppm

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toluene (108-88-3)	
Remark	(KTV) краткотрајна вредност (КТВ) значи концентрација на опасни хемиски супстанции во воздухот на работното место внатре во зона на дишење, на која работникот без опасност по здравјето може да е изложен на покусо време. Изложеноста на краткотрајни вредности може да трае највеќе 15 минути и не смее да се повтори повеќе од четирипати во работната смена, при што меѓу две изложености на оваа концентрација мора да измине најмалку 60 минути. Краткотрајната вредност е изразена во mg/m ³ или во ml/m ³ (ppm) а е дадена како многукратни дозволени пречекорувања на граничната вредност; (K) својство на полесно пренесување на супстанците во организмот преку кожата; (BAT) биолошка гранична вредност – праг на биолошка гранична вредност, што значи предупредување на опасна хемиска супстанца и нејзини метаболити во ткивата, телесните течности или издишувањето на воздухот, без оглед на тоа, дали опасната хемиска супстанца е внесена во организмот со вдишување, голтање или преку кожата; (EU) European Union – гранична вредност, определена на ниво на Европската унија
Regulatory reference	Правилник за минималните барања за безбедност и здравје при работа на вработени од ризици поврзани со изложување на хемиски супстанции („Службен весник на Република Македонија” бр.46/10)
Switzerland - Occupational Exposure Limits	
Local name	Toluène / Toluol
MAK (OEL TWA)	190 mg/m ³
	50 ppm
KZGW (OEL STEL)	760 mg/m ³
	200 ppm
Notation	R, R2, SS _C , O ^B , B / H, R2, SS _C , O ^L , B
Remark	INRS, HSE, NIOSH, DFG
OEL chemical category	Skin notation, Category 2 reproductive toxin
Regulatory reference	www.suva.ch, 01.01.2024
Switzerland - BAT	
Local name	Toluène / Toluol
BAT	600 µg/l Parameter: Toluene - Medium: whole blood - Sampling time: end of shift 6,48 µmol/l Parameter: Toluene - Medium: whole blood - Sampling time: end of shift 2 g/g creatinine Parameter: Hippuric acid - Medium: urine - Sampling time: end of shift, and after several shifts (for long-term exposures) Parameter: Hippuric acid - Medium: urine - Sampling time: end of shift, and after several shifts (for long-term exposures) 0,5 mg/l Parameter: o-Cresol - Medium: urine - Sampling time: end of shift, and after several shifts (for long-term exposures) 4,62 µmol/l Parameter: o-Cresol - Medium: urine - Sampling time: end of shift, and after several shifts (for long-term exposures) 75 µg/l Parameter: Toluol - Medium: urine - Sampling time: end of shift
Regulatory reference	Ordonnance 832.30 (OPA), article 50 al. 3, www.suva.ch/valeurs-limites / Verordnung 832.30 (VUV), Art. 50 Abs. 3, www.suva.ch/grenzwerte

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toluene (108-88-3)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Toluene
ACGIH OEL TWA	20 ppm
Remark (ACGIH)	TLV® Basis: CNS, visual & hearing impair; female repro system eff; pregnancy loss. Notations: OTO; A4 (Not classifiable as a Human Carcinogen); BEI
ACGIH chemical category	Not Classifiable as a Human Carcinogen
Regulatory reference	ACGIH 2024
USA - ACGIH - Biological Exposure Indices	
Local name	Toluene
BEI	0,02 mg/l Parameter: Toluene - Medium: blood - Sampling time: prior to last shift of workweek 0,03 mg/l Parameter: Toluene - Medium: urine - Sampling time: end of shift 0,3 mg/g creatinine Parameter: o-Cresol with hydrolysis - Medium: urine - Sampling time: end of shift (background)
Regulatory reference	ACGIH 2024

xylene (1330-20-7)	
EU - Indicative Occupational Exposure Limit (IOEL)	
Local name	Xylene, mixed isomers, pure
IOEL TWA	221 mg/m ³ (pure)
	50 ppm (pure)
IOEL STEL	442 mg/m ³ (pure)
	100 ppm (pure)
Remark	Possibility of significant uptake through the skin (pure)
Regulatory reference	COMMISSION DIRECTIVE 2000/39/EC
Albania - Occupational Exposure Limits	
Local name	Ksilen, izomere të përziera, i pastër
OEL TWA	221 mg/m ³
	50 ppm
OEL STEL	442 mg/m ³
	100 ppm
Remark	Lëkurë (tregon mundësinë e një marrjeje të rëndësishme nëpërmjet lëkurës)
Regulatory reference	VENDIM Nr. 522, datë 6.8.2014 PËR MIRATIMIN E RREGULLORES "PËR MBROJTJEN E SIGURISË DHE SHËNDETIT TË PUNËMARRËSVE NGA RISQET E LIDHURA ME AGJENTËT KIMIKE NË PUNË"
Austria - Occupational Exposure Limits	
Local name	Xylol (alle Isomeren): Xylol

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xylene (1330-20-7)	
MAK (OEL TWA)	221 mg/m ³ (all isomers)
	50 ppm (all isomers)
MAK (OEL STEL)	442 mg/m ³
	100 ppm
Regulatory reference	BGBl. II Nr. 156/2021
Belgium - Occupational Exposure Limits	
Local name	Xylène, isomères mixtes, purs # Xyleen, mengsel van isomeren, zuiver
OEL TWA	221 mg/m ³
	50 ppm
OEL STEL	442 mg/m ³
	100 ppm
Remark	D: la mention "D" signifie que la résorption de l'agent, via la peau, les muqueuses ou les yeux, constitue une partie importante de l'exposition totale. Cette résorption peut se faire tant par contact direct que par présence de l'agent dans l'air. # D: de vermelding "D" betekent dat de opname van het agens via de huid, de slijmvliezen of de ogen een belangrijk deel van de totale blootstelling vormt. Deze opname kan het gevolg zijn van zowel direct contact als zijn aanwezigheid in de lucht.
OEL chemical category	Skin, Skin notation pure
Regulatory reference	Koninklijk besluit/Arrêté royal 16/11/2023
Bulgaria - Occupational Exposure Limits	
Local name	Ксилен (смес от изомери), чист
OEL TWA	221 mg/m ³ (pure)
	50 ppm (pure)
OEL STEL	442 mg/m ³ (pure)
	100 ppm (pure)
Remark	Кожа (възможна е значителна резорбция чрез кожата); • (Химични агенти, за които са определени гранични стойности във въздуха на работната среда за Европейската общност)
Regulatory reference	Наредба № 13 от 30.12.2003 г. за защита на работещите от рискове, свързани с експозиция на химични агенти при работа (изм. и доп. ДВ. бр. 47 от 2021 г., в сила от 04.06.2021 г.)
Croatia - Occupational Exposure Limits	
Local name	Ksilen (svi izomeri)
GVI (OEL TWA)	221 mg/m ³
	50 ppm
KGVI (OEL STEL)	442 mg/m ³
	100 ppm
Remark	Direktiva: 2000/39/EZ. Napomena: Koža (razvrstana kao tvar koja nadražuje kožu (H315))

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xylene (1330-20-7)	
OEL chemical category	Skin notation
Regulatory reference	Pravilnik o zaštiti radnika od izloženosti opasnim kemikalijama na radu, graničnim vrijednostima izloženosti i biološkim graničnim vrijednostima (NN 148/2023)
Croatia - Biological limit values	
Local name	Ksilen
BLV	1,5 mg/l Parameter: Xylene - Medium: blood - Sampling time: at the end of the work shift (alcohol before exposure to Xylene raises occurrence) 1,5 g/g creatinine Parameter: Methylhippuric acid - Medium: urine - Sampling time: at the end of the work shift (calculated on the average Creatinine value of 1.2 g/L urine)
Regulatory reference	Pravilnik o zaštiti radnika od izloženosti opasnim kemikalijama na radu, graničnim vrijednostima izloženosti i biološkim graničnim vrijednostima (NN 91/2018)
Cyprus - Occupational Exposure Limits	
Local name	Ξυλένιο, μικτά ισομερή, καθαρά
OEL TWA	221 mg/m ³
	50 ppm
OEL STEL	442 mg/m ³
	100 ppm
OEL chemical category	Skin-potential for cutaneous absorption
Remark	δέρμα
Regulatory reference	Κανονισμοί του 2007 (Κ.Δ.Π. 295/2007)
Czech Republic - Occupational Exposure Limits	
Local name	Xylen technická směs isomerů a všechny isomery
PEL (OEL TWA)	200 mg/m ³
	45,33 ppm
NPK-P (OEL C)	400 mg/m ³
	90,66 ppm
Remark	B - u látky je zaveden biologický expoziční test (BET) v moči nebo krvi, D - při expozici se významně uplatňuje pronikání faktoru kůže, I - dráždí sliznice (oči, dýchací cesty) resp. kůže.
OEL chemical category	Potential for cutaneous absorption
Regulatory reference	Nařízení vlády č. 361/2007 Sb. (Předpis 330/2023 Sb.)
Czech Republic - Biological limit values	
Local name	Xyleny
BLV	820 µmol/mmol Creatinine Parameter: Methylhippuric acid - Medium: urine - Sampling time: end of shift 1400 mg/g creatinine Parameter: Methylhippuric acid - Medium: urine - Sampling time: end of shift

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xylene (1330-20-7)	
Regulatory reference	Vyhláška č. 107/2013 Sb. (kterou se mění vyhláška č. 432/2003 Sb.)
Denmark - Occupational Exposure Limits	
Local name	Xylen (Dimethylbenzen), alle isomere
OEL TWA	109 mg/m ³ (Xylene, all isomers)
	25 ppm (Xylene, all isomers)
OEL STEL	442 mg/m ³
	100 ppm
Remark	E (betyder, at stoffet har en EF-grænseværdi); H (betyder, at stoffet kan optages gennem huden)
OEL chemical category	Potential for cutaneous absorption
Regulatory reference	BEK nr 202 af 21/02/2023
Estonia - Occupational Exposure Limits	
Local name	Ksüleen (dimetüülbenseen)
OEL TWA	200 mg/m ³
	50 ppm
OEL STEL	450 mg/m ³
	100 ppm
Remark	A (Naha kaudu kergesti imenduv aine)
OEL chemical category	Skin notation
Regulatory reference	Vabariigi Valitsuse 20. märtsi 2001. a määruse nr 105 (RT I, 21.12.2022, 3)
Finland - Occupational Exposure Limits	
Local name	Ksyleeni
HTP (OEL TWA)	220 mg/m ³
	50 ppm
HTP (OEL STEL)	440 mg/m ³
	100 ppm
Remark	Iho
OEL chemical category	Potential for cutaneous absorption
Regulatory reference	HTP-ARVOT 2020 (Sosiaali- ja terveystieteiden ministeriö)
Finland - Biological limit values	
Local name	Ksyleeni
BLV	Parameter: Methylhippuric acid - Medium: urine - Sampling time: after the shift
Regulatory reference	HTP-ARVOT 2020 (Sosiaali- ja terveystieteiden ministeriö)
France - Occupational Exposure Limits	
Local name	Xylène, isomères mixtes, purs

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xylene (1330-20-7)	
VME (OEL TWA)	221 mg/m ³ (restrictive limit)
	50 ppm (restrictive limit)
VLE (OEL C/STEL)	442 mg/m ³ (restrictive limit)
	100 ppm (restrictive limit)
Remark	Valeurs réglementaires contraignantes. Risque de pénétration percutanée
OEL chemical category	Risk of cutaneous absorption
Regulatory reference	Article R4412-149 du Code du travail (réf.: INRS ED 6443, 2022; Outil65; Décret n° 2019-1487; Décret n° 2020-1546; Décret n° 2021-434; Décret n° 2021-1849)
France - Biological limit values	
BLV	Parameter: Methylhippuric acid - Medium: urine - Sampling time: end of shift (per the Authority, the values for this substance must be decided and/or determined on a case by case basis. Guidance for the calculation of and interpretation of values is provided in the source)
Germany - Occupational Exposure Limits (TRGS 900)	
Local name	Xylol (alle Isomere)
Occupational exposure limit value (mg/m ³) (TRGS900)	220 mg/m ³ (all isomers)
Occupational exposure limit value (ppm) (TRGS900)	50 ppm (all isomers)
Peak exposure limitation factor	2(II)
Remark	DFG - Senatskommission zur Prüfung gesundheitsschädlicher Arbeitsstoffe der DFG (MAK-Kommission); EU - Europäische Union (Von der EU wurde ein Luftgrenzwert festgelegt: Abweichungen bei Wert und Spitzenbegrenzung sind möglich); H - hautresorptiv
Chemical category	Skin notation all isomers
Regulatory reference	TRGS900
Germany - Biological limit values (TRGS 903)	
Local name	Xylol (alle Isomere)
Biological limit value	2000 mg/l Parameter: Methylhippuric(tolur-)acid (all isomers) - Medium: urine - Sampling time: end of shift (all isomers)
Regulatory reference	TRGS 903
Gibraltar - Occupational Exposure Limits	
Local name	Xylene, mixed isomers, pure
OEL TWA	221 mg/m ³ (pure)
	50 ppm (pure)
OEL STEL	442 mg/m ³ (pure)
	100 ppm (pure)
Remark	Skin
OEL chemical category	Skin notation pure

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xylene (1330-20-7)	
Regulatory reference	Factories (Control of Chemical Agents at Work) Regulations 2003 (LN. 2018/181)
Greece - Occupational Exposure Limits	
Local name	Ξυλόλια (όλα τα ισομερή)
OEL TWA	435 mg/m ³
	100 ppm
OEL STEL	650 mg/m ³
	150 ppm
OEL chemical category	skin - potential for cutaneous absorption
Remark	Η ένδειξη «δέρμα» στις οριακές τιμές επαγγελματικής έκθεσης επισημαίνει το ενδεχόμενο σημαντικής διείσδυσης μέσω του δέρματος.
Regulatory reference	Π.Δ. 90/1999 - Προστασία της υγείας των εργαζομένων που εκτίθενται σε ορισμένους χημικούς παράγοντες κατά τη διάρκεια της εργασίας τους
Hungary - Occupational Exposure Limits	
Local name	XILOL izomerek keveréke
AK (OEL TWA)	221 mg/m ³
CK (OEL STEL)	442 mg/m ³
Remark	b (Bőrön át is felszívódik), BEM (biológiai expozíciós mutató); EU1 (2000/39/EK irányelvben közölt érték); R (Azok az anyagok, amelyek egészségkárosító hatása RÖVID expozíció hatására jelentkezik)
OEL chemical category	Potential for cutaneous absorption
Regulatory reference	5/2020. (II. 6.) ITM rendelet - A kémiai kóroki tényezők hatásának kitett munkavállalók egészségének és biztonságának védelméről
Hungary - Biological Exposure Indices	
Local name	Xilol
BEI	1500 mg/g creatinine Biológiai expozíciós (hatás) mutató: metilhippursavak - Biológiai minta: vizeletben - Mintavétel ideje: m.v. (műszak végén) 860 μmol/mmol Creatinine Biológiai expozíciós (hatás) mutató: metilhippursavak - Biológiai minta: vizeletben - Mintavétel ideje: m.v. (műszak végén)
Regulatory reference	5/2020. (II. 6.) ITM rendelet - A kémiai kóroki tényezők hatásának kitett munkavállalók egészségének és biztonságának védelméről
Ireland - Occupational Exposure Limits	
Local name	Xylene, mixed isomers
OEL TWA	221 mg/m ³
	50 ppm
OEL STEL	442 mg/m ³
	100 ppm

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xylene (1330-20-7)	
Remark	Sk (Substances which have the capacity to penetrate intact skin when they come in contact with it, and be absorbed into the body), IOELV (Indicative Occupational Exposure Limit Values)
OEL chemical category	Potential for cutaneous absorption
Regulatory reference	Chemical Agents Code of Practice 2021
Ireland - Biological limit values	
Local name	Xylene
BMGV	1,5 g/g creatinine Parameter: methylhippuric acids - Medium: urine - Sampling time: End of Shift
Regulatory reference	Biological Monitoring Guidelines (HSA, 2011)
Italy - Occupational Exposure Limits	
Local name	Xilene, isomeri misti, puro
OEL TWA	221 mg/m ³ (pure)
	50 ppm (pure)
OEL STEL	442 mg/m ³ (pure)
	100 ppm (pure)
Remark	Cute
OEL chemical category	skin - potential for cutaneous absorption pure
Regulatory reference	Allegato XXXVIII del D.Lgs. 9 aprile 2008, n. 81 e s.m.i.
Latvia - Occupational Exposure Limits	
Local name	Ksilols (o-,m-,p-ksilols, dimetilbenzols)
OEL TWA	221 mg/m ³
	50 ppm
OEL STEL	442 mg/m ³
	100 ppm
Remark	Āda
OEL chemical category	skin - potential for cutaneous exposure
Regulatory reference	Ministru kabineta 2007. gada 15. maija noteikumiem Nr. 325
Lithuania - Occupational Exposure Limits	
Local name	Ksilenas, mišrūs izomerai, grynas
IPRV (OEL TWA)	221 mg/m ³ (mixed isomers, pure)
	50 ppm (mixed isomers, pure)
TPRV (OEL STEL)	442 mg/m ³ (mixed isomers, pure)
	100 ppm (mixed isomers, pure)
Remark	O (medžiaga į organizmą gali prasiskverbti pro nepažeistą odą)
OEL chemical category	Skin notation
Regulatory reference	LIETUVOS HIGIENOS NORMA HN 23:2011 (Nr. V-695/A1-272, 2018-06-12)

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xylene (1330-20-7)	
Luxembourg - Occupational Exposure Limits	
Local name	Xylène, isomères mixtes, purs
OEL TWA	221 mg/m ³
	50 ppm
OEL STEL	442 mg/m ³
	100 ppm
OEL chemical category	Possibility of significant uptake through the skin
Remark	Peau
Regulatory reference	Mémorial A N° 226 de 2021 concernant la protection de la sécurité et de la santé des salariés contre les risques liés à des agents chimiques sur le lieu de travail
Malta - Occupational Exposure Limits	
Local name	Xylene, mixed isomers, pure # Xylene, Isomeri mhallta, puri
OEL TWA	221 mg/m ³ (pure)
	50 ppm (pure)
OEL STEL	442 mg/m ³ (pure)
	100 ppm (pure)
Remark	Skin # Ġilda
OEL chemical category	Possibility of significant uptake through the skin pure
Regulatory reference	S.L.424.24 - Chemical Agents at Work Regulations (L.N.356 of 2021)
Netherlands - Occupational Exposure Limits	
Local name	Xyleen, o-, m-, p-isomeren
TGG-8u (OEL TWA)	210 mg/m ³
	47,5 ppm
TGG-15min (OEL STEL)	442 mg/m ³
	100 ppm
Remark	H (Huidopname) Stoffen die relatief gemakkelijk door de huid kunnen worden opgenomen, hetgeen een substantiële bijdrage kan betekenen aan de totale inwendige blootstelling, hebben in de lijst een H-aanduiding. Bij deze stoffen moeten naast maatregelen tegen inademing ook adequate maatregelen ter voorkoming van huidcontact worden genomen.
MAC chemical category	Skin notation
Regulatory reference	Arbeidsomstandighedenregeling 2024
Poland - Occupational Exposure Limits	
Local name	Ksylan mieszanina izomerów: 1,2-; 1,3-; 1,4-
NDS (OEL TWA)	100 mg/m ³ (mixture of isomers)
NDSch (OEL STEL)	200 mg/m ³ (mixture of isomers)

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xylene (1330-20-7)	
Remark	Skóra (Oznakowanie substancji notacją „skóra” oznacza, że wchłanianie substancji przez skórę może być tak samo istotne jak przy narażeniu drogą oddechową).
Regulatory reference	Dz. U. 2018 poz. 1286 wraz z późn. zm.
Portugal - Indicative Occupational Exposure Limit (IOEL)	
Local name	Xilenos, mistura de isómeros, puro
IOEL TWA	221 mg/m ³
	50 ppm
IOEL STEL	442 mg/m ³
	100 ppm
Remark	Cutânea.
Regulatory reference	Decreto-Lei n.º 1/2021 de 6 de janeiro
Portugal - Occupational Exposure Limits	
Local name	Xileno (isómeros)
OEL TWA	221 mg/m ³ (indicative limit value)
	50 ppm (indicative limit value)
OEL STEL	442 mg/m ³ (indicative limit value)
	100 ppm (indicative limit value)
OEL chemical category	A4 - Not Classifiable as a Human Carcinogen, skin - potential for cutaneous exposure
Remark	A4 (Agente não classificável como carcinogénico no Homem); IBE (Índice biológico de exposição)
Regulatory reference	Norma Portuguesa NP 1796:2014
Portugal - Biological Exposure Indices	
Local name	Xilenos (graus técnico e comercial)
BEI	1,5 g/g creatinine Parâmetro: Ácidos (o, m, p)-metilhipúricos - Meio: urina - Momento da amostragem: Fim do turno
Regulatory reference	Norma Portuguesa NP 1796:2014
Romania - Occupational Exposure Limits	
Local name	Xilen, izomer mixt, pur
OEL TWA	221 mg/m ³ (pure)
	50 ppm (pure)
OEL STEL	442 mg/m ³ (pure)
	100 ppm (pure)
OEL chemical category	Skin notation pure
Remark	P - posibilitatea unei penetrări cutanate importante
Regulatory reference	Hotărârea Guvernului nr. 1.218/2006 (Hotărârea nr. 53/2021)

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xylene (1330-20-7)	
Romania - Biological limit values	
Local name	Xilen
BLV	3 g/l Parameter: Methylhippuric acid - Medium: urine - Sampling time: end of shift
Regulatory reference	Hotărârea Guvernului nr. 1.218/2006 (Hotărârea nr. 584/2018)
Serbia - Occupational Exposure Limits	
Local name	ксилен, мешани изомери, чист
OEL TWA	221 mg/m ³
	50 ppm
OEL STEL	442 mg/m ³
	100 ppm
Remark	ЕУ* – напомена да се ради о хемијским материјама за које су утврђене индикативне граничне вредности изложености према Директиви 2000/39/ЕЗ (прва листа); К – напомена да хемијска материја може штетно деловати на кожу
Regulatory reference	ПРАВИЛНИК о превентивним мерама за безбедан и здрав рад при излагању хемијским материјама („Службени гласник РС”, бр. 106/09, 117/17 и 107/21)
Slovakia - Occupational Exposure Limits	
Local name	Xylén, zmiešané izoméry
NPHV (OEL TWA)	221 mg/m ³
	50 ppm
NPHV (OEL STEL)	442 mg/m ³
	100 ppm
NPHV (OEL C)	442 mg/m ³
Remark	K - znamená, že faktor môže byť ľahko absorbovaný kožou
OEL chemical category	Potential for cutaneous absorption
Regulatory reference	Nariadenie vlády č. 355/2006 Z. z. (236/2020 Z. z.)
Slovakia - Biological limit values	
Local name	Xylén (všetky izoméry)
BLV	1,5 mg/l Parameter: Xylene - Medium: blood - Sampling time: end of exposure or work shift (all isomers) 2000 mg/l Parameter: Methylhippuric acid - Medium: urine - Sampling time: end of exposure or work shift
Regulatory reference	Nariadenie vlády č. 355/2006 Z. z. (Zmena: 471/2011 Z.z.)
Slovenia - Occupational Exposure Limits	
Local name	ksilen (mešane izomere)
OEL TWA	221 mg/m ³
	50 ppm
OEL STEL	442 mg/m ³

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xylene (1330-20-7)	
	100 ppm
Remark	K (Lastnost lažjega prehajanja snovi v organizem skozi kožo), BAT (Biološka mejna vrednost), EU
OEL chemical category	Potential for cutaneous absorption
Regulatory reference	Uradni list RS, št. 72/2021 z dne 11.5.2021
Slovenia - Biological limit values	
Local name	ksilen (vse izomere)
BLV	2 g/l Parameter: metilhipurna kislin (vse izomere) - Biološki vzorec: urin - Čas vzorčenja: ob koncu delovne izmene
Regulatory reference	Uradni list RS, št. 72/2021 z dne 11.5.2021
Spain - Occupational Exposure Limits	
Local name	Xileno, mezcla isómeros
VLA-ED (OEL TWA)	221 mg/m ³ (indicative limit value)
	50 ppm (indicative limit value)
VLA-EC (OEL STEL)	442 mg/m ³
	100 ppm
Remark	Vía dérmica (Indica que, en las exposiciones a esta sustancia, la aportación por la vía cutánea puede resultar significativa para el contenido corporal total si no se adoptan medidas para prevenir la absorción. En estas situaciones, es aconsejable la utilización del control biológico para poder cuantificar la cantidad global absorbida del contaminante), VLB® (Agente químico que tiene Valor Límite Biológico), VLI (Agente químico para el que la U.E. estableció en su día un valor límite indicativo).
OEL chemical category	skin - potential for cutaneous absorption
Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2024. INSHT
Spain - Biological limit values	
Local name	Xilenos, mezcla isómeros
BLV	1 g/g creatinine Parameter: Methylhippuric acids - Medium: urine - Sampling time: end of shift
Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2024. INSHT
Sweden - Occupational Exposure Limits	
Local name	Xylen
NGV (OEL TWA)	221 mg/m ³ (Xylene)
	50 ppm (Xylene)
KGV (OEL STEL)	442 mg/m ³ (Xylene)
	100 ppm (Xylene)

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xylene (1330-20-7)	
Remark	H (Ämnet kan lätt upptas genom huden. Det föreskrivna gränsvärdet bedöms ge tillräckligt skydd endast under förutsättning att huden är skyddad mot exponering för ämnet ifråga)
OEL chemical category	Skin notation
Regulatory reference	Hygieniska gränsvärden (AFS 2018:1)
United Kingdom - Occupational Exposure Limits	
Local name	Xylene
WEL TWA (OEL TWA)	220 mg/m ³
	50 ppm
WEL STEL (OEL STEL)	441 mg/m ³
	100 ppm
Remark	Sk (Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity)
WEL chemical category	Potential for cutaneous absorption
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE
United Kingdom - Biological limit values	
Local name	Xylene, o-, m-, p- or mixed isomers
BMGV	650 mmol/mol Creatinine Parameter: methyl hippuric acid - Medium: urine - Sampling time: Post shift
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE
Iceland - Occupational Exposure Limits	
Local name	Xýlen, allir ísómerar (dímetýlbensen)
OEL TWA	109 mg/m ³
	25 ppm
OEL STEL	442 mg/m ³
	100 ppm
Remark	H (efnið getur auðveldlega borist inn í líkamann gegnum húð)
Regulatory reference	Reglugerð um mengunarmörk og aðgerðir til að draga úr mengun á vinnustöðum (Nr. 390/2009)
Norway - Occupational Exposure Limits	
Local name	Xylen (alle isomere)
Grenseverdi (OEL TWA)	108 mg/m ³
	25 ppm
Kortidsverdi (OEL STEL)	135 mg/m ³ (value calculated)
	37,5 ppm (value calculated)
Remark	H: Kjemikalier som kan tas opp gjennom huden; E: EU har en veiledende grenseverdi og/eller anmerkning for stoffet.

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xylene (1330-20-7)	
OEL chemical category	Skin notation
Regulatory reference	FOR-2023-12-18-2278
North Macedonia - Occupational Exposure Limits	
Local name	ксилен (смеша од изомери)
OEL TWA	221 mg/m ³
	50 ppm
KTV	2
Short time value [mg/m ³]	442 mg/m ³
Short time value	100 ppm
Remark	(KTV) краткотрајна вредност (КТВ) значи концентрација на опасни хемиски супстанции во воздухот на работното место внатре во зона на дишење, на која работникот без опасност по здравјето може да е изложен на покусо време. Изложеноста на краткотрајни вредности може да трае највеќе 15 минути и не смее да се повтори повеќе од четирипати во работната смена, при што меѓу две изложености на оваа концентрација мора да измине најмалку 60 минути. Краткотрајната вредност е изразена во mg/m³ или во ml/m³(ppm) а е дадена како многукратни дозволени пречекорувања на граничната вредност; (K) својство на полесно пренесување на супстанците во организмот преку кожата; (BAT) биолошка гранична вредност – праг на биолошка гранична вредност, што значи предупредување на опасна хемиска супстанца и нејзини метаболити во ткивата, телесните течности или издишувањето на воздухот, без оглед на тоа, дали опасната хемиска супстанца е внесена во организмот со вдишување, голтање или преку кожата; (EU) European Union – гранична вредност, определена на ниво на Европската унија
Regulatory reference	Правилник за минималните барања за безбедност и здравје при работа на вработени од ризици поврзани со изложување на хемиски супстанции („Службен весник на Република Македонија“ бр.46/10)
Switzerland - Occupational Exposure Limits	
Local name	Xylène (tous les isomères) / Xylol (alle Isomere)
MAK (OEL TWA)	220 mg/m ³
	50 ppm
KZGW (OEL STEL)	440 mg/m ³
	100 ppm
Notation	R, B / H, B
Remark	INRS, NIOSH
OEL chemical category	Skin notation
Regulatory reference	www.suva.ch, 01.01.2024
Switzerland - BAT	
Local name	Xylène (tous les isomères) / Xylol (alle Isomere)
BAT	2 g/l Parameter: Methylhippuric acid - Medium: urine - Sampling time: end of shift

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xylene (1330-20-7)	
Regulatory reference	Ordonnance 832.30 (OPA), article 50 al. 3, www.suva.ch/valeurs-limites/ / Verordnung 832.30 (VUV), Art. 50 Abs. 3, www.suva.ch/grenzwerte
USA - ACGIH - Occupational Exposure Limits	
Local name	Xylene, mixed isomers (Dimethylbenzene)
ACGIH OEL TWA	20 ppm
Remark (ACGIH)	TLV® Basis: URT & eye irr; hematologic eff; ototoxicity (for mixtures containing p-xylene); CNS impair. Notations: OTO (for mixtures containing p-xylene); A4 (Not classifiable as a Human Carcinogen); BEI
ACGIH chemical category	Not Classifiable as a Human Carcinogen
Regulatory reference	ACGIH 2024
USA - ACGIH - Biological Exposure Indices	
Local name	Xylenes (technical or commercial grade)
BEI	1,5 g/g creatinine Parameter: Methylhippuric acids - Medium: urine - Sampling time: end of shift (technical or commercial grade)
Remark	Commercial or technical grade xylenes consist of mixtures of isomers and significant amounts of ethyl benzene as indicated under "Properties." Because ethyl benzene is known to reduce the metabolism of xylenes to methylhippuric acids, the BEI applies to technical or commercial grades of xylenes only. The determinants refer to the total of all isomers of methylhippuric acids
Regulatory reference	ACGIH 2024

ethylbenzene (100-41-4)	
EU - Indicative Occupational Exposure Limit (IOEL)	
Local name	Ethylbenzene
IOEL TWA	442 mg/m ³
	100 ppm
IOEL STEL	884 mg/m ³
	200 ppm
Remark	Possibility of significant uptake through the skin
Regulatory reference	COMMISSION DIRECTIVE 2000/39/EC
Albania - Occupational Exposure Limits	
Local name	Etilbenzen
OEL TWA	442 mg/m ³
	100 ppm
OEL STEL	884 mg/m ³
	200 ppm
Remark	Lëkurë (tregon mundësinë e një marrjeje të rëndësishme nëpërmjet lëkurës)

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ethylbenzene (100-41-4)	
Regulatory reference	VENDIM Nr. 522, datë 6.8.2014 PËR MIRATIMIN E RREGULLORES "PËR MBROJTJEN E SIGURISË DHE SHËNDETIT TË PUNËMARRËSVE NGA RISQET E LIDHURA ME AGJENTËT KIMIKE NË PUNË"
Austria - Occupational Exposure Limits	
Local name	Ethylbenzol
MAK (OEL TWA)	440 mg/m ³
	100 ppm
MAK (OEL STEL)	880 mg/m ³
	200 ppm
Remark	H
OEL chemical category	Skin notation
Regulatory reference	BGBI. II Nr. 156/2021
Belgium - Occupational Exposure Limits	
OEL TWA	87 mg/m ³
	20 ppm
OEL STEL	551 mg/m ³
	125 ppm
OEL chemical category	Skin, Skin notation
Bulgaria - Occupational Exposure Limits	
Local name	Етилбензен
OEL TWA	435 mg/m ³
OEL STEL	545 mg/m ³
Remark	Кожа (възможна е значителна резорбция чрез кожата); • (Химични агенти, за които са определени гранични стойности във въздуха на работната среда за Европейската общност)
Regulatory reference	Наредба № 13 от 30.12.2003 г. за защита на работещите от рискове, свързани с експозиция на химични агенти при работа (изм. и доп. ДВ. бр. 47 от 2021 г., в сила от 04.06.2021 г.)
Bulgaria - Biological limit values	
Local name	Етилбензен
BLV	2000 mg/g creatinine Parameter: Mandelic acid and Phenylglyoxylic acid - total - Medium: urine - Sampling time: at the end of exposure or end of work shift (possible significant absorption through the skin)
Regulatory reference	Наредба № 13 от 30.12.2003 г. за защита на работещите от рискове, свързани с експозиция на химични агенти при работа (изм. и доп. ДВ. бр. 47 от 2021 г., в сила от 04.06.2021 г.)
Croatia - Occupational Exposure Limits	
Local name	Etilbenzen
GVI (OEL TWA)	442 mg/m ³

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ethylbenzene (100-41-4)	
	100 ppm
KGVI (OEL STEL)	884 mg/m ³
	200 ppm
Remark	Direktiva: 2000/39/EZ. Napomena: Koža (razvrstana kao tvar koja nadražuje kožu (H315))
OEL chemical category	Skin notation
Regulatory reference	Pravilnik o zaštiti radnika od izloženosti opasnim kemikalijama na radu, graničnim vrijednostima izloženosti i biološkim graničnim vrijednostima (NN 148/2023)
Croatia - Biological limit values	
Local name	Etilbenzen
BLV	1,5 mg/l Parameter: Ethylbenzene - Medium: blood - Sampling time: during exposure 1,5 g/g creatinine Parameter: Mandelic acid - Medium: urine - Sampling time: at the end of the work shift and at the end of the working week (calculated on the average Creatinine value of 1.2 g/L urine)
Regulatory reference	Pravilnik o zaštiti radnika od izloženosti opasnim kemikalijama na radu, graničnim vrijednostima izloženosti i biološkim graničnim vrijednostima (NN 91/2018)
Cyprus - Occupational Exposure Limits	
Local name	Αιθυλοβενζένιο
OEL TWA	442 mg/m ³
	100 ppm
OEL STEL	884 mg/m ³
	200 ppm
OEL chemical category	Skin-potential for cutaneous absorption
Remark	δέρμα
Regulatory reference	Κανονισμοί του 2007 (Κ.Δ.Π. 295/2007)
Czech Republic - Occupational Exposure Limits	
Local name	Ethylbenzen
PEL (OEL TWA)	200 mg/m ³
	45,33 ppm
NPK-P (OEL C)	500 mg/m ³
	113,32 ppm
Remark	D - při expozici se významně uplatňuje pronikání faktoru kůže, B - u látky je zaveden biologický expoziční test (BET) v moči nebo krvi, P - u látky nelze vyloučit závažné pozdní účinky (s větou H372, H373).
OEL chemical category	Potential for cutaneous absorption
Regulatory reference	Nařízení vlády č. 361/2007 Sb. (Předpis 330/2023 Sb.)

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ethylbenzene (100-41-4)	
Czech Republic - Biological limit values	
Local name	Ethylbenzen
BLV	1100 µmol/mmol Creatinine Parameter: Mandelic acid - Medium: urine - Sampling time: end of shift 1500 mg/g creatinine Parameter: Mandelic acid - Medium: urine - Sampling time: end of shift
Regulatory reference	Vyhláška č. 107/2013 Sb. (kterou se mění vyhláška č. 432/2003 Sb.)
Denmark - Occupational Exposure Limits	
Local name	Ethylbenzen
OEL TWA	217 mg/m ³
	50 ppm
OEL STEL	434 mg/m ³
	100 ppm
Remark	E (betyder, at stoffet har en EF-grænseværdi); H (betyder, at stoffet kan optages gennem huden); K (betyder, at stoffet anses for at kunne være kræftfremkaldende)
OEL chemical category	Potential for cutaneous absorption
Regulatory reference	BEK nr 202 af 21/02/2023
Estonia - Occupational Exposure Limits	
Local name	Etüülbenseen
OEL TWA	442 mg/m ³
	100 ppm
OEL STEL	884 mg/m ³
	200 ppm
Remark	A (Naha kaudu kergesti imenduv aine), S (Sensibiliseeriv aine)
OEL chemical category	Skin notation, Sensitizer
Regulatory reference	Vabariigi Valitsuse 20. märtsi 2001. a määruse nr 105 (RT I, 21.12.2022, 3)
Finland - Occupational Exposure Limits	
Local name	Etylibentseeni
HTP (OEL TWA)	220 mg/m ³
	50 ppm
HTP (OEL STEL)	880 mg/m ³
	200 ppm
Remark	Iho
OEL chemical category	Potential for cutaneous absorption
Regulatory reference	HTP-ARVOT 2020 (Sosiaali- ja terveysministeriö)
Finland - Biological limit values	
Local name	Etylibentseeni

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ethylbenzene (100-41-4)	
BLV	Parameter: Mandelic acid - Medium: urine - Sampling time: after the shift after a working week or exposure period
Regulatory reference	HTP-ARVOT 2020 (Sosiaali- ja terveystieteiden ministeriö)
France - Occupational Exposure Limits	
Local name	Ethylbenzène
VME (OEL TWA)	88,4 mg/m ³ (restrictive limit)
	20 ppm (restrictive limit)
VLE (OEL C/STEL)	442 mg/m ³ (restrictive limit)
	100 ppm (restrictive limit)
Remark	Valeurs réglementaires contraignantes. Risque de pénétration percutanée
OEL chemical category	Risk of cutaneous absorption
Regulatory reference	Article R4412-149 du Code du travail (réf.: INRS ED 6443, 2022; Outil65; Décret n° 2019-1487; Décret n° 2020-1546; Décret n° 2021-434; Décret n° 2021-1849)
France - Biological limit values	
BLV	Parameter: Mandelic acid - Medium: urine - Sampling time: end of shift at end of workweek (per the Authority, the values for this substance must be decided and/or determined on a case by case basis. Guidance for the calculation of and interpretation of values is provided in the source)
Germany - Occupational Exposure Limits (TRGS 900)	
Local name	Ethylbenzol
Occupational exposure limit value (mg/m ³) (TRGS900)	88 mg/m ³ (the risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed)
Occupational exposure limit value (ppm) (TRGS900)	20 ppm (the risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed)
Peak exposure limitation factor	2(II)
Remark	DFG - Senatskommission zur Prüfung gesundheitsschädlicher Arbeitsstoffe der DFG (MAK-Kommission); H - hautresorptiv; Y - Ein Risiko der Fruchtschädigung braucht bei Einhaltung des Arbeitsplatzgrenzwertes und des biologischen Grenzwertes (BGW) nicht befürchtet zu werden; EU - Europäische Union (Von der EU wurde ein Luftgrenzwert festgelegt: Abweichungen bei Wert und Spitzenbegrenzung sind möglich)
Chemical category	Skin notation
Regulatory reference	TRGS900
Germany - Biological limit values (TRGS 903)	
Local name	Ethylbenzol
Biological limit value	250 mg/g creatinine Parameter: Mandelic acid plus Phenylglyoxylic acid - Medium: urine - Sampling time: end of shift
Regulatory reference	TRGS 903
Gibraltar - Occupational Exposure Limits	
Local name	Ethylbenzene

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ethylbenzene (100-41-4)	
OEL TWA	442 mg/m ³ 100 ppm
OEL STEL	884 mg/m ³ 200 ppm
Remark	Skin
OEL chemical category	Skin notation
Regulatory reference	Factories (Control of Chemical Agents at Work) Regulations 2003 (LN. 2018/181)
Greece - Occupational Exposure Limits	
Local name	Αιθυλοβενζόλιο
OEL TWA	435 mg/m ³ 100 ppm
OEL STEL	545 mg/m ³ 125 ppm
Regulatory reference	Π.Δ. 90/1999 - Προστασία της υγείας των εργαζομένων που εκτίθενται σε ορισμένους χημικούς παράγοντες κατά τη διάρκεια της εργασίας τους
Hungary - Occupational Exposure Limits	
Local name	ETILBENZOL
AK (OEL TWA)	442 mg/m ³
CK (OEL STEL)	884 mg/m ³
Remark	b (Bőrön át is felszívódik), i (ingerlő anyag, amely izgatja a bőrt, nyálkahártyát, szemet vagy mindhármat), BEM (biológiai expozíciós mutató); EU1 (2000/39/EK irányelvben közölt érték); T (Azok az anyagok, amelyek egészségkárosító hatása TARTÓS expozíciót követően jelentkezik)
OEL chemical category	Potential for cutaneous absorption
Regulatory reference	5/2020. (II. 6.) ITM rendelet - A kémiai kóroki tényezők hatásának kitett munkavállalók egészségének és biztonságának védelméről
Hungary - Biological Exposure Indices	
Local name	Etilbenzol
BEI	1500 mg/g creatinine Biológiai expozíciós (hatás) mutató: mandulasav - Biológiai minta: vizeletben - Mintavétel ideje: mhev., m.v. (munkahét végén, műszak végén) 1110 μmol/mmol Creatinine Biológiai expozíciós (hatás) mutató: mandulasav - Biológiai minta: vizeletben - Mintavétel ideje: mhev., m.v. (munkahét végén, műszak végén)
Regulatory reference	5/2020. (II. 6.) ITM rendelet - A kémiai kóroki tényezők hatásának kitett munkavállalók egészségének és biztonságának védelméről
Ireland - Occupational Exposure Limits	
Local name	Ethylbenzene
OEL TWA	442 mg/m ³

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ethylbenzene (100-41-4)	
	100 ppm
OEL STEL	884 mg/m ³
	200 ppm
Remark	Sk (Substances which have the capacity to penetrate intact skin when they come in contact with it, and be absorbed into the body), IOELV (Indicative Occupational Exposure Limit Values)
OEL chemical category	Potential for cutaneous absorption
Regulatory reference	Chemical Agents Code of Practice 2021
Ireland - Biological limit values	
Local name	Ethyl benzene
BMGV	0,7 g/g creatinine Parameter: mandelic acid and phenylglyoxylic acid - Medium: urine - Sampling time: End of shift at end of workweek - Notations: Ns (Non-specific), Sq (Semi-quantitative) Parameter: ethylbenzene - Medium: end-exhaled air - Sampling time: Not critical - Notations: Sq (Semi-quantitative)
Regulatory reference	Biological Monitoring Guidelines (HSA, 2011)
Italy - Occupational Exposure Limits	
Local name	Etilbenzene
OEL TWA	442 mg/m ³
	100 ppm
OEL STEL	884 mg/m ³
	200 ppm
Remark	Cute
OEL chemical category	skin - potential for cutaneous absorption
Regulatory reference	Allegato XXXVIII del D.Lgs. 9 aprile 2008, n. 81 e s.m.i.
Latvia - Occupational Exposure Limits	
Local name	Etilbenzols
OEL TWA	442 mg/m ³
	100 ppm
OEL STEL	884 mg/m ³
	200 ppm
Remark	Āda, letekme uz dzirdi
OEL chemical category	skin - potential for cutaneous exposure
Regulatory reference	Ministru kabineta 2007. gada 15. maija noteikumiem Nr. 325 (Grozījumi Ministru kabineta 2015. gada 7. aprīlī noteikumiem Nr. 163)
Lithuania - Occupational Exposure Limits	
Local name	Etilbenzenas
IPRV (OEL TWA)	442 mg/m ³

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	100 ppm
TPRV (OEL STEL)	884 mg/m ³
	200 ppm
Remark	O (medžiaga į organizmą gali prasiskverbti pro nepažeistą odą)
OEL chemical category	Skin notation
Regulatory reference	LIETUVOS HIGIENOS NORMA HN 23:2011 (Nr. V-695/A1-272, 2018-06-12)
Luxembourg - Occupational Exposure Limits	
Local name	Ethylbenzène
OEL TWA	442 mg/m ³
	100 ppm
OEL STEL	884 mg/m ³
	200 ppm
OEL chemical category	Possibility of significant uptake through the skin
Remark	Peau
Regulatory reference	Mémorial A N° 226 de 2021 concernant la protection de la sécurité et de la santé des salariés contre les risques liés à des agents chimiques sur le lieu de travail
Malta - Occupational Exposure Limits	
Local name	Ethylbenzene
OEL TWA	442 mg/m ³
	100 ppm
OEL STEL	884 mg/m ³
	200 ppm
Remark	Skin # Ġilda
OEL chemical category	Possibility of significant uptake through the skin
Regulatory reference	S.L.424.24 - Chemical Agents at Work Regulations (L.N.356 of 2021)
Netherlands - Occupational Exposure Limits	
Local name	Ethylbenzeen
TGG-8u (OEL TWA)	215 mg/m ³
	48,6 ppm
TGG-15min (OEL STEL)	430 mg/m ³
	97,3 ppm
Remark	H (Huidopname) Stoffen die relatief gemakkelijk door de huid kunnen worden opgenomen, hetgeen een substantiële bijdrage kan betekenen aan de totale inwendige blootstelling, hebben in de lijst een H-aanduiding. Bij deze stoffen moeten naast maatregelen tegen inademing ook adequate maatregelen ter voorkoming van huidcontact worden genomen.
MAC chemical category	Skin notation

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Regulatory reference	Arbetsomstandighedenregeling 2024
Poland - Occupational Exposure Limits	
Local name	Etylobenzen
NDS (OEL TWA)	200 mg/m ³
NDSch (OEL STEL)	400 mg/m ³
Remark	Skóra (Oznakowanie substancji notacją „skóra” oznacza, że wchłanianie substancji przez skórę może być tak samo istotne jak przy narażeniu drogą oddechową).
Regulatory reference	Dz. U. 2018 poz. 1286 wraz z późn. zm.
Portugal - Indicative Occupational Exposure Limit (IOEL)	
Local name	Etilbenzeno
IOEL TWA	442 mg/m ³
	100 ppm
IOEL STEL	884 mg/m ³
	200 ppm
Remark	Cutânea.
Regulatory reference	Decreto-Lei n.º 1/2021 de 6 de janeiro
Portugal - Occupational Exposure Limits	
Local name	Etilbenzeno
OEL TWA	442 mg/m ³ (indicative limit value)
	100 ppm (indicative limit value)
OEL STEL	884 mg/m ³ (indicative limit value)
	200 ppm (indicative limit value)
OEL chemical category	A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans, skin - potential for cutaneous exposure indicative limit value
Remark	A3 (Agente carcinogénico confirmado nos animais de laboratório com relevância desconhecida no Homem); IBE (Índice biológico de exposição)
Regulatory reference	Norma Portuguesa NP 1796:2014
Portugal - Biological Exposure Indices	
Local name	Etilbenzeno
BEI	0,7 g/g creatinine Parâmetro: Soma do ácido mandélico e do ácido fenilfloxílico - Meio: urina - Momento da amostragem: Fim do turno - Notação: Ne (Não específico)
Regulatory reference	Norma Portuguesa NP 1796:2014
Romania - Occupational Exposure Limits	
Local name	Etilbenzen
OEL TWA	442 mg/m ³
	100 ppm

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OEL STEL	884 mg/m ³
	200 ppm
OEL chemical category	Skin notation
Remark	P - posibilitatea unei penetrări cutanate importante
Regulatory reference	Hotărârea Guvernului nr. 1.218/2006 (Hotărârea nr. 53/2021)
Romania - Biological limit values	
Local name	Etilbenzen
BLV	1,5 g/g creatinine Parameter: Mandelic acid - Medium: urine - Sampling time: end of work week
Regulatory reference	Hotărârea Guvernului nr. 1.218/2006 (Hotărârea nr. 584/2018)
Serbia - Occupational Exposure Limits	
Local name	етилбензен
OEL TWA	442 mg/m ³
	100 ppm
OEL STEL	884 mg/m ³
	200 ppm
Remark	ЕУ* – напомена да се ради о хемијским материјама за које су утврђене индикативне граничне вредности изложености према Директиви 2000/39/ЕЗ (прва листа); К – напомена да хемијска материја може штетно деловати на кожу
Regulatory reference	ПРАВИЛНИК о превентивним мерама за безбедан и здрав рад при излагању хемијским материјама („Службени гласник РС”, бр. 106/09, 117/17 и 107/21)
Slovakia - Occupational Exposure Limits	
Local name	Etylbenzén
NPHV (OEL TWA)	442 mg/m ³
	100 ppm
NPHV (OEL STEL)	884 mg/m ³
	200 ppm
NPHV (OEL C)	884 mg/m ³
Remark	K - znamená, že faktor môže byť ľahko absorbovaný kožou
OEL chemical category	Potential for cutaneous absorption
Regulatory reference	Nariadenie vlády č. 355/2006 Z. z. (236/2020 Z. z.)
Slovakia - Biological limit values	
Local name	Etylbenzén
BLV	12 mg/l Parameter: 2 and 4-Ethylphenol - Medium: urine - Sampling time: end of exposure or work shift (also after all work shifts for long-term exposure) 1600 mg/l Parameter: Mandelic acid and Phenylglycolic acid - Medium: urine - Sampling time: end of exposure or work shift (also after all work shifts for long-term exposure)

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ethylbenzene (100-41-4)	
Regulatory reference	Nariadenie vlády č. 355/2006 Z. z. (Zmena: 471/2011 Z.z.)
Slovenia - Occupational Exposure Limits	
Local name	etilbenzen
OEL TWA	442 mg/m ³
	100 ppm
OEL STEL	884 mg/m ³
	200 ppm
Remark	K (Lastnost lažjega prehajanja snovi v organizem skozi kožo), Y (Snovi, pri katerih ni nevarnosti za zarodek ob upoštevanju mejnih vrednosti in bat vrednosti), BAT (Biološka mejna vrednost), EKA (Zveza med koncentracijo rakotvornih snovi v zraku na delovnem mestu in količino snovi in/ali njenih metabolitov v organizmu), EU
OEL chemical category	Potential for cutaneous absorption
Regulatory reference	Uradni list RS, št. 72/2021 z dne 11.5.2021
Slovenia - Biological limit values	
Local name	etilbenzen
BLV	250 mg/g creatinine Parameter: mandljeva kislina in fenilglioksilna kislina - Biološki vzorec: urin - Čas vzorčenja: ob koncu delovne izmene
Regulatory reference	Uradni list RS, št. 72/2021 z dne 11.5.2021
Spain - Occupational Exposure Limits	
Local name	Etilbenceno
VLA-ED (OEL TWA)	441 mg/m ³ (indicative limit value)
	100 ppm (indicative limit value)
VLA-EC (OEL STEL)	884 mg/m ³
	200 ppm
Remark	Vía dérmica (Indica que, en las exposiciones a esta sustancia, la aportación por la vía cutánea puede resultar significativa para el contenido corporal total si no se adoptan medidas para prevenir la absorción. En estas situaciones, es aconsejable la utilización del control biológico para poder cuantificar la cantidad global absorbida del contaminante), VLB® (Agente químico que tiene Valor Límite Biológico) , VLI (Agente químico para el que la U.E. estableció en su día un valor límite indicativo).
OEL chemical category	skin - potential for cutaneous absorption
Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2023. INSHT
Spain - Biological limit values	
BLV	700 mg/g creatinine Parameter: Mandelic acid plus Phenylglyoxylic acid - Medium: urine - Sampling time: end of workweek
Sweden - Occupational Exposure Limits	
Local name	Etylbensen

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ethylbenzene (100-41-4)	
NGV (OEL TWA)	220 mg/m ³
	50 ppm
KGV (OEL STEL)	884 mg/m ³
	200 ppm
Remark	H (Ämnet kan lätt upptas genom huden. Det föreskrivna gränsvärdet bedöms ge tillräckligt skydd endast under förutsättning att huden är skyddad mot exponering för ämnet ifråga)
OEL chemical category	Skin notation
Regulatory reference	Hygieniska gränsvärden (AFS 2018:1)
United Kingdom - Occupational Exposure Limits	
Local name	Ethylbenzene
WEL TWA (OEL TWA)	441 mg/m ³
	100 ppm
WEL STEL (OEL STEL)	552 mg/m ³
	125 ppm
Remark	Sk (Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity)
WEL chemical category	Potential for cutaneous absorption
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE
Iceland - Occupational Exposure Limits	
Local name	Etýlbensen
OEL TWA	200 mg/m ³
	50 ppm
OEL STEL	884 mg/m ³
	200 ppm
Remark	H (efnið getur auðveldlega borist inn í líkamann gegnum húð)
Regulatory reference	Reglugerð um mengunarmörk og aðgerðir til að draga úr mengun á vinnustöðum (Nr. 390/2009)
Norway - Occupational Exposure Limits	
Local name	Etylbenzen
Grenseverdi (OEL TWA)	20 mg/m ³
	5 ppm
Korttidsverdi (OEL STEL)	30 mg/m ³ (value calculated)
	10 ppm (value calculated)
Remark	H: Kjemikalier som kan tas opp gjennom huden; K: Kjemikalier som skal betraktes som kreftfremkallende; E: EU har en veiledende grenseverdi og/eller anmerkning for stoffet.

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OEL chemical category	Skin notation, Carcinogen
Regulatory reference	FOR-2023-12-18-2278
North Macedonia - Occupational Exposure Limits	
Local name	етилбензен
OEL TWA	442 mg/m ³
	100 ppm
KTV	2
Short time value [mg/m ³]	884 mg/m ³
Short time value	200 ppm
Remark	(KTV) краткотрајна вредност (КТВ) значи концентрација на опасни хемиски супстанции во воздухот на работното место внатре во зона на дишење, на која работникот без опасност по здравјето може да е изложен на покусо време. Изложеноста на краткотрајни вредности може да трае највеќе 15 минути и не смее да се повтори повеќе од четирипати во работната смена, при што меѓу две изложености на оваа концентрација мора да измине најмалку 60 минути. Краткотрајната вредност е изразена во mg/m ³ или во ml/m ³ (ppm) а е дадена како многукратни дозволени пречекорувања на граничната вредност; (K) својство на полесно пренесување на супстанците во организмот преку кожата; (BAT) биолошка гранична вредност – праг на биолошка гранична вредност, што значи предупредување на опасна хемиска супстанца и нејзини метаболити во ткивата, телесните течности или издишувањето на воздухот, без оглед на тоа, дали опасната хемиска супстанца е внесена во организмот со вдишување, голтање или преку кожата; (EU) European Union – гранична вредност, определена на ниво на Европската унија
Regulatory reference	Правилник за минималните барања за безбедност и здравје при работа на вработени од ризици поврзани со изложување на хемиски супстанции („Службен весник на Република Македонија” бр.46/10)
Switzerland - Occupational Exposure Limits	
Local name	Ethylbenzène / Ethylbenzol
MAK (OEL TWA)	220 mg/m ³
	50 ppm
KZGW (OEL STEL)	220 mg/m ³
	50 ppm
Notation	R, O ^B , B / H, O ^L , B
Remark	NIOSH
OEL chemical category	Skin notation
Regulatory reference	www.suva.ch, 01.01.2024
Switzerland - BAT	
Local name	Ethylbenzène / Ethylbenzol
BAT	600 mg/g creatinine Parameter: Mandelic acid and Phenylglyoxylacid - Medium: urine - Sampling time: end of shift (see also Styrene)
Remark	v. aussi styrène / s. auch Styrol

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Regulatory reference	Ordonnance 832.30 (OPA), article 50 al. 3, www.suva.ch/valeurs-limites/ / Verordnung 832.30 (VUV), Art. 50 Abs. 3, www.suva.ch/grenzwerte
USA - ACGIH - Occupational Exposure Limits	
Local name	Ethyl benzene
ACGIH OEL TWA	20 ppm
Remark (ACGIH)	TLV® Basis: URT & eye irr; ototoxicity; kidney eff; CNS impair. Notations: OTO (Ototoxicant); A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans); BEI
ACGIH chemical category	Confirmed Animal Carcinogen with Unknown Relevance to Humans
Regulatory reference	ACGIH 2024
USA - ACGIH - Biological Exposure Indices	
Local name	Ethyl benzene
BEI	0,15 g/g creatinine Parameter: Sum of mandelic acid and phenylglyoxylic acid - Medium: urine - Sampling time: end of shift (nonspecific)
Regulatory reference	ACGIH 2024

n-hexane (110-54-3)	
EU - Indicative Occupational Exposure Limit (IOEL)	
Local name	n-Hexane
IOEL TWA	72 mg/m ³
	20 ppm
Regulatory reference	COMMISSION DIRECTIVE 2006/15/EC
Albania - Occupational Exposure Limits	
Local name	n-Hekzan
OEL TWA	72 mg/m ³
	20 ppm
Regulatory reference	VENDIM Nr. 522, datë 6.8.2014 PËR MIRATIMIN E RREGULLORES "PËR MBROJTJEN E SIGURISË DHE SHËNDETIT TË PUNËMARRËSVE NGA RISQET E LIDHURA ME AGJENTËT KIMIKE NË PUNË"
Austria - Occupational Exposure Limits	
Local name	n-Hexan
MAK (OEL TWA)	72 mg/m ³
	20 ppm
MAK (OEL STEL)	288 mg/m ³
	80 ppm
Remark	Fortpflanzungsgefährdend: f
Regulatory reference	BGBI. II Nr. 156/2021

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n-hexane (110-54-3)	
Belgium - Occupational Exposure Limits	
Local name	n-Hexane # n-Hexaan
OEL TWA	72 mg/m ³
	20 ppm
Regulatory reference	Koninklijk besluit/Arrêté royal 16/11/2023
Bulgaria - Occupational Exposure Limits	
Local name	n-Хексан
OEL TWA	72 mg/m ³
	20 ppm
Remark	• (Химични агенти, за които са определени гранични стойности във въздуха на работната среда за Европейската общност)
Regulatory reference	Наредба № 13 от 30.12.2003 г. за защита на работещите от рискове, свързани с експозиция на химични агенти при работа (изм. и доп. ДВ. бр. 47 от 2021 г., в сила от 04.06.2021 г.)
Croatia - Occupational Exposure Limits	
Local name	n-Heksan
GVI (OEL TWA)	72 mg/m ³
	20 ppm
Remark	Direktiva: 2006/15/EZ. Napomena: Koža (razvrstana kao tvar koja nadražuje kožu (H315))
OEL chemical category	Skin notation
Regulatory reference	Pravilnik o zaštiti radnika od izloženosti opasnim kemikalijama na radu, graničnim vrijednostima izloženosti i biološkim graničnim vrijednostima (NN 148/2023)
Croatia - Biological limit values	
Local name	n-Heksan
BLV	150 µg/l Parameter: n-Hexane - Medium: blood - Sampling time: during exposure 40 ppm Parameter: n-Hexane - Medium: final exhaled air - Sampling time: during exposure 0,2 mg/g creatinine Parameter: 2-Hexanol - Medium: urine - Sampling time: at the end of the work shift (calculated on the average Creatinine value of 1.2 g/L urine) 5,3 mg/g creatinine Parameter: 2,5-Hexanedione - Medium: urine - Sampling time: at the end of the work shift (calculated on the average Creatinine value of 1.2 g/L urine)
Regulatory reference	Pravilnik o zaštiti radnika od izloženosti opasnim kemikalijama na radu, graničnim vrijednostima izloženosti i biološkim graničnim vrijednostima (NN 91/2018)
Cyprus - Occupational Exposure Limits	
Local name	n-εξάνιο
OEL TWA	72 mg/m ³

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n-hexane (110-54-3)	
	20 ppm
Regulatory reference	Κανονισμοί του 2007 (Κ.Δ.Π. 295/2007)
Czech Republic - Occupational Exposure Limits	
Local name	n-Hexan
PEL (OEL TWA)	70 mg/m ³
	19,5 ppm
NPK-P (OEL C)	200 mg/m ³
	55,8 ppm
Remark	I - dráždí sliznice (oči, dýchací cesty) resp. kůže, D - při expozici se významně uplatňuje pronikání faktoru kůže, P - u látky nelze vyloučit závažné pozdní účinky (s větou H372, H373).
OEL chemical category	Potential for cutaneous absorption
Regulatory reference	Nařízení vlády č. 361/2007 Sb. (Předpis 330/2023 Sb.)
Denmark - Occupational Exposure Limits	
Local name	n-Hexan
OEL TWA	72 mg/m ³
	20 ppm
OEL STEL	144 mg/m ³
	40 ppm
Remark	E (betyder, at stoffet har en EF-grænseværdi)
Regulatory reference	BEK nr 202 af 21/02/2023
Estonia - Occupational Exposure Limits	
Local name	n-heksaan
OEL TWA	72 mg/m ³
	20 ppm
Regulatory reference	Vabariigi Valitsuse 20. märtsi 2001. a määruse nr 105 (RT I, 21.12.2022, 3)
Finland - Occupational Exposure Limits	
Local name	n-Heksaani
HTP (OEL TWA)	72 mg/m ³
	20 ppm
Remark	Iho
OEL chemical category	Potential for cutaneous absorption
Regulatory reference	HTP-ARVOT 2020 (Sosiaali- ja terveysministeriö)
France - Occupational Exposure Limits	
Local name	n-Hexane
VME (OEL TWA)	72 mg/m ³ (restrictive limit)

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	20 ppm (restrictive limit)
Remark	Valeurs réglementaires contraignantes. Toxique pour la reproduction de catégorie 2
OEL chemical category	Reproductive Toxin category 2
Regulatory reference	Article R4412-149 du Code du travail (réf.: INRS ED 6443, 2022; Outil65; Décret n° 2019-1487; Décret n° 2020-1546; Décret n° 2021-434; Décret n° 2021-1849)
France - Biological limit values	
BLV	Parameter: 2,5-Hexanedione - Medium: urine - Sampling time: end of shift (per the Authority, the values for this substance must be decided and/or determined on a case by case basis. Guidance for the calculation of and interpretation of values is provided in the source)
Germany - Occupational Exposure Limits (TRGS 900)	
Local name	n-Hexan
Occupational exposure limit value (mg/m ³) (TRGS900)	180 mg/m ³ (the risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed)
Occupational exposure limit value (ppm) (TRGS900)	50 ppm (the risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed)
Peak exposure limitation factor	8(II)
Remark	DFG - Senatskommission zur Prüfung gesundheitsschädlicher Arbeitsstoffe der DFG (MAK-Kommission); EU - Europäische Union (Von der EU wurde ein Luftgrenzwert festgelegt: Abweichungen bei Wert und Spitzenbegrenzung sind möglich); Y - Ein Risiko der Fruchtschädigung braucht bei Einhaltung des Arbeitsplatzgrenzwertes und des biologischen Grenzwertes (BGW) nicht befürchtet zu werden
Regulatory reference	TRGS900
Germany - Biological limit values (TRGS 903)	
Local name	Hexan (n-Hexan)
Biological limit value	5 mg/l Parameter: 2,5-Hexandione plus 4,5-Dihydroxy-2-hexanone (after hydrolysis) - Medium: urine - Sampling time: end of shift
Regulatory reference	TRGS 903
Gibraltar - Occupational Exposure Limits	
Local name	n-Hexane
OEL TWA	72 mg/m ³ 20 ppm
Regulatory reference	Factories (Control of Chemical Agents at Work) Regulations 2003 (LN. 2018/181)
Greece - Occupational Exposure Limits	
Local name	Εξάνιο, n- (n- εξάνιο)
OEL TWA	72 mg/m ³ 20 ppm

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n-hexane (110-54-3)	
Regulatory reference	Π.Δ. 162/2007 - Προστασία της υγείας των εργαζομένων που εκτίθενται σε ορισμένους χημικούς παράγοντες κατά τη διάρκεια της εργασίας τους
Hungary - Occupational Exposure Limits	
Local name	n-HEXÁN
AK (OEL TWA)	72 mg/m ³
Remark	b (Bőrön át is felszívódik), i (ingerlő anyag, amely izgatja a bőrt, nyálkahártyát, szemet vagy mindhármát), BEM (biológiai expozíciós mutató); EU2 (2006/15/EK irányelvben közölt érték); T (Azok az anyagok, amelyek egészségkárosító hatása TARTÓS expozíciót követően jelentkezik)
OEL chemical category	Potential for cutaneous absorption
Regulatory reference	5/2020. (II. 6.) ITM rendelet - A kémiai kóroki tényezők hatásának kitett munkavállalók egészségének és biztonságának védelméről
Hungary - Biological Exposure Indices	
Local name	n-Hexán
BEI	2 mg/l Biológiai expozíciós (hatás) mutató: 2,5-hexán-dion (hidrolízis után) - Biológiai minta: vizeletben - Mintavétel ideje: m.v. (műszak végén) 18 μmol/l Biológiai expozíciós (hatás) mutató: 2,5-hexán-dion (hidrolízis után) - Biológiai minta: vizeletben - Mintavétel ideje: m.v. (műszak végén)
Regulatory reference	5/2020. (II. 6.) ITM rendelet - A kémiai kóroki tényezők hatásának kitett munkavállalók egészségének és biztonságának védelméről
Ireland - Occupational Exposure Limits	
Local name	n-Hexane
OEL TWA	72 mg/m ³
	20 ppm
OEL STEL	216 mg/m ³ (calculated)
	60 ppm (calculated)
Remark	IOELV (Indicative Occupational Exposure Limit Values), Sk (Substances which have the capacity to penetrate intact skin when they come in contact with it, and be absorbed into the body)
OEL chemical category	Potential for cutaneous absorption
Regulatory reference	Chemical Agents Code of Practice 2021
Ireland - Biological limit values	
Local name	Hexane
BMGV	0,4 mg/l Parameter: 2,5-Hexanedion - Medium: urine - Sampling time: End of shift at end of workweek
Regulatory reference	Biological Monitoring Guidelines (HSA, 2011)
Italy - Occupational Exposure Limits	
Local name	n-Esano
OEL TWA	72 mg/m ³
	20 ppm

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Regulatory reference	Allegato XXXVIII del D.Lgs. 9 aprile 2008, n. 81 e s.m.i.
Latvia - Occupational Exposure Limits	
Local name	n-Heksāns
OEL TWA	72 mg/m ³
	20 ppm
Remark	letekme uz dzirdi
Regulatory reference	Ministru kabineta 2007. gada 15. maija noteikumiem Nr. 325 (Grozījumi Ministru kabineta 2015. gada 7. aprīlī noteikumiem Nr. 163)
Lithuania - Occupational Exposure Limits	
Local name	n-heksanas
IPRV (OEL TWA)	72 mg/m ³
	20 ppm
Remark	R (reprodukcijai toksiškas poveikis)
OEL chemical category	Reproductive toxin
Regulatory reference	LIETUVOS HIGIENOS NORMA HN 23:2011 (Nr. V-695/A1-272, 2018-06-12)
Luxembourg - Occupational Exposure Limits	
Local name	n-Hexane
OEL TWA	72 mg/m ³
	20 ppm
Regulatory reference	Mémorial A N° 226 de 2021 concernant la protection de la sécurité et de la santé des salariés contre les risques liés à des agents chimiques sur le lieu de travail
Malta - Occupational Exposure Limits	
Local name	n-Hexane
OEL TWA	72 mg/m ³
	20 ppm
Regulatory reference	S.L.424.24 - Chemical Agents at Work Regulations (L.N.356 of 2021)
Netherlands - Occupational Exposure Limits	
Local name	n-Hexaan
TGG-8u (OEL TWA)	72 mg/m ³
	20 ppm
TGG-15min (OEL STEL)	144 mg/m ³
	40 ppm
Regulatory reference	Arbeidsomstandighedenregeling 2024
Poland - Occupational Exposure Limits	
Local name	Heksan (n-heksan)
NDS (OEL TWA)	72 mg/m ³

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Remark	Skóra (Oznakowanie substancji notacją „skóra” oznacza, że wchłanianie substancji przez skórę może być tak samo istotne jak przy narażeniu drogą oddechową).
Regulatory reference	Dz. U. 2018 poz. 1286 wraz z późn. zm.
Portugal - Indicative Occupational Exposure Limit (IOEL)	
Local name	n-Hexano
IOEL TWA	72 mg/m ³
	20 ppm
Regulatory reference	Decreto-Lei n.º 1/2021 de 6 de janeiro
Portugal - Occupational Exposure Limits	
Local name	n-Hexano
OEL TWA	72 mg/m ³ (indicative limit value)
	20 ppm (indicative limit value)
OEL chemical category	skin - potential for cutaneous exposure
Remark	P (Toxicidade percutânea); IBE (Índice biológico de exposição)
Regulatory reference	Norma Portuguesa NP 1796:2014
Portugal - Biological Exposure Indices	
Local name	n-Hexano
BEI	0,4 mg/l Parâmetro: 2,5-Hexanodiona - Meio: urina - Momento da amostragem: Fim do turno no fim da semana de trabalho - Notação: Sem hidrólise
Regulatory reference	Norma Portuguesa NP 1796:2014
Romania - Occupational Exposure Limits	
Local name	n-Hexan
OEL TWA	72 mg/m ³
	20 ppm
Remark	R2 - susceptibil de a dăuna fertilității
Regulatory reference	Hotărârea Guvernului nr. 1.218/2006 (Hotărârea nr. 53/2021)
Romania - Biological limit values	
Local name	N-hexan
BLV	5 mg/g creatinine Parameter: 2,5-Hexandion - Medium: urine - Sampling time: end of shift
Regulatory reference	Hotărârea Guvernului nr. 1.218/2006 (Hotărârea nr. 584/2018)
Serbia - Occupational Exposure Limits	
Local name	н-хексан
OEL TWA	72 mg/m ³
	20 ppm

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n-hexane (110-54-3)	
Remark	ЕУ** – напомена да се ради о хемијским материјама за које су утврђене индикативне граничне вредности изложености према Директиви 2006/15/ЕЗ (друга листа)
Regulatory reference	ПРАВИЛНИК о превентивним мерама за безбедан и здрав рад при излагању хемијским материјама („Службени гласник РС”, бр. 106/09, 117/17 и 107/21)
Slovakia - Occupational Exposure Limits	
Local name	n-Hexán
NPHV (OEL TWA)	20 mg/m ³
	72 mg/m ³
NPHV (OEL STEL)	20 ppm
	140 mg/m ³
NPHV (OEL C)	40 ppm
	140 mg/m ³
Regulatory reference	Nariadenie vlády č. 355/2006 Z. z. (236/2020 Z. z.)
Slovakia - Biological limit values	
Local name	n-Hexán
BLV	5 mg/l Parameter: 2,5-Hexanedione - Medium: urine - Sampling time: end of exposure or work shift 5 mg/l Parameter: 4,5-Dihydroxy-2-hexanone - Medium: urine - Sampling time: end of exposure or work shift
Regulatory reference	Nariadenie vlády č. 355/2006 Z. z. (Zmena: 471/2011 Z.z.)
Slovenia - Occupational Exposure Limits	
Local name	n-heksan
OEL TWA	72 mg/m ³
	20 ppm
OEL STEL	576 mg/m ³
	160 ppm
Remark	Y (Snovi, pri katerih ni nevarnosti za zarodek ob upoštevanju mejnih vrednosti in bat vrednosti), BAT (Biološka mejna vrednost), EU
OEL chemical category	Category 2
Regulatory reference	Uradni list RS, št. 72/2021 z dne 11.5.2021
Slovenia - Biological limit values	
Local name	n-heksan
BLV	5 mg/l Parameter: 2,5-heksandion in 4,5-dihidroksi-2-heksanon (po hidrolizi) - Biološki vzorec: urin - Čas vzorčenja: ob koncu delovne izmene
Regulatory reference	Uradni list RS, št. 72/2021 z dne 11.5.2021
Spain - Occupational Exposure Limits	
Local name	n-Hexano
VLA-ED (OEL TWA)	72 mg/m ³ (indicative limit value)

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n-hexane (110-54-3)	
	20 ppm (indicative limit value)
Remark	VLB® (Agente químico que tiene Valor Límite Biológico), VLI (Agente químico para el que la U.E. estableció en su día un valor límite indicativo).
Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2023. INSHT
Spain - Biological limit values	
Local name	n-Hexano
BLV	0,2 mg/l Parameter: 2,5-Hexanedione - Medium: urine - Sampling time: end of workweek (without hydrolysis)
Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2023. INSHT
Sweden - Occupational Exposure Limits	
Local name	n-Hexan
NGV (OEL TWA)	72 mg/m ³
	20 ppm
KGV (OEL STEL)	180 mg/m ³
	50 ppm
Regulatory reference	Hygieniska gränsvärden (AFS 2018:1)
United Kingdom - Occupational Exposure Limits	
Local name	n-Hexane
WEL TWA (OEL TWA)	72 mg/m ³
	20 ppm
WEL STEL (OEL STEL)	216 mg/m ³ (calculated)
	60 ppm (calculated)
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE
Iceland - Occupational Exposure Limits	
Local name	n-Hexan
OEL TWA	72 mg/m ³
	20 ppm
Regulatory reference	Reglugerð um mengunarmörk og aðgerðir til að draga úr mengun á vinnustöðum (Nr. 390/2009)
Norway - Occupational Exposure Limits	
Local name	n-heksan
Grenseverdi (OEL TWA)	72 mg/m ³
	20 ppm
Korttidsverdi (OEL STEL)	108 mg/m ³ (value calculated)
	30 ppm (value calculated)

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Remark	R: Kjemikalier som skal betraktes som reproduksjonstoksiske; E: EU har en veiledende grenseverdi og/eller anmerkning for stoffet.
OEL chemical category	Potential reproductive hazard
Regulatory reference	FOR-2023-12-18-2278
North Macedonia - Occupational Exposure Limits	
Local name	n-хексан
OEL TWA	72 mg/m ³ 20 ppm
Remark	(*) дополнување на граничната вредност заради донесената Директива на Комисијата 2006/15ES од 7 февруари 2006 за создавање на втора листа на индикативни гранични вредности за професионална изложеност според директивата 98/24/ЕС и за измените на директивата 91/322/ЕЕС и директивата 2000/39/ ЕС (Сл. весник бр. 38 од ден 9.2.2006, стр. 36); (BAT) биолошка гранична вредност – праг на биолошка гранична вредност, што значи предупредување на опасна хемиска супстанца и нејзини метаболити во ткивата, телесните течности или издишувањето на воздухот, без оглед на тоа, дали опасната хемиска супстанца е внесена во организмот со вдишување, голтање или преку кожата; (EU) European Union – гранична вредност, определена на ниво на Европската унија
Regulatory reference	Правилник за минималните барања за безбедност и здравје при работа на вработени од ризици поврзани со изложување на хемиски супстанции („Службен весник на Република Македонија” бр.46/10)
Switzerland - Occupational Exposure Limits	
Local name	n-Hexane / n-Hexan
MAK (OEL TWA)	180 mg/m ³ 50 ppm
KZGW (OEL STEL)	1440 mg/m ³ 400 ppm
Notation	R, R2, SS _c , B / H, R2, SS _c , B
Remark	NIOSH
OEL chemical category	Skin notation, Category 2 reproductive toxin
Regulatory reference	www.suva.ch, 01.01.2024
Switzerland - BAT	
Local name	n-Hexane / n-Hexan
BAT	5 mg/l Parameter: 2,5-Hexanedione plus 4,5-Dihydroxy-2-hexanone - Medium: urine - Sampling time: end of shift
Remark	Paramètre non spécifique. / Nicht spezifischer Parameter.
Regulatory reference	Ordonnance 832.30 (OPA), article 50 al. 3, www.suva.ch/valeurs-limites / Verordnung 832.30 (VUV), Art. 50 Abs. 3, www.suva.ch/grenzwerte
USA - ACGIH - Occupational Exposure Limits	
Local name	n-Hexane

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n-hexane (110-54-3)	
ACGIH OEL TWA	50 ppm
Remark (ACGIH)	TLV® Basis: CNS impair; peripheral neuropathy; eye irr. Notations: Skin; BEI
ACGIH chemical category	Skin - potential significant contribution to overall exposure by the cutaneous route
Regulatory reference	ACGIH 2024
USA - ACGIH - Biological Exposure Indices	
Local name	n-Hexane
BEI	0,5 mg/l Parameter: 2,5-Hexanedione without hydrolysis - Medium: urine - Sampling time: end of shift
Regulatory reference	ACGIH 2024

Cyclopentane (287-92-3)	
Belgium - Occupational Exposure Limits	
OEL TWA	1800 mg/m ³
	600 ppm
Denmark - Occupational Exposure Limits	
OEL TWA	850 mg/m ³
	300 ppm
OEL STEL	1700 mg/m ³
	600 ppm
France - Occupational Exposure Limits	
VME (OEL TWA)	1720 mg/m ³
	600 ppm
Greece - Occupational Exposure Limits	
OEL TWA	1720 mg/m ³
	600 ppm
Ireland - Occupational Exposure Limits	
OEL TWA	1720 mg/m ³
	600 ppm
OEL STEL	5160 mg/m ³ (calculated)
	1800 ppm (calculated)
Portugal - Occupational Exposure Limits	
OEL TWA	600 ppm
Spain - Occupational Exposure Limits	
VLA-ED (OEL TWA)	1745 mg/m ³
	600 ppm

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Cyclopentane (287-92-3)	
Switzerland - Occupational Exposure Limits	
MAK (OEL TWA)	1720 mg/m ³
	600 ppm
USA - ACGIH - Occupational Exposure Limits	
ACGIH OEL TWA	1000 ppm (explosion hazard)

8.1.2. Recommended monitoring procedures

Monitoring methods	
Monitoring methods	Personal air monitoring. Room air monitoring.

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

Additional information : Recommended monitoring procedures :. Personal air monitoring. Room air monitoring

8.1.5. Control banding

No additional information available

8.2. Exposure controls

Engineering measure(s)	: Provide adequate ventilation. Organisational measures to prevent/limit releases, dispersion and exposure. See Section 7 for information on safe handling. Use only outdoors or in a well-ventilated area. Handle substance within a closed system. Take precautionary measures against static discharges. Ensure equipment is adequately earthed. Use explosion-proof machinery, apparatus, ventilation facilities, tools etc.
Personal protective equipment	: The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Hand protection	: Wear chemically resistant gloves (tested to EN374) . Suitable material: The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.
Eye protection	: Use suitable eye protection (EN166): goggles
Body protection	: Wear suitable protective clothing
Respiratory protection	: In case of insufficient ventilation, wear suitable respiratory equipment. Half-face mask (DIN EN 140). full face mask (DIN EN 136). Filter type: The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used. (EN 137)
Thermal hazard protection	: Not required for normal conditions of use. Use dedicated equipment.
Environmental exposure controls	: Avoid release to the environment. Comply with applicable Community environmental protection legislation.

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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Colour	: Colourless.
Appearance	: Liquid.
Odour	: Mild odour.
Odour threshold	: No data available
Melting / freezing point	: No data available
Freezing point	: Not available
Initial boiling point and boiling range	: 66 (66 – 232) °C
Flammability	: Not applicable,liquid
Lower explosion limit	: 1,2 vol %
Upper explosion limit	: 7,4 vol %
Flash point	: -6 °C
Auto-ignition temperature	: 510 °C
Decomposition temperature	: No data available
pH	: No data available
Kinematic viscosity	: 0,5 mm ² /s (38 °C)
Dynamic viscosity	: No data available
Solubility	: Water: No data available
Partition coefficient n-octanol/water (Log Kow)	: Not available
Partition coefficient n-octanol/water	: No data available
Vapour pressure	: 3,3 psi (38 °C)
Vapour pressure at 50°C	: Not available
Density	: Not available
Relative density	: 0,84 (15,6 °C)
Vapour density	: No data available
Particle characteristics	: Not applicable

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No additional information available

9.2.2. Other safety characteristics

VOC content : 100 %

SECTION 10: Stability and reactivity

10.1. Reactivity

Highly flammable liquid and vapour. Reference to other sections: 10.4 & 10.5.

10.2. Chemical stability

Stable under normal conditions.

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10.3. Possibility of hazardous reactions

Vapours may form explosive mixture with air. No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. See Section 7 for information on safe handling.

10.5. Incompatible materials

oxidising substances. See Section 7 for information on safe handling.

10.6. Hazardous decomposition products

Reference to other sections 5.2.

SECTION 11: Toxicological information

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

Acute toxicity (oral)	: Harmful if swallowed.
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

Hydrogenated Pyrolysis Gasoline (68477-58-7)	
ATE CLP (oral)	1158,798 mg/kg bodyweight

Distillates (petroleum), light distillate hydrotreating process, low-boiling; Low boiling point hydrogen treated naphtha; [A complex combination of hydrocarbons obtained by the distillation of products from the light distillate hydrotreating process. It consists of hydrocarbons having carbon numbers predominantly in the range of C6 through C9 and boiling in the range of approximately 3 °C to 194 °C (37 °F to 382 °F).] (68410-97-9)

LD50/oral/rat	5170 mg/kg (Source: CHEMVIEW)
LD50/dermal/rabbit	> 3000 mg/kg (Source: ECHA_API)
LC50/inhalation/4h/rat (ppm)	> 12408 ppm/4h

benzene (71-43-2)	
LD50/oral/rat	> 2000 mg/kg
LD50 oral	> 2000 mg/kg Rat
LD50/dermal/rabbit	> 8200 mg/kg (Source: JAPAN_GHS)
LD50 dermal	> 8200 mg/kg rabbit
LC50/inhalation/4h/rat	44,66 mg/l/4h

toluene (108-88-3)	
LD50/oral/rat	5580 mg/kg
LD50 oral	5580 mg/kg
LD50/dermal/rabbit	> 12198 mg/kg
LD50 dermal	> 12198 mg/kg

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toluene (108-88-3)	
LC50/inhalation/4h/rat	12500 – 28800 mg/m ³

xylene (1330-20-7)	
LD50/oral/rat	3500 mg/kg (Source: JAPAN_GHS)
LD50/dermal/rat	1100 mg/kg bodyweight
LC50 Inhalation - Rat (Vapours)	11 mg/l/4h

ethylbenzene (100-41-4)	
LD50/oral/rat	3500 mg/kg (Source: JAPAN_GHS)
LD50/dermal/rabbit	15400 mg/kg (Source: JAPAN_GHS)
LC50/inhalation/4h/rat	17,4 mg/l/4h

n-hexane (110-54-3)	
LD50/oral/rat	25 g/kg (Source: NLM_CIP)
LD50/dermal/rabbit	3000 mg/kg (Source: NLM_CIP)
LC50/inhalation/4h/rat (ppm)	48000 ppm/4h

Cyclopentane (287-92-3)	
LD50/oral/rat	11400 mg/kg (Source: NLM_CIP)
LC50/inhalation/4h/rat	> 25,3 mg/l/4h

Skin corrosion/irritation	: Causes skin irritation. pH: No data available
Serious eye damage/irritation	: Causes serious eye irritation. pH: No data available
Respiratory or skin sensitisation	: Not classified (Based on available data, the classification criteria are not met)
Germ cell mutagenicity	: May cause genetic defects.
Carcinogenicity	: May cause cancer.

benzene (71-43-2)	
IARC group	1 - Carcinogenic to humans

toluene (108-88-3)	
IARC group	3 - Not classifiable

xylene (1330-20-7)	
IARC group	3 - Not classifiable

ethylbenzene (100-41-4)	
IARC group	2B - Possibly carcinogenic to humans

Reproductive toxicity	: Suspected of damaging fertility or the unborn child.
STOT-single exposure	: May cause drowsiness or dizziness.

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toluene (108-88-3)

STOT-single exposure : May cause drowsiness or dizziness.

n-hexane (110-54-3)

STOT-single exposure : May cause drowsiness or dizziness.

STOT-repeated exposure : Causes damage to organs through prolonged or repeated exposure.

benzene (71-43-2)

STOT-repeated exposure : Causes damage to organs through prolonged or repeated exposure.

toluene (108-88-3)

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

ethylbenzene (100-41-4)

STOT-repeated exposure : May cause damage to organs (hearing organs) through prolonged or repeated exposure.

n-hexane (110-54-3)

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

Aspiration hazard : May be fatal if swallowed and enters airways.

Hydrogenated Pyrolysis Gasoline (68477-58-7)

Kinematic viscosity : 0,5 mm²/s (38 °C)

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

Adverse health effects caused by endocrine disrupting properties : The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or substance(s) are not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

11.2.2. Other information

Other adverse effects : Causes damage to organs through prolonged or repeated exposure, Suspected of damaging fertility or the unborn child, May cause cancer, May cause genetic defects.

Other information : Symptoms related to the physical, chemical and toxicological characteristics, For further information see section 4

SECTION 12: Ecological information

12.1. Toxicity

Environmental properties : Harmful to aquatic life with long lasting effects. According to the criteria of the European classification and labelling system, the substance/the product has not to be labelled as "dangerous for the environment".

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Hazardous to the aquatic environment, short-term (acute) : Not classified
 Hazardous to the aquatic environment, long-term (chronic) : Harmful to aquatic life with long lasting effects.

benzene (71-43-2)	
LC50 - Fish [1]	10,7 – 14,7 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through] Source: EPA)
LC50 - Fish [2]	5,3 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [flow-through] Source: EPA)
LC50 - Other aquatic organisms [1]	29 mg/l (72 h - Pseudokirchneriella subcapitata)
EC50 - Crustacea [1]	8,76 – 15,6 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
EC50 - Crustacea [2]	10 mg/l (Exposure time: 48 h - Species: Daphnia magna)
EC50 72h - Algae [1]	29 mg/l (Species: Pseudokirchneriella subcapitata)

toluene (108-88-3)	
LC50 - Fish [1]	15,22 – 19,05 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through] Source: EPA)
LC50 - Fish [2]	12,6 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static] Source: EPA)
EC50 - Crustacea [1]	5,46 – 9,83 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
EC50 - Crustacea [2]	11,5 mg/l (Exposure time: 48 h - Species: Daphnia magna)
EC50 - Other aquatic organisms [2]	12,5 mg/l (Exposure time: 72 h - Species: Pseudokirchneriella subcapitata [static])
EC50 72h - Algae [1]	12,5 mg/l (Species: Pseudokirchneriella subcapitata [static])
EC50 96h - Algae [1]	> 433 mg/l (Species: Pseudokirchneriella subcapitata)

xylene (1330-20-7)	
LC50 - Fish [1]	13,4 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through] Source: EPA)
LC50 - Fish [2]	2,661 – 4,093 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [static] Source: EPA)
EC50 - Crustacea [1]	3,82 mg/l (Exposure time: 48 h - Species: water flea)
EC50 - Crustacea [2]	0,6 mg/l (Exposure time: 48 h - Species: Gammarus lacustris)

ethylbenzene (100-41-4)	
LC50 - Fish [1]	11 – 18 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [static] Source: EPA)
LC50 - Fish [2]	4,2 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [semi-static] Source: EPA)
EC50 - Crustacea [1]	1,8 – 2,4 mg/l (Exposure time: 48 h - Species: Daphnia magna)
EC50 72h - Algae [1]	4,6 mg/l (Species: Pseudokirchneriella subcapitata)
EC50 72h - Algae [2]	2,6 – 11,3 mg/l (Species: Pseudokirchneriella subcapitata [static])

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ethylbenzene (100-41-4)

EC50 96h - Algae [1]	> 438 mg/l (Species: Pseudokirchneriella subcapitata)
EC50 96h - Algae [2]	1,7 – 7,6 mg/l (Species: Pseudokirchneriella subcapitata [static])

n-hexane (110-54-3)

LC50 - Fish [1]	2,1 – 2,98 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through] Source: EPA)
LC50 - Fish [2]	(96h) 4,12 mg/l Lepomis macrochirus (Bluegill)
EC50 - Crustacea [1]	(48h) 3,87 mg/l

Cyclopentane (287-92-3)

EC50 - Crustacea [1]	10,5 mg/l (Exposure time: 48 h - Species: Daphnia magna)
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12.2. Persistence and degradability

Hydrogenated Pyrolysis Gasoline (68477-58-7)

Persistence and degradability	No additional information available.
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benzene (71-43-2)

Persistence and degradability	Readily biodegradable.
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12.3. Bioaccumulative potential

Hydrogenated Pyrolysis Gasoline (68477-58-7)

Partition coefficient n-octanol/water	No data available
Bioaccumulative potential	No additional information available.

benzene (71-43-2)

BCF - Fish [1]	3,5 – 4,4
Partition coefficient n-octanol/water	2,13
Bioaccumulative potential	Bioaccumulation unlikely.

toluene (108-88-3)

Partition coefficient n-octanol/water	2,73 (at 20 °C (at pH 7)
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xylene (1330-20-7)

BCF - Fish [1]	0,6 – 15
Partition coefficient n-octanol/water	2,77 – 3,15

ethylbenzene (100-41-4)

BCF - Fish [1]	(15 dimensionless)
Partition coefficient n-octanol/water	3,6 (at 20 °C (at pH 7.84)

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n-hexane (110-54-3)	
Partition coefficient n-octanol/water	4 (at 20 °C (at pH 7)

Cyclopentane (287-92-3)	
Partition coefficient n-octanol/water	3 (at 25 °C (at pH 7)

12.4. Mobility in soil

Hydrogenated Pyrolysis Gasoline (68477-58-7)	
Mobility in soil	No data available

12.5. Results of PBT and vPvB assessment

Hydrogenated Pyrolysis Gasoline (68477-58-7)	
Results of PBT assessment	Contains no PBT and/or vPvB substances $\geq 0.1\%$ assessed in accordance with REACH Annex XIII

12.6. Endocrine disrupting properties

Adverse effects on the environment caused by endocrine disrupting properties : The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or substance(s) are not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %.

12.7. Other adverse effects

Other adverse effects : No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : Avoid release to the environment. Dispose of empty containers and wastes safely. See Section 7 for information on safe handling. Refer to manufacturer/supplier for information on recovery/recycling. Recycling is preferred to disposal or incineration. If recycling is not possible, eliminate in accordance with local valid waste disposal regulations. Handle contaminated packages in the same way as the substance itself. Dispose of contaminated materials in accordance with current regulations. Packaging contaminated by the product : Do not pierce or burn, even after use. Never use pressure to empty container.

European waste catalogue (2001/573/EC, 75/442/EEC, 91/689/EEC) : This material and its container must be disposed of as hazardous waste
Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA	ADN	RID
14.1. UN number or ID number				
1203	1203	1203	1203	1203

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ADR	IMDG	IATA	ADN	RID
14.2. UN proper shipping name				
GASOLINE	GASOLINE	Gasoline	GASOLINE	GASOLINE
Transport document description				
UN 1203 GASOLINE, 3, II, (D/E)	UN 1203 GASOLINE, 3, II	UN 1203 Gasoline, 3, II	UN 1203 GASOLINE, 3, II	UN 1203 GASOLINE, 3, II
14.3. Transport hazard class(es)				
3	3	3	3	3
				
14.4. Packing group				
II	II	II	II	II
14.5. Environmental hazards				
Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No	Dangerous for the environment : No	Dangerous for the environment : No
No supplementary information available				

14.6. Special precautions for user

Special precautions for user : No data available

- Overland transport

Classification code (ADR) : F1
 Special provisions : 243, 534, 664
 Limited quantities (ADR) : 1I
 Excepted quantities (ADR) : E2
 Packing instructions (ADR) : P001, IBC02, R001
 Special packing provisions (ADR) : BB2
 Mixed packing provisions (ADR) : MP19
 Portable tank and bulk container instructions (ADR) : T4
 Portable tank and bulk container special provisions (ADR) : TP1
 Tank code (ADR) : LGBF
 Tank special provisions (ADR) : TU9
 Vehicle for tank carriage : FL
 Transport category (ADR) : 2
 Special provisions for carriage - Operation (ADR) : S2, S20
 Hazard identification number (Kemler No.) : 33
 Orange plates :

33
1203

 Tunnel restriction code : D/E

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EAC code : 3YE

- Transport by sea

Special provisions (IMDG) : 243
 Limited quantities (IMDG) : 1 L
 Excepted quantities (IMDG) : E2
 Packing instructions (IMDG) : P001
 IBC packing instructions (IMDG) : IBC02
 Tank instructions (IMDG) : T4
 Tank special provisions (IMDG) : TP1
 EmS-No. (Fire) : F-E
 EmS-No. (Spillage) : S-E
 Stowage category (IMDG) : E
 Properties and observations (IMDG) : Immiscible with water.

- Air transport

PCA Excepted quantities (IATA) : E2
 PCA Limited quantities (IATA) : Y341
 PCA limited quantity max net quantity (IATA) : 1L
 PCA packing instructions (IATA) : 353
 PCA max net quantity (IATA) : 5L
 CAO packing instructions (IATA) : 364
 CAO max net quantity (IATA) : 60L
 Special provisions (IATA) : A100
 ERG code (IATA) : 3H

- Inland waterway transport

Classification code (ADN) : F1
 Special provisions (ADN) : 243, 534
 Limited quantities (ADN) : 1 L
 Excepted quantities (ADN) : E2
 Carriage permitted (ADN) : T
 Equipment required (ADN) : PP, EX, A
 Ventilation (ADN) : VE01
 Number of blue cones/lights (ADN) : 1

- Rail transport

Classification code (RID) : F1
 Special provisions (RID) : 243, 534
 Limited quantities (RID) : 1L
 Excepted quantities (RID) : E2
 Packing instructions (RID) : P001, IBC02, R001
 Special packing provisions (RID) : BB2
 Mixed packing provisions (RID) : MP19
 Portable tank and bulk container instructions (RID) : T4

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Portable tank and bulk container special : TP1
 provisions (RID)
 Tank codes for RID tanks (RID) : LGBF
 Special provisions for RID tanks (RID) : TU9
 Transport category (RID) : 2
 Colis express (express parcels) (RID) : CE7
 Hazard identification number (RID) : 33

14.7. Maritime transport in bulk according to IMO instruments

Code: IBC : No data available.

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

REACH Annex XVII (Restriction List)

EU restriction list (REACH Annex XVII)		
Reference code	Applicable on	Entry title or description
5.	benzene	Benzene
28.	Hydrogenated Pyrolysis Gasoline ; Distillates (petroleum), light distillate hydrotreating process, low-boiling; Low boiling point hydrogen treated naphtha; [A complex combination of hydrocarbons obtained by the distillation of products from the light distillate hydrotreating process. It consists of hydrocarbons having carbon numbers predominantly in the range of C6 through C9 and boiling in the range of approximately 3 °C to 194 °C (37 °F to 382 °F).] ; benzene	Substances which are classified as carcinogen category 1A or 1B in Part 3 of Annex VI to Regulation (EC) No 1272/2008 and are listed in Appendix 1 or Appendix 2, respectively.

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EU restriction list (REACH Annex XVII)		
Reference code	Applicable on	Entry title or description
29.	Hydrogenated Pyrolysis Gasoline ; Distillates (petroleum), light distillate hydrotreating process, low-boiling; Low boiling point hydrogen treated naphtha; [A complex combination of hydrocarbons obtained by the distillation of products from the light distillate hydrotreating process. It consists of hydrocarbons having carbon numbers predominantly in the range of C6 through C9 and boiling in the range of approximately 3 °C to 194 °C (37 °F to 382 °F).] ; benzene	Substances which are classified as germ cell mutagen category 1A or 1B in Part 3 of Annex VI to Regulation (EC) No 1272/2008 and are listed in Appendix 3 or Appendix 4, respectively.
3(a)	Hydrogenated Pyrolysis Gasoline ; benzene ; toluene ; xylene ; ethylbenzene ; n-hexane ; Cyclopentane	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 2.1 to 2.4, 2.6 and 2.7, 2.8 types A and B, 2.9, 2.10, 2.12, 2.13 categories 1 and 2, 2.14 categories 1 and 2, 2.15 types A to F

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EU restriction list (REACH Annex XVII)		
Reference code	Applicable on	Entry title or description
3(b)	Hydrogenated Pyrolysis Gasoline ; Distillates (petroleum), light distillate hydrotreating process, low-boiling; Low boiling point hydrogen treated naphtha; [A complex combination of hydrocarbons obtained by the distillation of products from the light distillate hydrotreating process. It consists of hydrocarbons having carbon numbers predominantly in the range of C6 through C9 and boiling in the range of approximately 3 °C to 194 °C (37 °F to 382 °F).] ; benzene ; toluene ; xylene ; ethylbenzene ; n-hexane	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10
3(c)	Hydrogenated Pyrolysis Gasoline ; n-hexane ; Cyclopentane	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard class 4.1
40.	Hydrogenated Pyrolysis Gasoline ; benzene ; toluene ; xylene ; ethylbenzene ; n-hexane ; Cyclopentane	Substances classified as flammable gases category 1 or 2, flammable liquids categories 1, 2 or 3, flammable solids category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases, category 1, 2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 or not.
48.	toluene	Toluene
72.	benzene	The substances listed in column 1 of the Table in Appendix 12

REACH Annex XIV (Authorisation List)

Contains no substance(s) listed on REACH Annex XIV (Authorisation List)

REACH Candidate List (SVHC)

Contains no substance(s) listed on the REACH Candidate List

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PIC Regulation (Prior Informed Consent)

Contains substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals): Benzene (71-43-2)

POP Regulation (Persistent Organic Pollutants)

Contains no substance(s) listed on the POP list (Regulation EU 2019/1021 on persistent organic pollutants)

Ozone Regulation (EU 1005/2009)

Contains no substance(s) listed on the Ozone Depletion list (Regulation EU 1005/2009 on substances that deplete the ozone layer)

Dual-Use Regulation (428/2009)

Contains no substance subject to the COUNCIL REGULATION (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items.

VOC Directive (2004/42)

VOC content :100 %

Explosives Precursors Regulation (2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

Drug Precursors Regulation (273/2004)

Contains substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

Name	CN designation	CAS-No.	CN code	Category, Subcategory	Threshold	Annex
Toluene		108-88-3	2902 30 00	Category 3		Annex I

Detergent Regulation (648/2004/EC): Labelling of contents

15.1.2. National regulations

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France

Occupational diseases			
Code	Description		
RG 4	Hematopathies caused by benzene and all products containing it		
RG 4 BIS	Gastrointestinal disorders caused by benzene, toluene, xylenes and all products containing them		
RG 59	Occupational poisoning by hexane		
RG 84	Conditions caused by liquid organic solvents for professional use: saturated or unsaturated aliphatic or cyclic liquid hydrocarbons and mixtures thereof; liquid halogenated hydrocarbons; nitrated derivatives of aliphatic hydrocarbons; alcohols; glycols, glycol ethers; ketones; aldehydes; aliphatic and cyclic ethers, including tetrahydrofuran; esters; dimethylformamide and dimethylacetamine; acetonitrile and propionitrile; pyridine; dimethylsulfone and dimethylsulfoxide		
Installations classées			
No ICPE	Désignation de la rubrique	Code Régime	Rayon
4330.text	Liquides inflammables de catégorie 1, liquides inflammables maintenus à une température supérieure à leur point d'ébullition, autres liquides de point éclair inférieur ou égal à 60° C maintenus à une température supérieure à leur température d'ébullition ou dans des conditions particulières de traitement, telles qu'une pression ou une température élevée (1).		
4330.1	La quantité totale susceptible d'être présente dans les installations y compris dans les cavités souterraines étant : 1. Supérieure ou égale à 10 t (1) Conformément à la section 2.6.4.5 de l'annexe I du règlement (CE) n° 1272/2008, il n'est pas nécessaire de classer les liquides ayant un point d'éclair supérieur à 35° C dans la catégorie 3 si l'épreuve de combustion entretenue du point L 2, partie III, section 32, du Manuel d'épreuves et de critères des Nations unies a donné des résultats négatifs. Toutefois, cette remarque n'est pas valable en cas de température ou de pression élevée, et ces liquides doivent alors être classés dans cette catégorie. Quantité seuil bas au sens de l'article R. 511-10 : 10 t. Quantité seuil haut au sens de l'article R. 511-10 : 50 t.	A	2
4330.2	La quantité totale susceptible d'être présente dans les installations y compris dans les cavités souterraines étant : 2. Supérieure ou égale à 1 t mais inférieure à 10 t (1) Conformément à la section 2.6.4.5 de l'annexe I du règlement (CE) n° 1272/2008, il n'est pas nécessaire de classer les liquides ayant un point d'éclair supérieur à 35° C dans la catégorie 3 si l'épreuve de combustion entretenue du point L 2, partie III, section 32, du Manuel d'épreuves et de critères des Nations unies a donné des résultats négatifs. Toutefois, cette remarque n'est pas valable en cas de température ou de pression élevée, et ces liquides doivent alors être classés dans cette catégorie. Quantité seuil bas au sens de l'article R. 511-10 : 10 t. Quantité seuil haut au sens de l'article R. 511-10 : 50 t.	DC	
4331.text	Liquides inflammables de catégorie 2 ou catégorie 3 à l'exclusion de la rubrique 4330. La quantité totale susceptible d'être présente dans les installations y compris dans les cavités souterraines étant :		

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4331.1	1. Supérieure ou égale à 1000 t Quantité seuil bas au sens de l'article R. 511-10 : 5 000 t. Quantité seuil haut au sens de l'article R. 511-10 : 50 000 t.	A	2
4331.2	2. Supérieure ou égale à 100 t mais inférieure à 1000 t Quantité seuil bas au sens de l'article R. 511-10 : 5 000 t. Quantité seuil haut au sens de l'article R. 511-10 : 50 000 t.	E	
4331.3	3. Supérieure ou égale à 50 t mais inférieure à 100 t Quantité seuil bas au sens de l'article R. 511-10 : 5 000 t. Quantité seuil haut au sens de l'article R. 511-10 : 50 000 t.	DC	

Germany

Employment restrictions	: Observe restrictions according Act on the Protection of Working Mothers (MuSchG). Observe restrictions according Act on the Protection of Young People in Employment (JArbSchG).
Water hazard class (WGK)	: Not classified according to Regulation Governing Systems for Handling Substances Hazardous to Waters (AwSV).
Chemicals Prohibition Ordinance (ChemVerbotsV)	: This product is subject to ChemVerbotsV Annex 2 Entry 1. The following requirements must be observed: authorization requirement (according to § 6 paragraph 1 sentence 1), basic requirements for carrying out the delivery (according to § 8 paragraph 1, 3 and 4), identification and documentation (according to § 9 paragraph 1 to 3) and exclusion of the shipping route (according to § 10).
Hazardous Incident Ordinance (12. BImSchV)	: Listed in the 12. BImSchV (Annex I) under: 1.2.5.3 - Quantity threshold for operational area under § 1 para. 1 - Sentence 1 :5000000 kg - Sentence 2 :50000000 kg

Netherlands

Waterbezwaarlijkheid	: A (3) - hazardous for aquatic organisms, may have longterm hazardous effects in aquatic environment
SZW-lijst van kankerverwekkende stoffen	: Distillates (petroleum), light distillate hydrotreating process, low-boiling; Low boiling point hydrogen treated naphtha; [A complex combination of hydrocarbons obtained by the distillation of products from the light distillate hydrotreating process. It consists of hydrocarbons having carbon numbers predominantly in the range of C6 through C9 and boiling in the range of approximately 3 °C to 194 °C (37 °F to 382 °F).],benzene are listed
SZW-lijst van mutagene stoffen	: Distillates (petroleum), light distillate hydrotreating process, low-boiling; Low boiling point hydrogen treated naphtha; [A complex combination of hydrocarbons obtained by the distillation of products from the light distillate hydrotreating process. It consists of hydrocarbons having carbon numbers predominantly in the range of C6 through C9 and boiling in the range of approximately 3 °C to 194 °C (37 °F to 382 °F).],benzene are listed
SZW-lijst van reprotoxische stoffen – Borstvoeding	: None of the components are listed
SZW-lijst van reprotoxische stoffen – Vruchtbaarheid	: n-hexane is listed
SZW-lijst van reprotoxische stoffen – Ontwikkeling	: toluene,xylene are listed

Denmark

Classification remarks	: Emergency management guidelines for the storage of flammable liquids must be followed
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Danish National Regulations : Young people below the age of 18 years are not allowed to use the product
Pregnant/breastfeeding women working with the product must not be in direct contact with the product
The requirements from the Danish Working Environment Authorities regarding work with carcinogens must be followed during use and disposal

Switzerland

Chemicals Ordinance (ChemO, SR 813.11) : Group 1

15.2. Chemical safety assessment

Not applicable.

SECTION 16: Other information

Abbreviations and acronyms:

	ABM = Algemene beoordelingsmethodiek
	ADN = Accord Européen relatif au Transport International des Marchandises Dangereuses par voie de Navigation du Rhin
	ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route
	CLP = Classification, Labelling and Packaging Regulation according to 1272/2008/EC
	IATA = International Air Transport Association
	IMDG = International Maritime Dangerous Goods Code
	LEL = Lower Explosive Limit/Lower Explosion Limit
	UEL = Upper Explosion Limit/Upper Explosive Limit
	REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals
	BTT = Breakthrough time (maximum wearing time)
	DMEL = Derived Minimal Effect level
	DNEL = Derived No Effect Level
	EC50 = Median Effective Concentration
	EL50 = Median effective level
	ErC50 = EC50 in terms of reduction of growth rate
	ErL50 = EL50 in terms of reduction of growth rate
	EWC = European waste catalogue
	LC50 = Median lethal concentration
	LD50 = Median lethal dose
	LL50 = Median lethal level
	NA = Not applicable
	NOEC = No observed effect concentration
	NOEL: no-observed-effect level
	NOELR = No observed effect loading rate
	NOAEC = No observed adverse effect concentration
	NOAEL = No observed adverse effect level
	N.O.S. = Not Otherwise Specified
	OEL = Occupational Exposure Limits - Short Term Exposure Limits (STELs)
	PNEC = Predicted No Effect Concentration
	Quantitative structure-activity relationship (QSAR)
	STOT = Specific Target Organ Toxicity
	TWA = time weighted average
	VOC = Volatile organic compounds
	WGK = Wassergefährdungsklasse (Water Hazard Class under German Federal Water Management Act)

Sources of key data used to compile the datasheet : ECHA (European Chemicals Agency), Information supplier, Loli, Inchem.

Training advice : Training staff on good practice. Manipulations are to be done only by qualified and authorised persons.

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Other information

: Classification - Assessment method: CLP Calculation method (Article 9).
Physicochemical hazard assessment: Information given is based on tests on the mixture itself.

Full text of H- and EUH-statements:

Acute Tox. 4 (Dermal)	Acute toxicity (dermal), Category 4
Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Chronic 2	Hazardous to the aquatic environment – Chronic Hazard, Category 2
Aquatic Chronic 3	Hazardous to the aquatic environment – Chronic Hazard, Category 3
Asp. Tox. 1	Aspiration hazard, Category 1
Carc. 1A	Carcinogenicity, Category 1A
Carc. 1B	Carcinogenicity, Category 1B
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 2	Flammable liquids, Category 2
Flam. Liq. 3	Flammable liquids, Category 3
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H336	May cause drowsiness or dizziness.
H340	May cause genetic defects.
H350	May cause cancer.
H361	Suspected of damaging fertility or the unborn child.
H361d	Suspected of damaging the unborn child.
H361f	Suspected of damaging fertility.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
Muta. 1B	Germ cell mutagenicity, Category 1B
Repr. 2	Reproductive toxicity, Category 2
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT RE 1	Specific target organ toxicity – Repeated exposure, Category 1
STOT RE 2	Specific target organ toxicity – Repeated exposure, Category 2
STOT SE 3	Specific target organ toxicity – Single exposure, Category 3, Narcosis

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according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878
Classification according to Regulation (EC) No. 1272/2008 [CLP]
Labelling according to Regulation (EC) No. 1272/2008 [CLP]

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