



SAFETY DATA SHEET

Version #: 01

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

1.1. Product identifier

Trade name or designation of the mixture STEEL-IT 1030D Polyurethane Aerosol – White

Registration number -

Synonyms None.

Product code FGAE1030D (12 oz.), FGAE1030C (4.5 oz.), CASE1030D (12 of FGAE1030D), CASE1030C (12 of FGAE1030C)

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

Identified uses Paint / Industrial coating (topcoat).
Category: Pigmented metallic coating.

Uses advised against Uses other than the recommended use.
Do not spray on an open flame or other ignition source.

1.3. Details of the supplier of the safety data sheet

Manufacturer Stainless Steel Coatings, Inc.
Address 835 Sterling Road, Lancaster MA 01523-2915, USA
Telephone +1 (978) 365-9828
E-mail sds@STEEL-IT.com

Supplier HM Industrieservice GmbH
Address Großer Sand 3
76698 Ubstadt-Weiher, Germany
Telephone +49 7251 44127-0
Fax +49 7251 44127-29
E-mail info@hm-industrie.de
Website www.hm-industrie.de

1.4. Emergency telephone number CHEMTREC:
+1-703-527-3887 (International)

General in EU 112 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)

Austria National Poisons Information Centre +431 406 4343 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)

Belgium National Poisons Control Centre 070 245 245 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)

Bulgaria National Toxicological Information Centre +359 2 9154 233 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)

Croatia Poisons Information Centre +385 1 2348 342 (Hours of operation not provided. SDS/Product information may not be available for the Emergency Service.)

Cyprus Poison Centre 1401 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)

Czech Republic National Poisons Information Centre +420 224 919 293, or +420 224 915 402 (Hours of operation not provided. SDS/Product information may not be available for the Emergency Service.)

Denmark National Poisons Control Centre +45 82 12 12 12 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)

Estonia National Poisons Information Centre	16662 or abroad: (+372) 626 9390 (Monday 9:00AM to Saturday 9:00AM (closed on Sundays and on national holidays). SDS/Product information may not be available for the Emergency Service.)
Finland National Poison Information Centre	(09) 471 977 (direct) or (09) 4711 (exchange) (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)
France National Poisons Control Centre	ORFILA number (INRS): + 33 (0) 1 45 42 59 59 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)
Greece Poison Information Centre telephone number	(0030) 2107793777 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)
Hungary National Emergency Phone Number	+36-80-201-199 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)
Iceland Poison Centre	(+354) 543 2222 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)
Ireland National Poisons Information Centre	353 (1) 809 2566 Healthcare Professionals: 24 hours, 7 days a week
Latvia Emergency medical aid	113
Latvia Poison and Drug Information Centre	+371 67042473 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)
Lithuania Neatidėliotina informacija apsinuodijus	+370 5 236 20 52 or +37068753378 (Hours of operation not provided. SDS/Product information may not be available for the Emergency Service.)
Malta Accident and Emergency Department	2545 4030 (Hours of operation not provided. SDS/Product information may not be available for the Emergency Service.)
Netherlands National Poisons Information Centre (NVIC)	NVIC: +31 (0)88 755 8000 (Only for the purpose of informing medical personnel in cases of acute intoxications)
Norway Norwegian Poison Information Centre	22 59 13 00 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)
Portugal Poison Centre	800 250 250 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)
Romania Biroul RSI si Informare Toxicologica	021.318.36.06 (Available 8:00AM-3:00PM. SDS/Product information may not be available for the Emergency Service.)
Slovakia National Toxicological Information Centre	+421 2 5477 4166 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)
Spain Toxicology Information Service	+ 34 91 562 04 20 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)
Sweden National Poison Information Centre	112 - and ask for Poison Information (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)
Switzerland Tox Info Suisse	145 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)
Ireland National Poisons Information Centre	353 (1) 809 2566 Healthcare Professionals: 24 hours, 7 days a week

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Regulation (EC) No 1272/2008 as amended

Physical hazards

Aerosols	Category 1	H222 - Extremely flammable aerosol. H229 - Pressurized container: May burst if heated.
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Health hazards

Skin corrosion/irritation	Category 2	H315 - Causes skin irritation.
Skin sensitisation	Category 1	H317 - May cause an allergic skin reaction.

Carcinogenicity	Category 1B	H350 - May cause cancer.
Reproductive toxicity (inhalation)	Category 2	H361 - Suspected of damaging fertility or the unborn child by inhalation.
Specific target organ toxicity - single exposure	Category 3 narcotic effects	H336 - May cause drowsiness or dizziness.
Specific target organ toxicity - repeated exposure (inhalation)	Category 2 (nervous system)	H373 - May cause damage to organs (nervous system) through prolonged or repeated exposure by inhalation.
Environmental hazards		
Hazardous to the aquatic environment, long-term aquatic hazard	Category 2	H411 - Toxic to aquatic life with long lasting effects.

2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Contains: Benzene, 1-chloro-4-(trifluoromethyl)-, Distillates (petroleum), hydrotreated light, n-Hexane, Nickel, Butanone oxime

Hazard pictograms



Signal word Danger

Hazard statements

H222	Extremely flammable aerosol.
H229	Pressurized container: May burst if heated.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H336	May cause drowsiness or dizziness.
H350	May cause cancer.
H361	Suspected of damaging fertility or the unborn child by inhalation.
H373	May cause damage to organs (nervous system) through prolonged or repeated exposure by inhalation.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention

P201	Obtain special instructions before use.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260	Do not breathe mist/vapours/spray.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Response

P308 + P311	IF exposed or concerned: Call a POISON CENTRE/doctor.
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Storage Not assigned.

Disposal Not assigned.

Supplemental information on the label

Restricted to professional users.
 EUH211: Warning! Hazardous respirable droplets may be formed when sprayed. Do not breathe spray or mist.
 Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50°C.
 Do not pierce or burn, even after use. Do not spray on a naked flame or any incandescent material.

2.3. Other hazards

May displace oxygen and cause rapid suffocation.
 This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
 The mixture contains substance(s) in the list established in accordance with REACH Article 59(1) for having endocrine disrupting properties.
 The mixture contains substance(s) considered to have 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

3.2. Mixtures

General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
Benzene, 1-chloro-4-(trifluoromethyl)-	15 - 25	98-56-6 202-681-1	-	-	
Classification: Flam. Liq. 3;H226, Skin Sens. 1B;H317, Carc. 2;H351, Repr. 2;H361, Aquatic Chronic 2;H411					
Distillates (petroleum), hydrotreated light	10 - 20	64742-47-8 265-149-8	-	649-422-00-2	
Classification: Flam. Liq. 3;H226, Skin Irrit. 2;H315, STOT SE 3;H336, Asp. Tox. 1;H304, Aquatic Chronic 2;H411					
Propane	10 - 20	74-98-6 200-827-9	-	601-003-00-5	
Classification: Flam. Gas 1A;H220, Press. Gas;H280					
Titanium dioxide	10 - 20	13463-67-7 236-675-5	-	-	
Classification: -					
n-Hexane	5 - 10	110-54-3 203-777-6	-	601-037-00-0	#
Classification: 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					
Specific Concentration Limits: STOT RE 2;H373: C ≥ 5 %					
Xylene	< 1	1330-20-7 215-535-7	-	601-022-00-9	#
Classification: Flam. Liq. 3;H226, Acute Tox. 4;H312;(ATE: 1100 mg/kg bw), Acute Tox. 4;H332;(ATE: 11 mg/l), Skin Irrit. 2;H315, Eye Irrit. 2;H319, STOT SE 3;H335;H336, STOT RE 2;H373, Asp. Tox. 1;H304					
Chromium	< 0,5	7440-47-3 231-157-5	-	-	#
Classification: -					
Ethylbenzene	< 0,4	100-41-4 202-849-4	-	601-023-00-4	#
Classification: Flam. Liq. 2;H225, Acute Tox. 4;H332;(ATE: 11 mg/l), STOT RE 2;H373, Asp. Tox. 1;H304, Aquatic Chronic 3;H412					
Nickel	< 0,4	7440-02-0 231-111-4	-	028-002-01-4	
Classification: Skin Sens. 1;H317, Carc. 2;H351, STOT RE 1;H372, Aquatic Chronic 3;H412					
Butanone oxime	< 0,2	96-29-7 202-496-6	-	616-014-00-0	
Classification: Acute Tox. 3;H301;(ATE: 100 mg/kg bw), Acute Tox. 4;H312;(ATE: 1100 mg/kg bw), Skin Irrit. 2;H315, Eye Dam. 1;H318, Skin Sens. 1B;H317, Carc. 1B;H350, STOT SE 1;H370, STOT SE 3;H336, STOT RE 2;H373					
Copper	< 0,1	7440-50-8 231-159-6	-	029-024-00-X	ED
Classification: Aquatic Acute 1;H400(M=10), Aquatic Chronic 2;H411					

List of abbreviations and symbols that may be used above

#: This substance has been assigned Union workplace exposure limit(s).
ATE: Acute toxicity estimate.
ED: Endocrine disruptor
M: M-factor

Composition comments

The full text for all H-statements is displayed in section 16.
All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume. Components not listed are either non-hazardous or are below reportable limits.

SECTION 4: First aid measures

General information

IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.

4.1. Description of first aid measures

Inhalation	Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory tract irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention immediately.
Skin contact	Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions.
Eye contact	Rinse with water. Get medical attention if irritation develops and persists.
Ingestion	In the unlikely event of swallowing contact a physician or poison control centre. Rinse mouth. Do not induce vomiting without advice from poison control centre. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

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

May cause drowsiness or dizziness. Narcosis. Headache. Fatigue. Nausea, vomiting. Behavioural changes. Decrease in motor functions. Very high exposure can cause suffocation from lack of oxygen. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. Asphyxiation may bring about unconsciousness without warning and so rapidly that victim may be unable to protect themselves. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash. Prolonged exposure may cause chronic effects.

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

Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

SECTION 5: Firefighting measures

General fire hazards Extremely flammable aerosol. Contents under pressure. Pressurised container may explode when exposed to heat or flame.

5.1. Extinguishing media

Suitable extinguishing media Water fog. Alcohol resistant foam. Dry chemical powder. Carbon dioxide (CO₂).

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Contents under pressure. Pressurised container may explode when exposed to heat or flame. During fire, gases hazardous to health may be formed such as: Carbon oxides. Chlorine compounds. Fluorine compounds. Fumes of metal oxides.

5.3. Advice for firefighters

Special protective equipment for firefighters Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

Special fire fighting procedures In case of fire: Stop leak if safe to do so. Move containers from fire area if you can do so without risk. Containers should be cooled with water to prevent vapour pressure build up. Fight fire from protected location or safe distance. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out.

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist/vapours/spray. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

For emergency responders In the event of a leak evacuate all personnel until ventilation can restore oxygen concentrations to safe levels. Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks). Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist/vapours/spray. Emergency personnel need self-contained breathing equipment. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained.

6.2. Environmental precautions

Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

6.3. Methods and material for containment and cleaning up

Stop leak if you can do so without risk. Move the cylinder to a safe and open area if the leak is irreparable. Isolate area until gas has dispersed. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil etc) away from spilled material. Prevent product from entering drains.

Pick up undamaged aerosol cans mechanically. Dike leaked material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Scoop up used absorbent into drums or other appropriate container. Following product recovery, flush area with water. Retain and dispose of contaminated wash water.

Never return spills to original containers for re-use. Put material in suitable, covered, labelled containers.

6.4. Reference to other sections

For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Pressurised container: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. Do not spray on a naked flame or any other incandescent material. Do not smoke while using or until sprayed surface is thoroughly dry. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. All equipment used when handling the product must be grounded.

Do not breathe mist/vapours/spray. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. When using, do not eat, drink or smoke. Persons susceptible for allergic reactions should not handle this product. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Mechanical ventilation or local exhaust ventilation may be required. Do not enter storage areas or confined spaces unless adequately ventilated. Use only outdoors or in a well-ventilated area. Oxygen concentration should not fall below 19.5 % at sea level (pO₂ = 135 mmHg). Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices.

7.2. Conditions for safe storage, including any incompatibilities

Store locked up. Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50°C. Keep away from heat, sparks and open flame. Store in original tightly closed container. Store in a well-ventilated place. Stored containers should be periodically checked for general condition and leakage. Store away from incompatible materials (see section 10 of the SDS).

TRGS 510 storage class: 2B.

Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended

ANNEX 1, PART 1 Categories of dangerous substances

Hazard categories in accordance with Regulation (EC) No 1272/2008

- P3a FLAMMABLE AEROSOLS (Lower-tier requirements = 150 (net) tonnes; Upper-tier requirements = 500 (net) tonnes)

- E2 Hazardous to the Aquatic Environment Chronic (Lower-tier requirements = 200 tonnes; Upper-tier requirements = 500 tonnes)

7.3. Specific end use(s)

Paint / Industrial coating (topcoat).

Category: Pigmented metallic coating.

Observe industrial sector guidance on best practices.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

Austria. MAK List Components

Components	Type	Value	Form
Aluminium hydroxide (CAS 21645-51-2)	MAK	5 mg/m ³	Respirable fraction.
		10 mg/m ³	Inhalable fraction.
	STEL	20 mg/m ³	Inhalable fraction.
		10 mg/m ³	Respirable fraction.
Chromium (CAS 7440-47-3)	MAK	2 mg/m ³	
Copper (CAS 7440-50-8)	MAK	1 mg/m ³	Inhalable fraction.
		0,1 mg/m ³	Fume and respirable dust.
	STEL	4 mg/m ³	Inhalable fraction.

Austria. MAK List Components

Components	Type	Value	Form
		0,4 mg/m ³	Fume and respirable dust.
Ethylbenzene (CAS 100-41-4)	Ceiling	880 mg/m ³	
	MAK	200 ppm 440 mg/m ³ 100 ppm	
n-Hexane (CAS 110-54-3)	MAK	72 mg/m ³ 20 ppm	
	STEL	288 mg/m ³ 80 ppm	
Propane (CAS 74-98-6)	Ceiling	3600 mg/m ³ 2000 ppm	
	MAK	1800 mg/m ³ 1000 ppm	
Titanium dioxide (CAS 13463-67-7)	MAK	5 mg/m ³	Respirable dust.
	STEL	10 mg/m ³	Respirable dust.
Xylene (CAS 1330-20-7)	MAK	221 mg/m ³ 50 ppm	
	STEL	442 mg/m ³ 100 ppm	

Austria. TRK List Components

Components	Type	Value	Form
Nickel (CAS 7440-02-0)	STEL	2 mg/m ³	Inhalable dust.
	TWA	0,5 mg/m ³	Inhalable dust.

Belgium. OEL. Exposure Limit Values to Chemical Substances at Work, Code of Well-being at work, Book VI, Title 1 - Chemical agents, as amended

Components	Type	Value	Form
Chromium (CAS 7440-47-3)	TWA	0,5 mg/m ³	
Copper (CAS 7440-50-8)	TWA	1 mg/m ³	Dust and mist.
		0,2 mg/m ³	Fume.
Ethylbenzene (CAS 100-41-4)	STEL	551 mg/m ³ 125 ppm	
	TWA	87 mg/m ³ 20 ppm	
n-Hexane (CAS 110-54-3)	TWA	72 mg/m ³ 20 ppm	
Nickel (CAS 7440-02-0)	TWA	1 mg/m ³ 0,05 mg/m ³ 0,01 mg/m ³	Inhalable fraction. Alveolar fraction
Propane (CAS 74-98-6)	TWA	1000 ppm	
Titanium dioxide (CAS 13463-67-7)	TWA	10 mg/m ³	
Xylene (CAS 1330-20-7)	STEL	442 mg/m ³ 100 ppm	
	TWA	221 mg/m ³ 50 ppm	

Bulgaria. OELs. Ordinance No 13 on protection of workers against risks of exposure to chemical agents at work, as amended

Components	Type	Value	Form
Chromium (CAS 7440-47-3)	TWA	2 mg/m3	
Copper (CAS 7440-50-8)	TWA	0,1 mg/m3	
Ethylbenzene (CAS 100-41-4)	STEL	545 mg/m3	
	TWA	435 mg/m3	
n-Hexane (CAS 110-54-3)	TWA	72 mg/m3	
		20 ppm	
Nickel (CAS 7440-02-0)	TWA	0,05 mg/m3	
Propane (CAS 74-98-6)	TWA	1800 mg/m3	
Titanium dioxide (CAS 13463-67-7)	TWA	10 mg/m3	Respirable dust.
Xylene (CAS 1330-20-7)	STEL	442 mg/m3	
		100 ppm	
	TWA	221 mg/m3	
		50 ppm	

Croatia. OELs (GVI). Regulation on Protection of Workers against Exposure to Dangerous Chemicals at Work, OELs and Biological Limit Values, Annex I (NN 91/2018), as amended

Components	Type	Value	Form
Chromium (CAS 7440-47-3)	MAC	2 mg/m3	
Copper (CAS 7440-50-8)	MAC	1 mg/m3	
		0,2 mg/m3	Dust.
	STEL	2 mg/m3	
Ethylbenzene (CAS 100-41-4)	MAC	442 mg/m3	
		100 ppm	
	STEL	884 mg/m3	
		200 ppm	
n-Hexane (CAS 110-54-3)	MAC	72 mg/m3	
		20 ppm	
Nickel (CAS 7440-02-0)	MAC	0,5 mg/m3	
Titanium dioxide (CAS 13463-67-7)	MAC	4 mg/m3	Respirable dust.
		10 mg/m3	Total dust.
Xylene (CAS 1330-20-7)	MAC	221 mg/m3	
		50 ppm	
	STEL	442 mg/m3	
		100 ppm	

Cyprus. OELs. Control of factory atmosphere and dangerous substances in factories regulation, PI 311/73, as amended

Components	Type	Value	Form
Copper (CAS 7440-50-8)	TWA	0,2 mg/m3	Fume.
Titanium dioxide (CAS 13463-67-7)	TWA	10 mg/m3	

Cyprus. OELs. Occupational Exposure Limit Values of Chemicals at Work (Safety and Health at Work (Chem. Agents) Reg., Ann. 1, R.A.A. 268/2001, as amended)

Components	Type	Value
Chromium (CAS 7440-47-3)	TWA	2 mg/m3
Ethylbenzene (CAS 100-41-4)	STEL	884 mg/m3
		200 ppm
	TWA	442 mg/m3
		100 ppm

Cyprus. OELs. Occupational Exposure Limit Values of Chemicals at Work (Safety and Health at Work (Chem. Agents) Reg., Ann. 1, R.A.A. 268/2001, as amended)

Components	Type	Value
n-Hexane (CAS 110-54-3)	TWA	72 mg/m3
		20 ppm
Xylene (CAS 1330-20-7)	STEL	442 mg/m3
		100 ppm
	TWA	221 mg/m3
		50 ppm

Czech Republic. Occupational exposure limit values of chemicals at work (Decree on protection of health at work, 361/2007, Annex 2, Part A & Annex 3, Part A, as amended)

Components	Type	Value	Form
Chromium (CAS 7440-47-3)	Ceiling	1,5 mg/m3	Inhalable aerosol fraction
	TWA	0,5 mg/m3	Inhalable aerosol fraction
Copper (CAS 7440-50-8)	Ceiling	2 mg/m3	Inhalable aerosol fraction
		0,2 mg/m3	Respirable aerosol fraction
	TWA	1 mg/m3	Inhalable aerosol fraction
		0,1 mg/m3	Respirable aerosol fraction
Ethylbenzene (CAS 100-41-4)	Ceiling	500 mg/m3	
		113,32 ppm	
	TWA	200 mg/m3	
		45,33 ppm	
n-Hexane (CAS 110-54-3)	Ceiling	200 mg/m3	
		55,8 ppm	
	TWA	70 mg/m3	
		19,5 ppm	
Nickel (CAS 7440-02-0)	TWA	0,05 mg/m3	Inhalable aerosol fraction
Xylene (CAS 1330-20-7)	Ceiling	400 mg/m3	
		90,66 ppm	
	TWA	200 mg/m3	
		45,33 ppm	

Denmark. Work Environment Authority. Exposure Limits for Substances & Materials, Annex 2

Components	Type	Value	Form
Chromium (CAS 7440-47-3)	STEL	1 mg/m3	Dust.
	TLV	0,5 mg/m3	Dust.
Copper (CAS 7440-50-8)	STEL	2 mg/m3	Dust.
		0,2 mg/m3	Fume.
	TLV	1 mg/m3	Dust.
		0,1 mg/m3	Fume.
Ethylbenzene (CAS 100-41-4)	STEL	434 mg/m3	
		100 ppm	
	TLV	217 mg/m3	
		50 ppm	
n-Hexane (CAS 110-54-3)	STEL	144 mg/m3	
		40 ppm	
	TLV	72 mg/m3	
		20 ppm	
Nickel (CAS 7440-02-0)	STEL	0,1 mg/m3	Dust.
	TLV	0,05 mg/m3	Dust.

Denmark. Work Environment Authority. Exposure Limits for Substances & Materials, Annex 2

Components	Type	Value	Form
Propane (CAS 74-98-6)	STEL	3600 mg/m ³ 2000 ppm	
	TLV	1800 mg/m ³ 1000 ppm	
Titanium dioxide (CAS 13463-67-7)	STEL	12 mg/m ³	
	TLV	6 mg/m ³	
Xylene (CAS 1330-20-7)	STEL	442 mg/m ³ 100 ppm	
	TLV	109 mg/m ³ 25 ppm	

Estonia. OELs. Occupational Exposure Limits of Hazardous Substances (Regulation No. 105/2001, Annex), as amended

Components	Type	Value	Form
Aluminium hydroxide (CAS 21645-51-2)	TWA	5 mg/m ³	Fine dust, respiratory fraction
		10 mg/m ³	Total dust.
Chromium (CAS 7440-47-3)	TWA	2 mg/m ³	
Copper (CAS 7440-50-8)	TWA	1 mg/m ³	Total dust.
		0,2 mg/m ³	Fine dust.
Ethylbenzene (CAS 100-41-4)	STEL	884 mg/m ³ 200 ppm	
	TWA	442 mg/m ³ 100 ppm	
n-Hexane (CAS 110-54-3)	TWA	72 mg/m ³ 20 ppm	
Nickel (CAS 7440-02-0)	TWA	0,5 mg/m ³	
Propane (CAS 74-98-6)	TWA	1800 mg/m ³ 1000 ppm	
Titanium dioxide (CAS 13463-67-7)	TWA	5 mg/m ³	
Xylene (CAS 1330-20-7)	STEL	450 mg/m ³ 100 ppm	
	TWA	200 mg/m ³ 50 ppm	

Finland. HTP-arvot, App 3., Binding Limit Values, Social Affairs and Ministry of Health

Components	Type	Value	Form
Chromium (CAS 7440-47-3)	TWA	0,5 mg/m ³	
Copper (CAS 7440-50-8)	TWA	0,02 mg/m ³	Respirable dust and/or fume.
		0,02 mg/m ³	Respirable.
Distillates (petroleum), hydrotreated light (CAS 64742-47-8)	TWA	500 mg/m ³	
Ethylbenzene (CAS 100-41-4)	STEL	880 mg/m ³ 200 ppm	
	TWA	220 mg/m ³ 50 ppm	
n-Hexane (CAS 110-54-3)	STEL	2300 mg/m ³ 630 ppm	
		TWA	72 mg/m ³

Finland. HTP-arvot, App 3., Binding Limit Values, Social Affairs and Ministry of Health

Components	Type	Value	Form
Nickel (CAS 7440-02-0)	TWA	20 ppm 0,01 mg/m3	Respirable.
Propane (CAS 74-98-6)	STEL	2000 mg/m3	
	TWA	1100 ppm 1500 mg/m3	
Titanium dioxide (CAS 13463-67-7)	TWA	800 ppm 10 mg/m3	Dust.
Xylene (CAS 1330-20-7)	STEL	440 mg/m3	
	TWA	100 ppm 220 mg/m3 50 ppm	

France. OELs. Indicative Occupational Exposure Limits as Prescribed by Order of 30 June 2004, as amended

Components	Type	Value
Chromium (CAS 7440-47-3)	VME	2 mg/m3

France. OELs. Occupational Exposure Limits as Prescribed by Art. R.4412-149 of Labor Code, as amended

Components	Type	Value
Ethylbenzene (CAS 100-41-4)	VLE	442 mg/m3 100 ppm
	VME	88,4 mg/m3
n-Hexane (CAS 110-54-3)	VME	20 ppm 72 mg/m3
Xylene (CAS 1330-20-7)	VLE	20 ppm 442 mg/m3 100 ppm
	VME	221 mg/m3 50 ppm

France. Threshold Limit Values (VLEP) for Occupational Exposure to Chemicals in France, INRS ED 984

Components	Type	Value
Ethylbenzene (CAS 100-41-4)	VLE	442 mg/m3
Regulatory status:		Binding regulatory limit values (article R. 4412-149 of the Labor Code) 100 ppm
Regulatory status:		Binding regulatory limit values (article R. 4412-149 of the Labor Code)
Xylene (CAS 1330-20-7)	VLE	442 mg/m3
Regulatory status:		Binding regulatory limit values (article R. 4412-149 of the Labor Code) 100 ppm
Regulatory status:		Binding regulatory limit values (article R. 4412-149 of the Labor Code)

Germany. DFG MAK List (advisory OELs). Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (DFG), as updated

Components	Type	Value	Form
Aluminium hydroxide (CAS 21645-51-2)	TWA	4 mg/m3	Inhalable dust.
		1,5 mg/m3	Respirable dust.
Copper (CAS 7440-50-8)	TWA	0,01 mg/m3	Respirable fraction.
Distillates (petroleum), hydrotreated light (CAS 64742-47-8)	TWA	5 mg/m3	Respirable aerosol fraction
		350 mg/m3	Vapour.
		50 ppm	Vapour.

Germany. DFG MAK List (advisory OELs). Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (DFG), as updated

Components	Type	Value	Form
Ethylbenzene (CAS 100-41-4)	TWA	88 mg/m3 20 ppm	
n-Hexane (CAS 110-54-3)	TWA	180 mg/m3 50 ppm	
Propane (CAS 74-98-6)	TWA	1800 mg/m3 1000 ppm	
Titanium dioxide (CAS 13463-67-7)	TWA	0,3 mg/m3	Respirable fraction.
Xylene (CAS 1330-20-7)	TWA	220 mg/m3 50 ppm	

Germany. TRGS 900, Limit Values in the Ambient Air at the Workplace

Components	Type	Value	Form
Butanone oxime (CAS 96-29-7)	AGW	1 mg/m3 0,3 ppm	
Chromium (CAS 7440-47-3)	AGW	2 mg/m3	Inhalable fraction.
Distillates (petroleum), hydrotreated light (CAS 64742-47-8)	AGW	300 mg/m3	
Ethylbenzene (CAS 100-41-4)	AGW	88 mg/m3 20 ppm	
n-Hexane (CAS 110-54-3)	AGW	180 mg/m3 50 ppm	
Nickel (CAS 7440-02-0)	AGW	0,03 mg/m3 0,006 mg/m3	Inhalable fraction. Respirable fraction.
Propane (CAS 74-98-6)	AGW	1800 mg/m3 1000 ppm	
Titanium dioxide (CAS 13463-67-7)	AGW	10 mg/m3 1,25 mg/m3	Inhalable dust. Respirable dust.
Xylene (CAS 1330-20-7)	AGW	200 mg/m3	

Greece. OELs, Presidential Decree No. 307/1986, as amended

Components	Type	Value	Form
Chromium (CAS 7440-47-3)	TWA	1 mg/m3	
Copper (CAS 7440-50-8)	STEL	2 mg/m3	Dust.
	TWA	1 mg/m3	Dust.
		0,2 mg/m3	Fume.
Ethylbenzene (CAS 100-41-4)	STEL	545 mg/m3 125 ppm	
	TWA	435 mg/m3 100 ppm	
n-Hexane (CAS 110-54-3)	TWA	72 mg/m3 20 ppm	
Nickel (CAS 7440-02-0)	TWA	1 mg/m3	
Propane (CAS 74-98-6)	TWA	1800 mg/m3 1000 ppm	
Titanium dioxide (CAS 13463-67-7)	TWA	5 mg/m3 10 mg/m3	Respirable. Inhalable

Greece. OELs, Presidential Decree No. 307/1986, as amended

Components	Type	Value	Form
Xylene (CAS 1330-20-7)	STEL	650 mg/m3	
		150 ppm	
	TWA	435 mg/m3	
		100 ppm	

Hungary. OELs. Decree on protection of workers exposed to chemical agents (5/2020. (II.6)), Annex 1&2, as amended

Components	Type	Value	Form
Chromium (CAS 7440-47-3)	TWA	2 mg/m3	
Copper (CAS 7440-50-8)	STEL	0,2 mg/m3	
Ethylbenzene (CAS 100-41-4)	STEL	884 mg/m3	
		200 ppm	
	TWA	442 mg/m3	
		100 ppm	
n-Hexane (CAS 110-54-3)	TWA	72 mg/m3	
Xylene (CAS 1330-20-7)	STEL	442 mg/m3	
		100 ppm	
	TWA	221 mg/m3	
		50 ppm	

Iceland. OELs. Regulation 390/2009 on Pollution Limits and Measures to Reduce Pollution at the Workplace, as amended

Components	Type	Value	Form
Chromium (CAS 7440-47-3)	TWA	0,5 mg/m3	Dust.
Copper (CAS 7440-50-8)	TWA	1 mg/m3	Total dust.
		0,1 mg/m3	Respirable dust.
		884 mg/m3	
Ethylbenzene (CAS 100-41-4)	STEL	200 ppm	
		200 mg/m3	
	TWA	50 ppm	
		90 mg/m3	
n-Hexane (CAS 110-54-3)	TWA	25 ppm	
Nickel (CAS 7440-02-0)	TWA	0,05 mg/m3	Dust.
Propane (CAS 74-98-6)	TWA	1800 mg/m3	
		1000 ppm	
		6 mg/m3	
Titanium dioxide (CAS 13463-67-7)	TWA	6 mg/m3	
Xylene (CAS 1330-20-7)	STEL	442 mg/m3	
		100 ppm	
	TWA	109 mg/m3	
		25 ppm	

Ireland. OELVs, Schedules 1 & 2, Code of Practise for Chemical Agents and Carcinogens Regulations

Components	Type	Value	Form
Butanone oxime (CAS 96-29-7)	STEL	33 mg/m3	
		10 ppm	
	TWA	10 mg/m3	
		3 ppm	
Chromium (CAS 7440-47-3)	TWA	2 mg/m3	
Copper (CAS 7440-50-8)	TWA	1 mg/m3	Dust and mist.
		0,2 mg/m3	Fume.

Ireland. OELVs, Schedules 1 & 2, Code of Practise for Chemical Agents and Carcinogens Regulations

Components	Type	Value	Form
Ethylbenzene (CAS 100-41-4)	STEL	884 mg/m3	
		200 ppm	
	TWA	442 mg/m3	
		100 ppm	
n-Hexane (CAS 110-54-3)	TWA	72 mg/m3	
		20 ppm	
Nickel (CAS 7440-02-0)	TWA	0,5 mg/m3	
Titanium dioxide (CAS 13463-67-7)	TWA	4 mg/m3	Respirable dust.
		10 mg/m3	Total inhalable dust.
Xylene (CAS 1330-20-7)	STEL	442 mg/m3	
		100 ppm	
	TWA	221 mg/m3	
		50 ppm	

Italy. OELs

Components	Type	Value	Form
Aluminium hydroxide (CAS 21645-51-2)	TWA	1 mg/m3	Respirable fraction.
Chromium (CAS 7440-47-3)	TWA	0,5 mg/m3	
Copper (CAS 7440-50-8)	TWA	1 mg/m3	Dust and mist.
		0,2 mg/m3	Fume.
Ethylbenzene (CAS 100-41-4)	STEL	884 mg/m3	
		200 ppm	
	TWA	442 mg/m3	
		100 ppm	
n-Hexane (CAS 110-54-3)	TWA	72 mg/m3	
		20 ppm	
Nickel (CAS 7440-02-0)	TWA	1,5 mg/m3	Inhalable fraction.
Titanium dioxide (CAS 13463-67-7)	TWA	2,5 mg/m3	Respirable finescale particles
Xylene (CAS 1330-20-7)	STEL	442 mg/m3	
		100 ppm	
	TWA	221 mg/m3	
		50 ppm	

Latvia. OELs. Occupational Exposure Limits of Chemical Substances at Workplace (Reg. No. 325/ 2007, L.V. 80, Annex 1), as amended

Components	Type	Value
Aluminium hydroxide (CAS 21645-51-2)	TWA	6 mg/m3
Chromium (CAS 7440-47-3)	TWA	2 mg/m3
Copper (CAS 7440-50-8)	STEL	1 mg/m3
	TWA	0,5 mg/m3
Ethylbenzene (CAS 100-41-4)	STEL	884 mg/m3
		200 ppm
	TWA	442 mg/m3
		100 ppm
n-Hexane (CAS 110-54-3)	STEL	300 mg/m3
	TWA	72 mg/m3
		20 ppm

Latvia. OELs. Occupational Exposure Limits of Chemical Substances at Workplace (Reg. No. 325/ 2007, L.V. 80, Annex 1), as amended

Components	Type	Value
Nickel (CAS 7440-02-0)	TWA	0,05 mg/m ³
Propane (CAS 74-98-6)	STEL	300 mg/m ³
	TWA	100 mg/m ³
Titanium dioxide (CAS 13463-67-7)	TWA	10 mg/m ³
Xylene (CAS 1330-20-7)	STEL	442 mg/m ³
		100 ppm
	TWA	221 mg/m ³
		50 ppm

Lithuania. OELs. Limit Values for Chemical Substances, General Requirements (Hygiene Norm HN 23:2007)

Components	Type	Value	Form
Aluminium hydroxide (CAS 21645-51-2)	TWA	6 mg/m ³	
Benzene, 1-chloro-4-(trifluoromethyl)- (CAS 98-56-6)	TWA	20 mg/m ³	
Copper (CAS 7440-50-8)	TWA	1 mg/m ³	Inhalable fraction.
		0,2 mg/m ³	Respirable fraction.
Distillates (petroleum), hydrotreated light (CAS 64742-47-8)	STEL	500 mg/m ³	
	TWA	350 mg/m ³	
Ethylbenzene (CAS 100-41-4)	STEL	884 mg/m ³	
		200 ppm	
	TWA	442 mg/m ³	
		100 ppm	
n-Hexane (CAS 110-54-3)	TWA	72 mg/m ³	
		20 ppm	
Nickel (CAS 7440-02-0)	TWA	0,5 mg/m ³	
Titanium dioxide (CAS 13463-67-7)	TWA	5 mg/m ³	
Xylene (CAS 1330-20-7)	STEL	450 mg/m ³	
		100 ppm	
	TWA	200 mg/m ³	
		50 ppm	

Luxembourg. OELs. Binding Occupational Exposure Limit Values (Annex I), G.D.R. of 14 November 2016, OJ Memorial A, n ° 235/2016, as amended

Components	Type	Value
Chromium (CAS 7440-47-3)	TWA	2 mg/m ³
Ethylbenzene (CAS 100-41-4)	STEL	884 mg/m ³
		200 ppm
	TWA	442 mg/m ³
		100 ppm
n-Hexane (CAS 110-54-3)	TWA	72 mg/m ³
		20 ppm
Xylene (CAS 1330-20-7)	STEL	442 mg/m ³
		100 ppm
	TWA	221 mg/m ³
		50 ppm

Malta. OELs. Protection of Health and Safety of Workers from Risks related to Chemical Agents at Work (L.N 227/2003 Schedules I and V), as amended

Components	Type	Value
Chromium (CAS 7440-47-3)	TWA	2 mg/m ³
Ethylbenzene (CAS 100-41-4)	STEL	884 mg/m ³
		200 ppm
	TWA	442 mg/m ³
		100 ppm
n-Hexane (CAS 110-54-3)	TWA	72 mg/m ³
		20 ppm
Xylene (CAS 1330-20-7)	STEL	442 mg/m ³
		100 ppm
	TWA	221 mg/m ³
		50 ppm

Netherlands. OELs per Annex XIII of Working Conditions Regulation (Government Gazette no. 252, 29 December 2006), as amended

Components	Type	Value	Form
Chromium (CAS 7440-47-3)	TWA	0,5 mg/m ³	
Copper (CAS 7440-50-8)	TWA	0,1 mg/m ³	Inhalable fraction.
Ethylbenzene (CAS 100-41-4)	STEL	430 mg/m ³	
		97,3 ppm	
	TWA	215 mg/m ³	
		48,6 ppm	
	STEL	144 mg/m ³	
n-Hexane (CAS 110-54-3)		40 ppm	
	TWA	72 mg/m ³	
		20 ppm	
	STEL	442 mg/m ³	
		100 ppm	
Xylene (CAS 1330-20-7)	TWA	210 mg/m ³	
		47,5 ppm	

Norway. Regulation No. 1358 on Measures and Limit Values for Physical and Chemical Factors in the Work Environment and Infection Groups for Biological Factors, as amended

Components	Type	Value	Form
Copper (CAS 7440-50-8)	TLV	1 mg/m ³	Dust.
		0,1 mg/m ³	Fume.
Distillates (petroleum), hydrotreated light (CAS 64742-47-8)	TLV	275 mg/m ³	
		40 ppm	
Ethylbenzene (CAS 100-41-4)	TLV	20 mg/m ³	
		5 ppm	
n-Hexane (CAS 110-54-3)	TLV	72 mg/m ³	
		20 ppm	
Nickel (CAS 7440-02-0)	TLV	0,05 mg/m ³	
Propane (CAS 74-98-6)	TLV	900 mg/m ³	
		500 ppm	
Titanium dioxide (CAS 13463-67-7)	TLV	5 mg/m ³	
Xylene (CAS 1330-20-7)	TLV	108 mg/m ³	
		25 ppm	

Poland. Maximum permissible concentrations and intensities of harmful factors in the work environment (Dz.U.Poz. 1286/2018, Annex 1)

Components	Type	Value	Form
Aluminium hydroxide (CAS 21645-51-2)	TWA	2,5 mg/m ³	Inhalable fraction.
		1,2 mg/m ³	Respirable fraction.
Chromium (CAS 7440-47-3)	TWA	0,5 mg/m ³	
Copper (CAS 7440-50-8)	TWA	0,2 mg/m ³	
Ethylbenzene (CAS 100-41-4)	STEL	400 mg/m ³	
	TWA	200 mg/m ³	
n-Hexane (CAS 110-54-3)	TWA	72 mg/m ³	
Nickel (CAS 7440-02-0)	TWA	0,25 mg/m ³	
Propane (CAS 74-98-6)	TWA	1800 mg/m ³	
Titanium dioxide (CAS 13463-67-7)	STEL	30 mg/m ³	
	TWA	10 mg/m ³	Inhalable fraction.
Xylene (CAS 1330-20-7)	STEL	200 mg/m ³	
	TWA	100 mg/m ³	

Portugal. Decree-Law No. 24/2012, Occupational Exposure Limit Values, Annex II, as amended

Components	Type	Value
Ethylbenzene (CAS 100-41-4)	STEL	884 mg/m ³
		200 ppm
	TWA	442 mg/m ³
		100 ppm
n-Hexane (CAS 110-54-3)	TWA	72 mg/m ³
		20 ppm
Xylene (CAS 1330-20-7)	STEL	442 mg/m ³
		100 ppm
	TWA	221 mg/m ³
		50 ppm

Portugal. VLEs. Norm on occupational exposure to chemical agents (NP 1796-2014)

Components	Type	Value	Form
Aluminium hydroxide (CAS 21645-51-2)	TWA	1 mg/m ³	Respirable fraction.
Chromium (CAS 7440-47-3)	TWA	0,5 mg/m ³	
Copper (CAS 7440-50-8)	TWA	1 mg/m ³	Dust and mist.
		0,2 mg/m ³	Fume.
Ethylbenzene (CAS 100-41-4)	TWA	20 ppm	
n-Hexane (CAS 110-54-3)	TWA	50 ppm	
Nickel (CAS 7440-02-0)	TWA	1,5 mg/m ³	Inhalable fraction.
Propane (CAS 74-98-6)	TWA	2500 ppm	
Titanium dioxide (CAS 13463-67-7)	TWA	10 mg/m ³	
Xylene (CAS 1330-20-7)	STEL	150 ppm	
	TWA	100 ppm	

Romania. OELs. Limit Values of Chemical Agents at Workplace (Regulation 1.218/2006, M.O 845, Annex 1, 3&4, as amended)

Components	Type	Value	Form
Chromium (CAS 7440-47-3)	TWA	2 mg/m ³	
Copper (CAS 7440-50-8)	STEL	1,5 mg/m ³	Dust.
		0,2 mg/m ³	Fume.

Romania. OELs. Limit Values of Chemical Agents at Workplace (Regulation 1.218/2006, M.O 845, Annex 1, 3&4, as amended)

Components	Type	Value	Form
	TWA	0,5 mg/m ³	Dust.
Ethylbenzene (CAS 100-41-4)	STEL	884 mg/m ³	
		200 ppm	
	TWA	442 mg/m ³	
		100 ppm	
n-Hexane (CAS 110-54-3)	TWA	72 mg/m ³	
		20 ppm	
Nickel (CAS 7440-02-0)	STEL	0,5 mg/m ³	
	TWA	0,1 mg/m ³	
Propane (CAS 74-98-6)	STEL	1800 mg/m ³	
		1000 ppm	
	TWA	1400 mg/m ³	
		778 ppm	
Titanium dioxide (CAS 13463-67-7)	STEL	15 mg/m ³	
	TWA	10 mg/m ³	
Xylene (CAS 1330-20-7)	STEL	442 mg/m ³	
		100 ppm	
	TWA	221 mg/m ³	
		50 ppm	

Slovakia. OELs for carcinogens and mutagens. Regulation No. 356/2006 on carcinogenic and mutagenic substances, as amended

Components	Type	Value	Form
Nickel (CAS 7440-02-0)	TWA	0,05 mg/m ³	Inhalable fraction.

Slovakia. OELs. Decree of the government of the Slovak Republic concerning protection of health in work with chemical agents

Components	Type	Value	Form
Aluminium hydroxide (CAS 21645-51-2)	TWA	4 mg/m ³	Inhalable fraction.
		1,5 mg/m ³	Respirable fraction.
Chromium (CAS 7440-47-3)	TWA	2 mg/m ³	
Copper (CAS 7440-50-8)	TWA	1 mg/m ³	Inhalable fraction.
		0,2 mg/m ³	Respirable fume.
Ethylbenzene (CAS 100-41-4)	TWA	442 mg/m ³	
		100 ppm	
Iron (Massive metal) (CAS 7439-89-6)	TWA	6 mg/m ³	
n-Hexane (CAS 110-54-3)	TWA	72 mg/m ³	
		20 ppm	
Titanium dioxide (CAS 13463-67-7)	TWA	5 mg/m ³	
Xylene (CAS 1330-20-7)	TWA	221 mg/m ³	
		50 ppm	

Slovakia. OELs. Maximum permissible exposure limits for chemical factors in workplace air (Regulation No 355/2006, Annex 1, Table 1, as amended)

Components	Type	Value
Ethylbenzene (CAS 100-41-4)	STEL	884 mg/m ³
		200 ppm
n-Hexane (CAS 110-54-3)	STEL	140 mg/m ³

Slovakia. OELs. Maximum permissible exposure limits for chemical factors in workplace air (Regulation No 355/2006, Annex 1, Table 1, as amended)

Components	Type	Value
Xylene (CAS 1330-20-7)	STEL	40 ppm
		442 mg/m ³
		100 ppm

Slovenia. OELs. Occupational Exposure Limits of Chemicals at Workplace (Reg. on Protection of Workers from Risks due to Exp. to Chemicals at Work, Ann. I 100/2001), as amended

Components	Type	Value	Form
Butanone oxime (CAS 96-29-7)	KTV	8 mg/m ³	
		2,4 ppm	
Chromium (CAS 7440-47-3)	KTV	2 mg/m ³	Inhalable fraction.
Ethylbenzene (CAS 100-41-4)	KTV	884 mg/m ³	
		200 ppm	
n-Hexane (CAS 110-54-3)	KTV	576 mg/m ³	
		160 ppm	
Nickel (CAS 7440-02-0)	KTV	0,048 mg/m ³	Respirable fraction.
Propane (CAS 74-98-6)	KTV	7200 mg/m ³	
		4000 ppm	
Titanium dioxide (CAS 13463-67-7)	KTV	20 mg/m ³	Inhalable fraction.
		2,5 mg/m ³	Respirable fraction.
Xylene (CAS 1330-20-7)	KTV	442 mg/m ³	
		100 ppm	

Slovenia. OELs. Occupational Exposure Limits of Chemicals at Workplace (Reg. on Protection of Workers from Risks due to Exp. to Chemicals at Work, Annex I), as amended

Components	Type	Value	Form
Butanone oxime (CAS 96-29-7)	TWA	1 mg/m ³	
		0,3 ppm	
Chromium (CAS 7440-47-3)	TWA	2 mg/m ³	Inhalable fraction.
Ethylbenzene (CAS 100-41-4)	TWA	442 mg/m ³	
		100 ppm	
n-Hexane (CAS 110-54-3)	TWA	72 mg/m ³	
		20 ppm	
Nickel (CAS 7440-02-0)	TWA	0,006 mg/m ³	Respirable fraction.
Propane (CAS 74-98-6)	TWA	1800 mg/m ³	
		1000 ppm	
Titanium dioxide (CAS 13463-67-7)	TWA	10 mg/m ³	Inhalable fraction.
		1,25 mg/m ³	Respirable fraction.
Xylene (CAS 1330-20-7)	TWA	221 mg/m ³	
		50 ppm	

Spain. OELs. INSST, Límites de Exposición Profesional Para Agentes Químicos, Table 1-Valores Límites Ambientales (VLAs)

Components	Type	Value	Form
Chromium (CAS 7440-47-3)	TWA	2 mg/m ³	
Copper (CAS 7440-50-8)	TWA	0,01 mg/m ³	Respirable fraction.
Ethylbenzene (CAS 100-41-4)	STEL	884 mg/m ³	
		200 ppm	
	TWA	441 mg/m ³	

Spain. OELs. INSST, Límites de Exposición Profesional Para Agentes Químicos, Table 1-Valores Límites Ambientales (VLAs)

Components	Type	Value	Form
n-Hexane (CAS 110-54-3)	TWA	100 ppm	
		72 mg/m3	
		20 ppm	
Nickel (CAS 7440-02-0)	TWA	1 mg/m3	
Propane (CAS 74-98-6)	TWA	1000 ppm	
Titanium dioxide (CAS 13463-67-7)	TWA	10 mg/m3	
Xylene (CAS 1330-20-7)	STEL	442 mg/m3	
		100 ppm	
	TWA	221 mg/m3	
		50 ppm	

Sweden. OELs (Annex 1). Work Environment Authority (AV), Occupational Exposure Limit Values (AFS 2018:1), as amended

Components	Type	Value	Form
Aluminium hydroxide (CAS 21645-51-2)	TWA	5 mg/m3	Inhalable dust.
		2,5 mg/m3	Respirable dust.
Chromium (CAS 7440-47-3)	TWA	0,5 mg/m3	Total dust.
Copper (CAS 7440-50-8)	TWA	0,01 mg/m3	Respirable dust.
Distillates (petroleum), hydrotreated light (CAS 64742-47-8)	STEL	500 mg/m3	
Ethylbenzene (CAS 100-41-4)	TWA	350 mg/m3	
		884 mg/m3	
	Ceiling	200 ppm	
n-Hexane (CAS 110-54-3)	TWA	220 mg/m3	
		50 ppm	
	Ceiling	180 mg/m3	
Nickel (CAS 7440-02-0)	TWA	72 mg/m3	
		25 ppm	
	TWA	0,5 mg/m3	Inhalable fraction.
Titanium dioxide (CAS 13463-67-7)	TWA	5 mg/m3	Total dust.
Xylene (CAS 1330-20-7)	Ceiling	442 mg/m3	
		100 ppm	
	TWA	221 mg/m3	
		50 ppm	

Switzerland. SUVA Grenzwerte am Arbeitsplatz: Aktuelle MAK-Werte

Components	Type	Value	Form
Aluminium hydroxide (CAS 21645-51-2)	TWA	3 mg/m3	Respirable fraction.
Chromium (CAS 7440-47-3)	TWA	0,5 mg/m3	Inhalable fraction.
Copper (CAS 7440-50-8)	STEL	0,2 mg/m3	Inhalable fraction.
	TWA	0,1 mg/m3	Inhalable fraction.
Distillates (petroleum), hydrotreated light (CAS 64742-47-8)	STEL	700 mg/m3	Vapour.
	TWA	100 ppm	Vapour.
		5 mg/m3	Aerosol
		350 mg/m3	Vapour.

Switzerland. SUVA Grenzwerte am Arbeitsplatz: Aktuelle MAK-Werte

Components	Type	Value	Form
Ethylbenzene (CAS 100-41-4)	STEL	50 ppm 220 mg/m ³	Vapour.
	TWA	50 ppm 220 mg/m ³	
n-Hexane (CAS 110-54-3)	STEL	50 ppm 1440 mg/m ³	
	TWA	400 ppm 180 mg/m ³	
Nickel (CAS 7440-02-0)	TWA	50 ppm 0,5 mg/m ³	Inhalable fraction.
Propane (CAS 74-98-6)	STEL	7200 mg/m ³ 4000 ppm	
	TWA	1800 mg/m ³ 1000 ppm	
Titanium dioxide (CAS 13463-67-7)	TWA	3 mg/m ³	Respirable dust.
Xylene (CAS 1330-20-7)	STEL	440 mg/m ³ 100 ppm	
	TWA	220 mg/m ³ 50 ppm	

UK. OELs. Workplace Exposure Limits (WELs) (EH40/2005 (Fourth Edition 2020)), Table 1

Components	Type	Value	Form
Chromium (CAS 7440-47-3)	TWA	0,5 mg/m ³	
Copper (CAS 7440-50-8)	STEL	2 mg/m ³	Inhalable dusts and mists.
	TWA	1 mg/m ³	Inhalable dusts and mists.
Ethylbenzene (CAS 100-41-4)	STEL	0,2 mg/m ³ 552 mg/m ³	Fume.
		125 ppm	
n-Hexane (CAS 110-54-3)	TWA	441 mg/m ³ 100 ppm	
		72 mg/m ³ 20 ppm	
Nickel (CAS 7440-02-0)	TWA	0,5 mg/m ³	
Titanium dioxide (CAS 13463-67-7)	TWA	4 mg/m ³	Respirable.
Xylene (CAS 1330-20-7)	STEL	10 mg/m ³ 441 mg/m ³	Inhalable
		100 ppm	
	TWA	220 mg/m ³ 50 ppm	

EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU, 2017/164/EU

Components	Type	Value
Chromium (CAS 7440-47-3)	TWA	2 mg/m ³
Ethylbenzene (CAS 100-41-4)	STEL	884 mg/m ³
	TWA	200 ppm 442 mg/m ³
n-Hexane (CAS 110-54-3)	TWA	100 ppm 72 mg/m ³

EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU, 2017/164/EU

Components	Type	Value
Xylene (CAS 1330-20-7)	STEL	20 ppm
		442 mg/m ³
	TWA	100 ppm
		221 mg/m ³
		50 ppm

Biological limit values

Croatia. BELs (BGV). Regulation on Protection of Workers against Exposure to Dangerous Chemicals at Work, OELs and BELs, Annex IV (NN 91/2018), as amended

Components	Value	Determinant	Specimen	Sampling Time
Ethylbenzene (CAS 100-41-4)	14,1 µmol/l	ethylbenzene	Blood	*
	1,5 g/g	Mandelic acid	Creatinine in urine	*
	1,5 mg/l	ethylbenzene	Blood	*
	1,12 mol/mol	Mandelic acid	Creatinine in urine	*
n-Hexane (CAS 110-54-3)	150 µg/l	n-hexane	Blood	*
	1,74 µmol/l	n-hexane	Blood	*
	1,66 µmol/l	n-hexane	End-exhaled air	*
	0,2 mg/g	2-Hexanol	Creatinine in urine	*
	0,22 mmol/mol	2-Hexanol	Creatinine in urine	*
	40 ppm	n-hexane	End-exhaled air	*
Xylene (CAS 1330-20-7)	14,13 µmol/l	xylene	Blood	*
	1,5 g/g	Methylhippuric acids	Creatinine in urine	*
	1,5 mg/l	xylene	Blood	*
	0,88 mol/mol	Methylhippuric acids	Creatinine in urine	*

* - For sampling details, please see the source document.

Czech Republic. BELs. Government Decree 432/2003 Sb., as amended

Components	Value	Determinant	Specimen	Sampling Time
Chromium (CAS 7440-47-3)	0,065 µmol/mmol	Total chromium	Creatinine in urine	*
	0,03 mg/g	Total chromium	Creatinine in urine	*
Ethylbenzene (CAS 100-41-4)	1100 µmol/mmol	Mandelic acid	Creatinine in urine	*
	1500 mg/g	Mandelic acid	Creatinine in urine	*
Nickel (CAS 7440-02-0)	0,077 µmol/mmol	Nickel	Creatinine in urine	*
	0,04 mg/g	Nickel	Creatinine in urine	*
Xylene (CAS 1330-20-7)	820 µmol/mmol	Methylhippuric acids	Creatinine in urine	*
	1400 mg/g	Methylhippuric acids	Creatinine in urine	*

* - For sampling details, please see the source document.

Finland. HTP-arvot, App 2., Biological Limit Values, Social Affairs and Ministry of Health

Components	Value	Determinant	Specimen	Sampling Time
Ethylbenzene (CAS 100-41-4)	5,2 mmol/l	Mandelic acid	Urine	*

Finland. HTP-arvot, App 2., Biological Limit Values, Social Affairs and Ministry of Health

Components	Value	Determinant	Specimen	Sampling Time
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Nickel (CAS 7440-02-0)	0,1 µmol/l	Nickel	Urine	*
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Xylene (CAS 1330-20-7)	5 mmol/l	Methylhippuric acids	Urine	*
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* - For sampling details, please see the source document.

France. Biological indicators of exposure (IBE) (National Institute for Research and Security (INRS), ND 2065)

Components	Value	Determinant	Specimen	Sampling Time
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Ethylbenzene (CAS 100-41-4)	1500 mg/g	Acide mandélique	Creatinine in urine	*
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n-Hexane (CAS 110-54-3)	5 mg/g	2,5-Hexanedione	Creatinine in urine	*
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Xylene (CAS 1330-20-7)	1500 mg/g	Acides méthylhippuriques	Creatinine in urine	*
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* - For sampling details, please see the source document.

Germany. TRGS 903, BAT List (Biological Limit Values)

Components	Value	Determinant	Specimen	Sampling Time
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Ethylbenzene (CAS 100-41-4)	250 mg/g	Mandelsäure plus Phenylglyoxyssäure	Creatinine in urine	*
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n-Hexane (CAS 110-54-3)	5 mg/l	2,5-Hexandion plus 4,5-Dihydroxy-2-hexanon (nach Hydrolyse)	Urine	*
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Xylene (CAS 1330-20-7)	2000 mg/l	Methylhippur-(Tolur-)säure (alle Isomere)	Urine	*
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* - For sampling details, please see the source document.

Hungary. BELs. Decree on protection of workers exposed to chemical agents (5/2020. (II.6)), Annex 3&4, as amended

Components	Value	Determinant	Specimen	Sampling Time
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Aluminium hydroxide (CAS 21645-51-2)	0,25 µmol/mmol	Aluminium	Creatinine in urine	*
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	0,06 mg/g	Aluminium	Creatinine in urine	*
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Chromium (CAS 7440-47-3)	0,022 µmol/mmol	chromium	Creatinine in urine	*
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	0,01 mg/g	chromium	Creatinine in urine	*
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Ethylbenzene (CAS 100-41-4)	1110 µmol/mmol	mandelic acid	Creatinine in urine	*
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	1500 mg/g	mandelic acid	Creatinine in urine	*
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n-Hexane (CAS 110-54-3)	18 µmol/l	hexane-2,5-dion	Urine	*
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	2 mg/l	hexane-2,5-dion	Urine	*
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Nickel (CAS 7440-02-0)	0,051 µmol/l	Nickel	Urine	*
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	0,003 mg/l	Nickel	Urine	*
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Xylene (CAS 1330-20-7)	860 µmol/mmol	methyl hippuric acids	Creatinine in urine	*
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	1500 mg/g	methyl hippuric acids	Creatinine in urine	*
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* - For sampling details, please see the source document.

Slovakia. BLVs (Biological Limit Value). Regulation no. 355/2006 concerning protection of workers exposed to chemical agents, Annex 2

Components	Value	Determinant	Specimen	Sampling Time
Ethylbenzene (CAS 100-41-4)	8,03 mg/g	2 and 4-ethylphenol	Creatinine in urine	*
	12 mg/l	2 and 4-ethylphenol	Urine	*
n-Hexane (CAS 110-54-3)	3 mg/g	2,5-hexanedione and 4,5-dihydroxy-2-hexanone	Creatinine in urine	*
	5 mg/l	2,5-hexanedione and 4,5-dihydroxy-2-hexanone	Urine	*
Xylene (CAS 1330-20-7)	1334 mg/g	Methylhippuric acids	Creatinine in urine	*
	2000 mg/l	Methylhippuric acids	Urine	*
	1,5 mg/l	xylene	Blood	*

* - For sampling details, please see the source document.

Spain. BELs. INSST, Límites de Exposición Profesional Para Agentes Químicos, Table 3-Valores Límite Biológicos (VLB)

Components	Value	Determinant	Specimen	Sampling Time
Ethylbenzene (CAS 100-41-4)	700 mg/g	Suma del ácido mandélico y el ácido fenilgloxílico	Creatinine in urine	*
n-Hexane (CAS 110-54-3)	0,2 mg/l	2,5-Hexanodiona, sin hidrólisis	Urine	*
Xylene (CAS 1330-20-7)	1 g/g	Ácidos metilhipúricos	Creatinine in urine	*

* - For sampling details, please see the source document.

Switzerland. SUVA Grenzwerte am Arbeitsplatz: Aktuelle BAT-Werte

Components	Value	Determinant	Specimen	Sampling Time
Aluminium hydroxide (CAS 21645-51-2)	50 µg/g	Aluminium	Creatinine in urine	*
Ethylbenzene (CAS 100-41-4)	600 mg/g	Mandelsäure + Phenylglyoxylsäure	Creatinine in urine	*
n-Hexane (CAS 110-54-3)	5 mg/l	2,5-Hexandion plus 4,5-Dihydroxy-2-hexanon	Urine	*
Nickel (CAS 7440-02-0)	45 µg/l	Nickel	Urine	*
Xylene (CAS 1330-20-7)	2 g/l	Methylhippursäuren	Urine	*

* - For sampling details, please see the source document.

UK. BELs. Biological Monitoring Guidance Values (BMGVs) (EH40/2005 (Fourth Edition 2020)), Table 2

Components	Value	Determinant	Specimen	Sampling Time
Chromium (CAS 7440-47-3)	10 µmol/mol	Chromium	Creatinine in urine	*
Xylene (CAS 1330-20-7)	650 mmol/mol	Methyl hippuric acid	Creatinine in urine	*

* - For sampling details, please see the source document.

Recommended monitoring procedures Follow standard monitoring procedures.

Derived no effect levels (DNELs) Not available.

Predicted no effect concentrations (PNECs) Not available.

Exposure guidelines

Austria. MAK List

Ethylbenzene (CAS 100-41-4) Can be absorbed through the skin.
Xylene (CAS 1330-20-7) Can be absorbed through the skin.

Belgium OELs: Skin designation

Ethylbenzene (CAS 100-41-4) Can be absorbed through the skin.
Xylene (CAS 1330-20-7) Can be absorbed through the skin.

Bulgaria OELs: Skin designation

Ethylbenzene (CAS 100-41-4) Can be absorbed through the skin.
Xylene (CAS 1330-20-7) Can be absorbed through the skin.

Croatia ELVs: Skin designation

Ethylbenzene (CAS 100-41-4) Can be absorbed through the skin.
n-Hexane (CAS 110-54-3) Can be absorbed through the skin.
Xylene (CAS 1330-20-7) Can be absorbed through the skin.

Czech Republic PELs: Skin designation

Ethylbenzene (CAS 100-41-4) Can be absorbed through the skin.
n-Hexane (CAS 110-54-3) Can be absorbed through the skin.
Xylene (CAS 1330-20-7) Can be absorbed through the skin.

Denmark GV: Skin designation

Ethylbenzene (CAS 100-41-4) Can be absorbed through the skin.
Xylene (CAS 1330-20-7) Can be absorbed through the skin.

Estonia OELs: Skin designation

Ethylbenzene (CAS 100-41-4) Can be absorbed through the skin.
Xylene (CAS 1330-20-7) Can be absorbed through the skin.

EU Exposure Limit Values: Skin designation

Ethylbenzene (CAS 100-41-4) Can be absorbed through the skin.
Xylene (CAS 1330-20-7) Can be absorbed through the skin.

Finland Exposure Limit Values: Skin designation

Ethylbenzene (CAS 100-41-4) Can be absorbed through the skin.
n-Hexane (CAS 110-54-3) Can be absorbed through the skin.
Xylene (CAS 1330-20-7) Can be absorbed through the skin.

France Mandatory OELs (VLEP): Skin designation

Ethylbenzene (CAS 100-41-4) Can be absorbed through the skin.
Xylene (CAS 1330-20-7) Can be absorbed through the skin.

Germany DFG MAK (advisory): Skin designation

Butanone oxime (CAS 96-29-7) Can be absorbed through the skin.
Ethylbenzene (CAS 100-41-4) Can be absorbed through the skin.
Xylene (CAS 1330-20-7) Can be absorbed through the skin.

Germany TRGS 900 Limit Values: Skin designation

Butanone oxime (CAS 96-29-7) Can be absorbed through the skin.
Ethylbenzene (CAS 100-41-4) Can be absorbed through the skin.
Xylene (CAS 1330-20-7) Can be absorbed through the skin.

Greece OEL: Skin designation

Xylene (CAS 1330-20-7) Can be absorbed through the skin.

Hungary OELs: Skin designation

Ethylbenzene (CAS 100-41-4) Can be absorbed through the skin.
n-Hexane (CAS 110-54-3) Can be absorbed through the skin.
Xylene (CAS 1330-20-7) Can be absorbed through the skin.

Iceland OELs: Skin designation

Ethylbenzene (CAS 100-41-4) Can be absorbed through the skin.
Xylene (CAS 1330-20-7) Can be absorbed through the skin.

Ireland Exposure Limit Values: Skin designation

Ethylbenzene (CAS 100-41-4) Can be absorbed through the skin.
n-Hexane (CAS 110-54-3) Can be absorbed through the skin.
Xylene (CAS 1330-20-7) Can be absorbed through the skin.

Italy OELs: Skin designation

Ethylbenzene (CAS 100-41-4) Danger of cutaneous absorption
Xylene (CAS 1330-20-7) Danger of cutaneous absorption

Latvia OELs: Skin designation

Ethylbenzene (CAS 100-41-4) Can be absorbed through the skin.
Xylene (CAS 1330-20-7) Can be absorbed through the skin.

Lithuania OELs: Skin designation

Benzene, 1-chloro-4-(trifluoromethyl)- (CAS 98-56-6) Can be absorbed through the skin.
Ethylbenzene (CAS 100-41-4) Can be absorbed through the skin.
Xylene (CAS 1330-20-7) Can be absorbed through the skin.

Luxembourg OELs: Skin designation

Ethylbenzene (CAS 100-41-4)	Can be absorbed through the skin.
Xylene (CAS 1330-20-7)	Can be absorbed through the skin.

Malta OELs: Skin designation

Ethylbenzene (CAS 100-41-4)	Can be absorbed through the skin.
Xylene (CAS 1330-20-7)	Can be absorbed through the skin.

Netherlands OELs (binding): Skin designation

Ethylbenzene (CAS 100-41-4)	Can be absorbed through the skin.
Xylene (CAS 1330-20-7)	Can be absorbed through the skin.

Norway Exposure Limit Values: Skin designation

Ethylbenzene (CAS 100-41-4)	Can be absorbed through the skin.
Xylene (CAS 1330-20-7)	Can be absorbed through the skin.

Portugal OELs: Skin designation

Ethylbenzene (CAS 100-41-4)	Can be absorbed through the skin.
Xylene (CAS 1330-20-7)	Can be absorbed through the skin.

Portugal VLEs Norm on Occupational Exposure: Skin designation

n-Hexane (CAS 110-54-3)	Can be absorbed through the skin.
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Romania OELs: Skin designation

Ethylbenzene (CAS 100-41-4)	Can be absorbed through the skin.
Xylene (CAS 1330-20-7)	Can be absorbed through the skin.

Slovakia OELs for Carcinogens and Mutagens: Skin designation

Nickel (CAS 7440-02-0)	Can be absorbed through the skin.
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Slovakia OELs: Skin designation

Ethylbenzene (CAS 100-41-4)	Can be absorbed through the skin.
Xylene (CAS 1330-20-7)	Can be absorbed through the skin.

Slovenia. OELs. Regulations concerning protection of workers against risks due to exposure to chemicals while working (Official Gazette of the Republic of Slovenia)

Butanone oxime (CAS 96-29-7)	Can be absorbed through the skin.
Ethylbenzene (CAS 100-41-4)	Can be absorbed through the skin.
Xylene (CAS 1330-20-7)	Can be absorbed through the skin.

Spain OELs: Skin designation

Ethylbenzene (CAS 100-41-4)	Can be absorbed through the skin.
Xylene (CAS 1330-20-7)	Can be absorbed through the skin.

Sweden Threshold Limit Values: Skin designation

Ethylbenzene (CAS 100-41-4)	Can be absorbed through the skin.
Xylene (CAS 1330-20-7)	Can be absorbed through the skin.

Switzerland SUVA Limit Values at the Workplace: Skin designation

Ethylbenzene (CAS 100-41-4)	Can be absorbed through the skin.
n-Hexane (CAS 110-54-3)	Can be absorbed through the skin.
Xylene (CAS 1330-20-7)	Can be absorbed through the skin.

UK EH40 WEL: Skin designation

Ethylbenzene (CAS 100-41-4)	Can be absorbed through the skin.
Nickel (CAS 7440-02-0)	Can be absorbed through the skin.
Xylene (CAS 1330-20-7)	Can be absorbed through the skin.

8.2. Exposure controls**Appropriate engineering controls**

Explosion-proof general and local exhaust ventilation. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. Provide easy access to water supply and eye wash facilities.

Individual protection measures, such as personal protective equipment**General information**

Use personal protective equipment as required. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

Eye/face protection

Wear safety glasses with side shields (or goggles) and a face shield. Wear a full-face respirator, if needed. Eye protection should meet standard EN 166.

Skin protection**- Hand protection**

Wear suitable gloves tested to EN374. Glove material: Nitrile. Use gloves with breakthrough time of 15 +/- 15 minutes. Minimum glove thickness 0.381 (15 mil) mm. Be aware that the liquid may penetrate the gloves. Frequent change is advisable. The most suitable glove must be chosen in consultation with the gloves supplier, who can inform about the breakthrough time of the glove material.

- Other

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Wear respiratory protection with combination filter (dust and gas filter) during spraying operations. Use filter type (ABEK2/P3) according to EN 143. Check with respiratory protective equipment suppliers.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
Hygiene measures	Observe any medical surveillance requirements. When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.
Environmental exposure controls	Inform appropriate managerial or supervisory personnel of all environmental releases. Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. Fume scrubbers, filters or engineering modifications to the process equipment may be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid.
Form	Aerosol - Pressurized liquid (spray).
Colour	White.
Odour	Characteristic of solvents.
Odour threshold	Property has not been measured.
Melting point/freezing point	> -95 °C (> -139 °F)
Boiling point or initial boiling point and boiling range	> 56 °C (> 132,8 °F)
Flammability	Extremely flammable aerosol.
Upper/lower flammability or explosive limits	
Explosive limit - lower (%)	0,6 %
Explosive limit – upper (%)	12,8 %
Flash point	Not applicable, product is an aerosol dispenser.
Auto-ignition temperature	> 236 °C (> 456,8 °F) (liquid)
Decomposition temperature	229,7 °C (445,5 °F) (liquid)
pH	Not applicable (material is insoluble in water).
Kinematic viscosity	2700 mm ² /s (25 °C (77 °F))
Solubility	
Solubility (water)	(< 0,1%) Insoluble in water.
Partition coefficient (n-octanol/water) (log value)	Not applicable, product is a mixture.
Vapour pressure	< 140 psi (20 °C (68 °F))
Density and/or relative density	
Density	0,951 g/cm ³ (25 °C (77 °F))
Relative density	0,951 (Water=1) (25 °C (77 °F))
Vapour density	< 6,24 (Air=1) (25 °C (77 °F))
Particle characteristics	
Particle size	Does not contain nanomaterials.
9.2. Other information	
9.2.1. Information with regard to physical hazard classes	No relevant additional information available.
9.2.2. Other safety characteristics	
Evaporation rate	Property has not been measured.
Viscosity	Property has not been measured.
VOC	MIR CA < 1,25

SECTION 10: Stability and reactivity

10.1. Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
10.2. Chemical stability	Material is stable under normal conditions.

10.3. Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
10.4. Conditions to avoid	Contents under pressure. Do not puncture. Protect against direct sunlight. Avoid heat, sparks, open flames and other ignition sources. In a fire or if heated, a pressure increase will occur and the container may burst or explode. Contact with incompatible materials.
10.5. Incompatible materials	Strong oxidising agents. Strong acids. Halogens. Chlorine.
10.6. Hazardous decomposition products	Thermal decomposition of this product can generate carbon monoxide and carbon dioxide. Fumes of metal oxides. Chlorine compounds. Fluorine compounds.

SECTION 11: Toxicological information

General information Occupational exposure to the substance or mixture may cause adverse effects.

Information on likely routes of exposure

Inhalation	Suffocation (asphyxiant) hazard - if allowed to accumulate to concentrations that reduce oxygen below safe breathing levels. May cause drowsiness and dizziness. May cause damage to organs through prolonged or repeated exposure by inhalation.
Skin contact	Causes skin irritation. May cause an allergic skin reaction. May be absorbed through the skin.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	May cause discomfort if swallowed.

Symptoms May cause drowsiness and dizziness. Narcosis. Headache. Fatigue. Nausea, vomiting. Behavioural changes. Decrease in motor functions. Very high exposure can cause suffocation from lack of oxygen. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. Asphyxiation may bring about unconsciousness without warning and so rapidly that victim may be unable to protect themselves. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash. Prolonged exposure may cause chronic effects.

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

Acute toxicity Not expected to be acutely toxic.

Components	Species	Test Results
Butanone oxime (CAS 96-29-7)		
Acute		
Dermal		
LD50	Rabbit	> 1000 mg/kg, 24 Hours
Oral		
LD50	Rat	> 900 mg/kg
Ethylbenzene (CAS 100-41-4)		
Acute		
Dermal		
LD50	Rabbit	15400 mg/kg
Inhalation		
LC50	Rat	17,4 mg/l, 4 hours
Oral		
LD50	Rat	3500 - 4700 mg/kg
n-Hexane (CAS 110-54-3)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg
Inhalation		
<i>Vapour</i>		
LC50	Mouse, Rat	169,2 mg/l, 4 Hours
Oral		
LD50	Rat	28710 mg/kg
Nickel (CAS 7440-02-0)		
Acute		
Inhalation		
NOAEC	Rat	10200 mg/l, 1 hours
Oral		
LD50	Rat	> 9000 mg/kg

Components	Species	Test Results
Propane (CAS 74-98-6)		
Acute		
Inhalation		
Gas		
LC50	Rat	> 80000 ppm, 15 Minutes
Titanium dioxide (CAS 13463-67-7)		
Acute		
Inhalation		
LC50	Rat	> 6,82 mg/l, 4 Hours
Oral		
LD50	Rat	> 5000 mg/kg
Xylene (CAS 1330-20-7)		
Acute		
Oral		
LD50	Rat	3523 mg/kg
Skin corrosion/irritation	Causes skin irritation.	
Serious eye damage/eye irritation	Based on available data, the classification criteria are not met.	
Respiratory sensitisation	Based on available data, the classification criteria are not met.	
Skin sensitisation	May cause an allergic skin reaction.	
Germ cell mutagenicity	Based on available data, the classification criteria are not met.	
Carcinogenicity	May cause cancer.	
Hungary. 26/2000 EüM Ordinance on protection against and preventing risk relating to exposure to carcinogens at work (as amended)		
Butanone oxime (CAS 96-29-7)		
IARC Monographs. Overall Evaluation of Carcinogenicity		
Benzene, 1-chloro-4-(trifluoromethyl)- (CAS 98-56-6)	2B Possibly carcinogenic to humans.	
Chromium (CAS 7440-47-3)	3 Not classifiable as to carcinogenicity to humans.	
Ethylbenzene (CAS 100-41-4)	2B Possibly carcinogenic to humans.	
Nickel (CAS 7440-02-0)	2B Possibly carcinogenic to humans.	
Xylene (CAS 1330-20-7)	3 Not classifiable as to carcinogenicity to humans.	
Slovenia. OELs. Regulations concerning protection of workers against risks due to exposure to chemicals while working (Official Gazette of the Republic of Slovenia)		
Butanone oxime (CAS 96-29-7)	Carcinogenic, Category 2.	
Nickel (CAS 7440-02-0)	Carcinogenic, Category 2.	
Reproductive toxicity	Suspected of damaging fertility or the unborn child by inhalation.	
Specific target organ toxicity - single exposure	May cause drowsiness and dizziness.	
Specific target organ toxicity - repeated exposure	May cause damage to organs (nervous system) through prolonged or repeated exposure by inhalation.	
Aspiration hazard	Based on available data, the classification criteria are not met.	
Mixture versus substance information	No information available.	
11.2. Information on other hazards		
Endocrine disrupting properties	The mixture contains substance(s) considered to have endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.	
Other information	Symptoms may be delayed.	
SECTION 12: Ecological information		
12.1. Toxicity	Toxic to aquatic life with long lasting effects.	
Components	Species	Test Results
Copper (CAS 7440-50-8)		
Aquatic		
<i>Chronic</i>		
Other	NOEC	Juga plicifera 6 µg/l

Components	Species		Test Results
Distillates (petroleum), hydrotreated light (CAS 64742-47-8)			
Aquatic			
<i>Acute</i>			
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	2,9 mg/l, 96 hours
Ethylbenzene (CAS 100-41-4)			
Aquatic			
<i>Acute</i>			
Crustacea	EC50	Water flea (Daphnia magna)	1,81 - 2,38 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	4,2 mg/l, 96 hours
<i>Chronic</i>			
Crustacea	EC50	Ceriodaphnia dubia	3,6 mg/l, 7 days
n-Hexane (CAS 110-54-3)			
Aquatic			
<i>Acute</i>			
Crustacea	LC50	Daphnia magna	2,1 mg/l, 48 hours
Fish	LC50	Pimephales promelas	2,5 mg/l, 96 hours
Nickel (CAS 7440-02-0)			
Aquatic			
<i>Chronic</i>			
Crustacea	NOEC	Ceriodaphnia dubia	2,8 µg/l
Fish	NOEC	Zebra danio (Danio rerio)	40 µg/l
Titanium dioxide (CAS 13463-67-7)			
Aquatic			
<i>Acute</i>			
Algae	EC50	Pseudokirchneriella subcapitata	> 100 mg/l, 72 Hours
Crustacea	EC50	Daphnia magna	> 100 mg/l, 48 hours
Fish	LC50	Oncorhynchus mykiss	> 100 mg/l, 96 hours
Xylene (CAS 1330-20-7)			
Aquatic			
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	2,6 mg/l, 96 hours
12.2. Persistence and degradability	No data is available on the degradability of this product.		
12.3. Bioaccumulative potential			
Partition coefficient n-octanol/water (log Kow)	Not applicable, product is a mixture.		
Benzene, 1-chloro-4-(trifluoromethyl)- (CAS 98-56-6)	3,6		
Butanone oxime (CAS 96-29-7)	0,63		
Ethylbenzene (CAS 100-41-4)	3,15		
n-Hexane (CAS 110-54-3)	3,9		
Bioconcentration factor (BCF)	Not available.		
12.4. Mobility in soil	The product is insoluble in water. Not expected to be mobile in soil.		
12.5. Results of PBT and vPvB assessment	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.		
12.6. Endocrine disrupting properties	The mixture contains substance(s) considered to have endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.		
12.7. Other adverse effects	The product contains volatile organic compounds which have a photochemical ozone creation potential.		
12.8. Additional information			
Estonia Dangerous substances in soil Data			
Chromium (CAS 7440-47-3)	Chromium (Cr) 100 mg/kg		
	Chromium (Cr) 300 mg/kg		
	Chromium (Cr) 800 mg/kg		

Copper (CAS 7440-50-8)

Copper (Cu) 100 mg/kg

Copper (Cu) 150 mg/kg

Copper (Cu) 500 mg/kg

Ethylbenzene (CAS 100-41-4)

ETHYLBENZENE 0,1 mg/kg

ETHYLBENZENE 5 mg/kg

ETHYLBENZENE 50 mg/kg

Nickel (CAS 7440-02-0)

Nickel (Ni) 150 mg/kg

Nickel (Ni) 50 mg/kg

Nickel (Ni) 500 mg/kg

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Residual waste

Dispose in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.

Contaminated packaging

Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

EU waste code

The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.
08 01 11*

Disposal methods/information

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Special precautions

Dispose in accordance with all applicable regulations.

SECTION 14: Transport information

ADR

14.1. UN number

UN1950

14.2. UN proper shipping name

AEROSOLS, flammable

14.3. Transport hazard class(es)

Class

2

Subsidiary hazard

-

Label(s)

2.1

Hazard No. (ADR)

-

Tunnel restriction code

D

14.4. Packing group

-

14.5. Environmental hazards

Yes

14.6. Special precautions for user

Read safety instructions, SDS and emergency procedures before handling.

RID

14.1. UN number

UN1950

14.2. UN proper shipping name

AEROSOLS, flammable

14.3. Transport hazard class(es)

Class

2

Subsidiary hazard

-

Label(s)

2.1

14.4. Packing group

-

14.5. Environmental hazards

Yes

14.6. Special precautions for user

Read safety instructions, SDS and emergency procedures before handling.

ADN

14.1. UN number

UN1950

14.2. UN proper shipping name

AEROSOLS, flammable

14.3. Transport hazard class(es)

Class

2.1

Subsidiary hazard

-

Label(s)

2.1

14.4. Packing group

-

14.5. Environmental hazards

Yes

14.6. Special precautions for user

Read safety instructions, SDS and emergency procedures before handling.

IATA

14.1. UN number	UN1950
14.2. UN proper shipping name	Aerosols, flammable
14.3. Transport hazard class(es)	
Class	2.1
Subsidiary hazard	-
Label(s)	2.1
14.4. Packing group	-
14.5. Environmental hazards	Yes
ERG Code	10L
14.6. Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

14.1. UN number	UN1950
14.2. UN proper shipping name	AEROSOLS, flammable
14.3. Transport hazard class(es)	
Class	2
Subsidiary hazard	-
14.4. Packing group	-
14.5. Environmental hazards	
Marine pollutant	Yes
EmS	F-D, S-U
14.6. Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

14.7. Maritime transport in bulk according to IMO instruments Not established.

SECTION 15: Regulatory information

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

EU regulations

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended

Not listed.

Regulation (EU) 2019/1021 On persistent organic pollutants (recast), as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended

Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended

Chromium (CAS 7440-47-3)

Copper (CAS 7440-50-8)

Nickel (CAS 7440-02-0)

Ethylbenzene (CAS 100-41-4)

Xylene (CAS 1330-20-7)

Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA

Not listed.

Authorisations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorisation, as amended

Not listed.

Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use, as amended
- Conditions of restriction given for the associated entry number should be considered

Butanone oxime (CAS 96-29-7) 28

Distillates (petroleum), hydrotreated light (CAS 64742-47-8) 3

n-Hexane (CAS 110-54-3) 40

Xylene (CAS 1330-20-7) 75

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.

Butanone oxime (CAS 96-29-7)

Regulation 2019/1148 on Marketing and Use of Explosive Precursors, Annex I, as amended

Not listed.

Regulation 2019/1148 on Marketing and Use of Explosive Precursors, Annex II, as amended

Not listed.

Other EU regulations Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended

ANNEX 1, PART 1 Categories of dangerous substances
Hazard categories in accordance with Regulation (EC) No 1272/2008
- P3a FLAMMABLE AEROSOLS
- E2 Hazardous to the Aquatic Environment Chronic

Other regulations The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006, as amended.

National regulations According to Directive 92/85/EEC as amended, pregnant women should not work with the product, if there is the least risk of exposure.

Young people under 18 years old are not allowed to work with this product according to EU Directive 94/33/EC on the protection of young people at work, as amended. Follow national regulation on the protection of workers from the risks of exposure to carcinogens and mutagens at work, in accordance with Directive 2004/37/EC, as amended.

France regulations

France INRS Table of Occupational Diseases

Distillates (petroleum), hydrotreated light
(CAS 64742-47-8)

Affections engendrées par les solvants organiques liquides à usage professionnel : hydrocarbures liquides aliphatiques ou cycliques saturés ou insaturés et leurs mélanges; hydrocarbures halogénés liquides; dérivés nitrés des hydrocarbures aliphatiques; al 84

15.2. Chemical safety assessment No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

List of abbreviations

ADN: European Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterways.
ADR: European Agreement Concerning the International Carriage of Dangerous Goods by Road.
AGW: Occupational threshold limit value (Arbeitsplatzgrenzwert – Germany).
EC50: Effective Concentration 50%.
IATA: International Air Transport Association.
IMDG: International Maritime Dangerous Goods.
IMO: International Maritime Organization.
KTV: Short term exposure limit.
LC50: Lethal Concentration 50%.
LD50: Lethal Dose 50%.
MAC: Maximum Allowed Concentration.
MAK: Maximum Workplace Concentrations (“Maximale Arbeitsplatzkonzentrationen”).
NOEC: No observed effect concentration.
PBT: Persistent, bioaccumulative, toxic.
RID: Regulations concerning the International Carriage of Dangerous Goods by Rail.
STEL: Short-Term Exposure Limit.
TLV: Threshold Limit Value.
TWA : Time Weighted Average Value.
VLE: Exposure Limit Value.
VME: Exposure Average Value.
vPvB: very Persistent, very Bioaccumulative.

References

ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices
ECHA: European Chemical Agency.
EPA: AQUIRE database
HSDB® - Hazardous Substances Data Bank
IARC Monographs. Overall Evaluation of Carcinogenicity
National Toxicology Program (NTP) Report on Carcinogens
NLM: Hazardous Substances Data Base

Information on evaluation method leading to the classification of mixture

The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

Full text of any statements, which are not written out in full under sections 2 to 15

- H220 Extremely flammable gas.
- H225 Highly flammable liquid and vapour.
- H226 Flammable liquid and vapour.
- H280 Contains gas under pressure; may explode if heated.
- H301 Toxic if swallowed.
- H304 May be fatal if swallowed and enters airways.
- H312 Harmful in contact with skin.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H318 Causes serious eye damage.
- H319 Causes serious eye irritation.
- H332 Harmful if inhaled.
- H335 May cause respiratory irritation.
- H336 May cause drowsiness or dizziness.
- H350 May cause cancer.
- H351 Suspected of causing cancer.
- H361 Suspected of damaging fertility or the unborn child.
- H361f Suspected of damaging fertility.
- H370 Causes damage to organs.
- H372 Causes damage to organs through prolonged or repeated exposure by inhalation.
- H373 May cause damage to organs through prolonged or repeated exposure.
- H400 Very toxic to aquatic life.
- H411 Toxic to aquatic life with long lasting effects.
- H412 Harmful to aquatic life with long lasting effects.

Training information

Follow training instructions when handling this material.

Disclaimer

Stainless Steel Coatings, Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use.