



# SAFETY DATA SHEET

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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 2213 Epoxy Ester Precoat

**Registration number** -

**Synonyms** None.

**Product code** FGPR2213P (pint), FGPR2213Q (quart), FGPR2213G (gallon), FGPR2213-5G (5-gallon pail)

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

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

**Uses advised against** Uses other than the recommended use.

### 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.)

<b>Estonia National Poisons Information Centre</b>	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.)
<b>Finland National Poison Information Centre</b>	(09) 471 977 (direct) or (09) 4711 (exchange) (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)
<b>France National Poisons Control Centre</b>	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.)
<b>Greece Poison Information Centre telephone number</b>	(0030) 2107793777 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)
<b>Hungary National Emergency Phone Number</b>	+36-80-201-199 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)
<b>Iceland Poison Centre</b>	(+354) 543 2222 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)
<b>Latvia Emergency medical aid</b>	113
<b>Latvia Poison and Drug Information Centre</b>	+371 67042473 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)
<b>Lithuania Neatidēliotina informācija apsinuodijus</b>	+370 5 236 20 52 or +37068753378 (Hours of operation not provided. SDS/Product information may not be available for the Emergency Service.)
<b>Malta Accident and Emergency Department</b>	2545 4030 (Hours of operation not provided. SDS/Product information may not be available for the Emergency Service.)
<b>Netherlands National Poisons Information Centre (NVIC)</b>	NVIC: +31 (0)88 755 8000 (Only for the purpose of informing medical personnel in cases of acute intoxications)
<b>Norway Norwegian Poison Information Centre</b>	22 59 13 00 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)
<b>Portugal Poison Centre</b>	800 250 250
<b>Romania Biroul RSI si Informare Toxicologica</b>	021.318.36.06 (Available 8:00AM-3:00PM. SDS/Product information may not be available for the Emergency Service.)
<b>Slovakia National Toxicological Information Centre</b>	+421 2 5477 4166 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)
<b>Spain Toxicology Information Service</b>	+ 34 91 562 04 20 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)
<b>Sweden National Poison Information Centre</b>	112 - and ask for Poison Information (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)
<b>Switzerland Tox Info Suisse</b>	145 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)
<b>Ireland National Poisons Information Centre</b>	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

Flammable liquids	Category 3	H226 - Flammable liquid and vapour.
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##### Health hazards

Skin sensitisation	Category 1	H317 - May cause an allergic skin reaction.
Carcinogenicity	Category 2	H351 - Suspected of causing cancer.
Reproductive toxicity (inhalation)	Category 2	H361 - Suspected of damaging fertility or the unborn child by inhalation.

Specific target organ toxicity - repeated exposure (inhalation)

Category 2 (respiratory tract)

H373 - May cause damage to organs (respiratory tract) 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)-, Nickel, Talc

#### Hazard pictograms



#### Signal word

Danger

#### Hazard statements

H226 Flammable liquid and vapour.  
H317 May cause an allergic skin reaction.  
H351 Suspected of causing cancer.  
H361 Suspected of damaging fertility or the unborn child by inhalation.  
H373 May cause damage to organs (respiratory tract) through prolonged or repeated exposure by inhalation.  
H411 Toxic to aquatic life with long lasting effects.

#### Precautionary statements

##### Prevention

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 + P313 IF exposed or concerned: Get medical advice/attention.

##### Storage

P403 + P235 Store in a well-ventilated place. Keep cool.

##### Disposal

Not assigned.

#### Supplemental information on the label

None.

## 2.3. Other hazards

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)-	30 - 40	98-56-6 202-681-1	-	-	<b>Classification:</b> Flam. Liq. 3;H226, Skin Sens. 1B;H317, Carc. 2;H351, Repr. 2;H361, Aquatic Chronic 2;H411
Iron oxide	5 - 10	1309-37-1 215-168-2	-	-	<b>Classification:</b> -
Talc	5 - 10	14807-96-6 238-877-9	-	-	<b>Classification:</b> STOT RE 1;H372

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
tert-Butyl acetate	5 - 10	540-88-5 208-760-7	-	607-026-00-7	
<b>Classification:</b> Flam. Liq. 2;H225, Acute Tox. 4;H332;(ATE: 11 mg/l), STOT SE 3;H335;H336					
<b>Supplemental Hazard Statement(s):</b> EUH066					
trizinc bis(orthophosphate)	1 - 5	7779-90-0 231-944-3	-	030-011-00-6	
<b>Classification:</b> Aquatic Acute 1;H400, Aquatic Chronic 1;H410					
Chromium	< 2	7440-47-3 231-157-5	-	-	#
<b>Classification:</b> -					
Zinc oxide	< 2	1314-13-2 215-222-5	-	030-013-00-7	
<b>Classification:</b> Aquatic Acute 1;H400, Aquatic Chronic 1;H410					
Nickel	< 2	7440-02-0 231-111-4	-	028-002-01-4	
<b>Classification:</b> Skin Sens. 1;H317, Carc. 2;H351, STOT RE 1;H372					
Xylene	< 2	1330-20-7 215-535-7	-	601-022-00-9	#
<b>Classification:</b> 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					
Ethylbenzene	< 1	100-41-4 202-849-4	-	601-023-00-4	#
<b>Classification:</b> Flam. Liq. 2;H225, Acute Tox. 4;H332;(ATE: 17,4 mg/l), STOT RE 2;H373, Asp. Tox. 1;H304, Aquatic Chronic 3;H412					
Copper	< 0,1	7440-50-8 231-159-6	-	029-024-00-X	ED
<b>Classification:</b> Aquatic Acute 1;H400(M=10), Aquatic Chronic 1;H410(M=10)					

#### 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

#### 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

Take off all contaminated clothing immediately. 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

Move to fresh air. Oxygen or artificial respiration if needed. Call a physician if symptoms develop or persist.

#### 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

Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical attention if irritation develops and persists.

#### Ingestion

Rinse mouth. Get medical attention if symptoms occur.

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

Direct contact with eyes may cause temporary irritation. Mild skin irritation. 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. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.

## SECTION 5: Firefighting measures

**General fire hazards** Flammable liquid and vapour.

### 5.1. Extinguishing media

**Suitable extinguishing media** Water fog. Foam. Dry chemical powder. Carbon dioxide (CO<sub>2</sub>).

**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

Vapours may form explosive mixtures with air. Vapours may travel considerable distance to a source of ignition and flash back. During fire, gases hazardous to health may be formed such as: Carbon oxides. Aldehydes. Chlorine compounds. Fluorine compounds. Fumes of metal oxides.

### 5.3. Advice for firefighters

**Special protective equipment for firefighters** Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

**Special fire fighting procedures** In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk. Cool containers exposed to flames with water until well after the fire is out. Prevent runoff from fire control or dilution from entering streams, sewers or drinking water supply.

**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** Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist/vapours/spray. 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

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil etc) away from spilled material. Take precautionary measures against static discharge. Use only non-sparking tools.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water. Retain and dispose of contaminated wash water.

Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Wipe up with absorbent material. Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use.

### 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. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Explosion-proof general and local exhaust ventilation. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment.

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 to allergic reactions should not handle this product. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Use only in well-ventilated areas. 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. Keep away from heat and sources of ignition. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in a cool, dry place out of direct sunlight. Store in tightly closed container. Store in a well-ventilated place. Keep in an area equipped with sprinklers. Store away from incompatible materials (see section 10 of the SDS).

TRGS 510 storage class: 3.

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

- P5a, b or c FLAMMABLE LIQUIDS (Lower-tier requirements = 50 tonnes; Upper-tier requirements = 200 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
Chromium (CAS 7440-47-3)	MAK	2 mg/m3	
Copper (CAS 7440-50-8)	MAK	1 mg/m3	Inhalable fraction.
		0,1 mg/m3	Fume and respirable dust.
	STEL	4 mg/m3	Inhalable fraction.
Ethylbenzene (CAS 100-41-4)		0,4 mg/m3	Fume and respirable dust.
	Ceiling	880 mg/m3	
	MAK	200 ppm	
Iron oxide (CAS 1309-37-1)	MAK	440 mg/m3	
		100 ppm	
	MAK	5 mg/m3	Respirable fraction.
Talc (CAS 14807-96-6)		10 mg/m3	Inhalable fraction.
	STEL	20 mg/m3	Inhalable fraction.
		10 mg/m3	Respirable fraction.
tert-Butyl acetate (CAS 540-88-5)	MAK	2 mg/m3	Respirable fraction.
	Ceiling	480 mg/m3	
		100 ppm	
Xylene (CAS 1330-20-7)	MAK	96 mg/m3	
		20 ppm	
	STEL	96 mg/m3	
Zinc oxide (CAS 1314-13-2)		20 ppm	
	MAK	221 mg/m3	
	STEL	50 ppm	
	442 mg/m3		
	100 ppm		
Zinc oxide (CAS 1314-13-2)	MAK	5 mg/m3	Fume and respirable dust.
	STEL	20 mg/m3	Inhalable fraction.
		10 mg/m3	Respirable fraction.

**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/m3	
Copper (CAS 7440-50-8)	TWA	1 mg/m3	Dust and mist.
		0,2 mg/m3	Fume.
Ethylbenzene (CAS 100-41-4)	STEL	551 mg/m3	
		125 ppm	
	TWA	87 mg/m3	
		20 ppm	
Iron oxide (CAS 1309-37-1)	TWA	5 mg/m3	Respirable fraction.
Nickel (CAS 7440-02-0)	TWA	1 mg/m3	
Talc (CAS 14807-96-6)	TWA	2 mg/m3	
tert-Butyl acetate (CAS 540-88-5)	STEL	712 mg/m3	
		150 ppm	
	TWA	238 mg/m3	
		50 ppm	
Xylene (CAS 1330-20-7)	STEL	442 mg/m3	
		100 ppm	
	TWA	221 mg/m3	
		50 ppm	
Zinc oxide (CAS 1314-13-2)	STEL	10 mg/m3	Respirable fraction.
	TWA	2 mg/m3	Respirable fraction.

**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	
Iron oxide (CAS 1309-37-1)	TWA	5 mg/m3	
Nickel (CAS 7440-02-0)	TWA	0,05 mg/m3	
Talc (CAS 14807-96-6)	TWA	1 fibers/cm3	Respirable fraction.
		6 mg/m3	Inhalable fraction.
		3 mg/m3	Respirable fraction.
Xylene (CAS 1330-20-7)	STEL	442 mg/m3	
		100 ppm	
	TWA	221 mg/m3	
		50 ppm	
Zinc oxide (CAS 1314-13-2)	STEL	10 mg/m3	
	TWA	5 mg/m3	

**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	

**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
		100 ppm	
	STEL	884 mg/m3	
		200 ppm	
Iron oxide (CAS 1309-37-1)	MAC	5 mg/m3	Fume.
		4 mg/m3	Respirable dust.
		10 mg/m3	Total dust.
	STEL	10 mg/m3	Fume.
Nickel (CAS 7440-02-0)	MAC	0,5 mg/m3	
Talc (CAS 14807-96-6)	MAC	1 mg/m3	Respirable dust.
tert-Butyl acetate (CAS 540-88-5)	MAC	966 mg/m3	
		200 ppm	
	STEL	1210 mg/m3	
		250 ppm	
Xylene (CAS 1330-20-7)	MAC	221 mg/m3	
		50 ppm	
	STEL	442 mg/m3	
		100 ppm	
Zinc oxide (CAS 1314-13-2)	MAC	2 mg/m3	Respirable dust.
	STEL	10 mg/m3	Respirable dust.

**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.
Nickel (CAS 7440-02-0)	TWA	1 mg/m3	
Talc (CAS 14807-96-6)	TWA	706 part/cm3	
Zinc oxide (CAS 1314-13-2)	TWA	5 mg/m3	Fume.

**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	Form
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	
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	Aerosol, inhalable.
	TWA	0,5 mg/m3	Aerosol, inhalable.
		0,5 mg/m3	Dust.
Copper (CAS 7440-50-8)	Ceiling	2 mg/m3	Aerosol, inhalable.
		0,2 mg/m3	Respirable aerosol fraction
	TWA	1 mg/m3	Aerosol, inhalable.



**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
		0,1 mg/m <sup>3</sup>	Respirable aerosol fraction
Ethylbenzene (CAS 100-41-4)	Ceiling	500 mg/m <sup>3</sup>	
	TWA	200 mg/m <sup>3</sup>	
Iron (Massive metal) (CAS 7439-89-6)	TWA	10 mg/m <sup>3</sup>	
Nickel (CAS 7440-02-0)	Ceiling	1 mg/m <sup>3</sup>	Aerosol, inhalable.
	TWA	0,5 mg/m <sup>3</sup>	Aerosol, inhalable.
Talc (CAS 14807-96-6)	TWA	2 mg/m <sup>3</sup>	Respirable dust.
		10 mg/m <sup>3</sup>	Total dust.
tert-Butyl acetate (CAS 540-88-5)	Ceiling	1200 mg/m <sup>3</sup>	
	TWA	950 mg/m <sup>3</sup>	
Xylene (CAS 1330-20-7)	Ceiling	400 mg/m <sup>3</sup>	
	TWA	200 mg/m <sup>3</sup>	
Zinc oxide (CAS 1314-13-2)	Ceiling	5 mg/m <sup>3</sup>	
	TWA	2 mg/m <sup>3</sup>	

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

Components	Type	Value	Form
Chromium (CAS 7440-47-3)	TLV	0,5 mg/m <sup>3</sup>	Dust.
Copper (CAS 7440-50-8)	TLV	1 mg/m <sup>3</sup>	Dust.
		0,1 mg/m <sup>3</sup>	Fume.
Ethylbenzene (CAS 100-41-4)	TLV	217 mg/m <sup>3</sup>	
		50 ppm	
Iron oxide (CAS 1309-37-1)	TLV	3,5 mg/m <sup>3</sup>	
Nickel (CAS 7440-02-0)	TLV	0,05 mg/m <sup>3</sup>	Dust.
tert-Butyl acetate (CAS 540-88-5)	TLV	241 mg/m <sup>3</sup>	
		50 ppm	
Xylene (CAS 1330-20-7)	TLV	109 mg/m <sup>3</sup>	
		25 ppm	
Zinc oxide (CAS 1314-13-2)	TLV	4 mg/m <sup>3</sup>	

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

Components	Type	Value	Form
Chromium (CAS 7440-47-3)	TWA	2 mg/m <sup>3</sup>	
Copper (CAS 7440-50-8)	TWA	1 mg/m <sup>3</sup>	Total dust.
		0,2 mg/m <sup>3</sup>	Fine dust.
Ethylbenzene (CAS 100-41-4)	STEL	884 mg/m <sup>3</sup>	
		200 ppm	
	TWA	442 mg/m <sup>3</sup>	
		100 ppm	
Iron oxide (CAS 1309-37-1)	TWA	3,5 mg/m <sup>3</sup>	Fine dust, respiratory fraction
Nickel (CAS 7440-02-0)	TWA	0,5 mg/m <sup>3</sup>	
tert-Butyl acetate (CAS 540-88-5)	STEL	700 mg/m <sup>3</sup>	
		150 ppm	
	TWA	500 mg/m <sup>3</sup>	
		100 ppm	

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

Components	Type	Value	Form
Xylene (CAS 1330-20-7)	STEL	450 mg/m3	
		100 ppm	
	TWA	200 mg/m3	
Zinc oxide (CAS 1314-13-2)		50 ppm	
	TWA	5 mg/m3	

**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/m3	
Copper (CAS 7440-50-8)	TWA	0,02 mg/m3	Respirable dust and/or fume.
		0,02 mg/m3	Respirable.
Ethylbenzene (CAS 100-41-4)	STEL	880 mg/m3	
		200 ppm	
	TWA	220 mg/m3	
		50 ppm	
Iron oxide (CAS 1309-37-1)	TWA	5 mg/m3	Fume.
Nickel (CAS 7440-02-0)	TWA	0,01 mg/m3	Respirable.
Talc (CAS 14807-96-6)	TWA	2 mg/m3	Inhalable dust.
		1 mg/m3	Respirable.
tert-Butyl acetate (CAS 540-88-5)	STEL	725 mg/m3	
		150 ppm	
	TWA	240 mg/m3	
		50 ppm	
Xylene (CAS 1330-20-7)	STEL	440 mg/m3	
		100 ppm	
	TWA	220 mg/m3	
		50 ppm	
Zinc oxide (CAS 1314-13-2)	STEL	10 mg/m3	Fume.
	TWA	2 mg/m3	Fume.

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

Components	Type	Value	Form
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	Form
Ethylbenzene (CAS 100-41-4)	VLE	442 mg/m3	
		100 ppm	
	VME	88,4 mg/m3	
		20 ppm	
Xylene (CAS 1330-20-7)	VLE	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	Form
Copper (CAS 7440-50-8)	VLE	2 mg/m3	Dust.
<b>Regulatory status:</b>	Indicative limit (VL)		
	VME	1 mg/m3	Dust.
<b>Regulatory status:</b>	Indicative limit (VL)		

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

Components	Type	Value	Form
		0,2 mg/m3	Fume.
<b>Regulatory status:</b> Indicative limit (VL)			
Ethylbenzene (CAS 100-41-4)	VLE	442 mg/m3	
<b>Regulatory status:</b> Regulatory binding (VRC)			
		100 ppm	
<b>Regulatory status:</b> Regulatory binding (VRC)			
	VME	88,4 mg/m3	
<b>Regulatory status:</b> Regulatory binding (VRC)			
		20 ppm	
<b>Regulatory status:</b> Regulatory binding (VRC)			
Iron oxide (CAS 1309-37-1)	VME	5 mg/m3	Fume.
<b>Regulatory status:</b> Indicative limit (VL)			
Nickel (CAS 7440-02-0)	VME	1 mg/m3	
<b>Regulatory status:</b> Indicative limit (VL)			
tert-Butyl acetate (CAS 540-88-5)	VME	950 mg/m3	
<b>Regulatory status:</b> Indicative limit (VL)			
		200 ppm	
<b>Regulatory status:</b> Indicative limit (VL)			
Xylene (CAS 1330-20-7)	VLE	442 mg/m3	
<b>Regulatory status:</b> Regulatory binding (VRC)			
		100 ppm	
<b>Regulatory status:</b> Regulatory binding (VRC)			
	VME	221 mg/m3	
<b>Regulatory status:</b> Regulatory binding (VRC)			
		50 ppm	
<b>Regulatory status:</b> Regulatory binding (VRC)			
Zinc oxide (CAS 1314-13-2)	VME	5 mg/m3	Fume.
<b>Regulatory status:</b> Indicative limit (VL)			
		10 mg/m3	Dust.
<b>Regulatory status:</b> Indicative limit (VL)			

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

Components	Type	Value	Form
Copper (CAS 7440-50-8)	TWA	0,01 mg/m3	Respirable fraction.
Ethylbenzene (CAS 100-41-4)	TWA	88 mg/m3	
		20 ppm	
Iron oxide (CAS 1309-37-1)	TWA	4 mg/m3	Inhalable dust.
tert-Butyl acetate (CAS 540-88-5)	TWA	96 mg/m3	
		20 ppm	
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
Chromium (CAS 7440-47-3)	AGW	2 mg/m3	Inhalable fraction.
Ethylbenzene (CAS 100-41-4)	AGW	88 mg/m3	
		20 ppm	
Iron oxide (CAS 1309-37-1)	AGW	10 mg/m3	Inhalable fraction.
		1,25 mg/m3	Respirable fraction.

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

Components	Type	Value	Form
Nickel (CAS 7440-02-0)	AGW	0,03 mg/m3	Inhalable fraction.
		0,006 mg/m3	Respirable fraction.
tert-Butyl acetate (CAS 540-88-5)	AGW	96 mg/m3	
		20 ppm	
Xylene (CAS 1330-20-7)	AGW	200 mg/m3	
Zinc oxide (CAS 1314-13-2)	AGW	10 mg/m3	Inhalable fraction.
		1,25 mg/m3	Respirable fraction.

**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	
Iron oxide (CAS 1309-37-1)	STEL	10 mg/m3	
		100 ppm	
	TWA	10 mg/m3	
Talc (CAS 14807-96-6)	TWA	2 mg/m3	Respirable.
		10 mg/m3	Inhalable
tert-Butyl acetate (CAS 540-88-5)	STEL	1190 mg/m3	
		250 ppm	
	TWA	950 mg/m3	
Xylene (CAS 1330-20-7)	STEL	200 ppm	
		650 mg/m3	
	TWA	435 mg/m3	
Zinc oxide (CAS 1314-13-2)	STEL	10 mg/m3	Fume.
		5 mg/m3	Fume.
	TWA	5 mg/m3	

**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	
	TWA	442 mg/m3	
Iron oxide (CAS 1309-37-1)	TWA	4 mg/m3	Respirable.
Talc (CAS 14807-96-6)	TWA	2 mg/m3	Respirable dust.
Xylene (CAS 1330-20-7)	STEL	442 mg/m3	
	TWA	221 mg/m3	
Zinc oxide (CAS 1314-13-2)	TWA	5 mg/m3	Fume.
		5 mg/m3	Dust.

**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.

<b>Iceland. OELs. Regulation 390/2009 on Pollution Limits and Measures to Reduce Pollution at the Workplace, as amended</b>	<b>Components</b>	<b>Type</b>	<b>Value</b>	<b>Form</b>
Copper (CAS 7440-50-8)		TWA	1 mg/m <sup>3</sup>	Total dust.
			0,1 mg/m <sup>3</sup>	Respirable dust.
Ethylbenzene (CAS 100-41-4)		STEL	884 mg/m <sup>3</sup>	
			200 ppm	
			TWA	200 mg/m <sup>3</sup>
Iron oxide (CAS 1309-37-1)		TWA	50 ppm	
			3,5 mg/m <sup>3</sup>	Respirable dust.
Nickel (CAS 7440-02-0)		TWA	0,05 mg/m <sup>3</sup>	Dust.
tert-Butyl acetate (CAS 540-88-5)		TWA	700 mg/m <sup>3</sup>	
			150 ppm	
			STEL	442 mg/m <sup>3</sup>
Xylene (CAS 1330-20-7)		TWA	100 ppm	
			109 mg/m <sup>3</sup>	
			25 ppm	
Zinc oxide (CAS 1314-13-2)		TWA	4 mg/m <sup>3</sup>	Fume.

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

<b>Components</b>	<b>Type</b>	<b>Value</b>	<b>Form</b>
Chromium (CAS 7440-47-3)	TWA	2 mg/m <sup>3</sup>	
Copper (CAS 7440-50-8)	TWA	1 mg/m <sup>3</sup>	Dust and mist.
		0,2 mg/m <sup>3</sup>	Fume.
Ethylbenzene (CAS 100-41-4)	STEL	884 mg/m <sup>3</sup>	
		200 ppm	
		TWA	442 mg/m <sup>3</sup>
Iron oxide (CAS 1309-37-1)	STEL	100 ppm	
		10 mg/m <sup>3</sup>	Fume.
		5 mg/m <sup>3</sup>	Fume.
		4 mg/m <sup>3</sup>	Respirable dust.
Nickel (CAS 7440-02-0)	TWA	10 mg/m <sup>3</sup>	Total inhalable dust.
		0,5 mg/m <sup>3</sup>	
		10 mg/m <sup>3</sup>	Total inhalable dust.
Talc (CAS 14807-96-6)	TWA	0,8 mg/m <sup>3</sup>	Respirable dust.
		200 ppm	
tert-Butyl acetate (CAS 540-88-5)	TWA	200 ppm	
Xylene (CAS 1330-20-7)	STEL	442 mg/m <sup>3</sup>	
		100 ppm	
		TWA	221 mg/m <sup>3</sup>
Zinc oxide (CAS 1314-13-2)	STEL	50 ppm	
		10 mg/m <sup>3</sup>	Respirable fraction and fume.
		TWA	2 mg/m <sup>3</sup>

**Italy. OELs**

<b>Components</b>	<b>Type</b>	<b>Value</b>	<b>Form</b>
Chromium (CAS 7440-47-3)	TWA	0,5 mg/m <sup>3</sup>	
Copper (CAS 7440-50-8)	TWA	1 mg/m <sup>3</sup>	Dust and mist.
		0,2 mg/m <sup>3</sup>	Fume.
Ethylbenzene (CAS 100-41-4)	STEL	884 mg/m <sup>3</sup>	
		200 ppm	

<b>Italy. OELs</b>			
<b>Components</b>	<b>Type</b>	<b>Value</b>	<b>Form</b>
	TWA	442 mg/m3	
		100 ppm	
Iron oxide (CAS 1309-37-1)	TWA	5 mg/m3	Respirable fraction.
Nickel (CAS 7440-02-0)	TWA	1,5 mg/m3	Inhalable fraction.
Talc (CAS 14807-96-6)	TWA	2 mg/m3	Respirable fraction.
tert-Butyl acetate (CAS 540-88-5)	STEL	150 ppm	
	TWA	50 ppm	
Xylene (CAS 1330-20-7)	STEL	442 mg/m3	
		100 ppm	
	TWA	221 mg/m3	
		50 ppm	
Zinc oxide (CAS 1314-13-2)	STEL	10 mg/m3	Respirable fraction.
	TWA	2 mg/m3	Respirable fraction.

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

<b>Components</b>	<b>Type</b>	<b>Value</b>	
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	
Nickel (CAS 7440-02-0)	TWA	0,05 mg/m3	
tert-Butyl acetate (CAS 540-88-5)	TWA	200 mg/m3	
Xylene (CAS 1330-20-7)	STEL	442 mg/m3	
		100 ppm	
	TWA	221 mg/m3	
		50 ppm	
Zinc oxide (CAS 1314-13-2)	TWA	0,5 mg/m3	

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

<b>Components</b>	<b>Type</b>	<b>Value</b>	<b>Form</b>
Benzene, 1-chloro-4-(trifluoromethyl)- (CAS 98-56-6)	TWA	20 mg/m3	
Chromium (CAS 7440-47-3)	TWA	2 mg/m3	
Copper (CAS 7440-50-8)	TWA	1 mg/m3	Inhalable fraction.
		0,2 mg/m3	Respirable fraction.
Ethylbenzene (CAS 100-41-4)	STEL	884 mg/m3	
		200 ppm	
	TWA	442 mg/m3	
		100 ppm	
Iron oxide (CAS 1309-37-1)	TWA	3,5 mg/m3	Respirable fraction.
Nickel (CAS 7440-02-0)	TWA	0,5 mg/m3	
Talc (CAS 14807-96-6)	TWA	2 mg/m3	Inhalable fraction.
		1 mg/m3	Respirable fraction.
Xylene (CAS 1330-20-7)	STEL	442 mg/m3	

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

Components	Type	Value	Form
		100 ppm	
	TWA	221 mg/m3	
		50 ppm	
Zinc oxide (CAS 1314-13-2)	TWA	5 mg/m3	

**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	Form
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	
Xylene (CAS 1330-20-7)	STEL	442 mg/m3	
		100 ppm	
	TWA	221 mg/m3	
		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	Form
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	
Xylene (CAS 1330-20-7)	STEL	442 mg/m3	
		100 ppm	
	TWA	221 mg/m3	
		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/m3	
Copper (CAS 7440-50-8)	TWA	0,1 mg/m3	Inhalable fraction.
Ethylbenzene (CAS 100-41-4)	STEL	430 mg/m3	
	TWA	215 mg/m3	
Talc (CAS 14807-96-6)	TWA	0,25 mg/m3	Respirable dust.
Xylene (CAS 1330-20-7)	STEL	442 mg/m3	
	TWA	210 mg/m3	

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

Components	Type	Value	Form
Copper (CAS 7440-50-8)	TLV	1 mg/m3	Dust.
		0,1 mg/m3	Fume.
Ethylbenzene (CAS 100-41-4)	TLV	20 mg/m3	
		5 ppm	
Iron oxide (CAS 1309-37-1)	TLV	3 mg/m3	
Nickel (CAS 7440-02-0)	TLV	0,05 mg/m3	

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

Components	Type	Value	Form
Talc (CAS 14807-96-6)	TLV	6 mg/m <sup>3</sup>	Total dust.
		2 mg/m <sup>3</sup>	Respirable dust.
tert-Butyl acetate (CAS 540-88-5)	STEL	723 mg/m <sup>3</sup>	
		150 ppm	
		241 mg/m <sup>3</sup>	
Xylene (CAS 1330-20-7)	TLV	50 ppm	
		108 mg/m <sup>3</sup>	
		25 ppm	
Zinc oxide (CAS 1314-13-2)	TLV	5 mg/m <sup>3</sup>	Respirable dust.
		5 mg/m <sup>3</sup>	Dust.
		10 mg/m <sup>3</sup>	Total dust.

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

Components	Type	Value	Form
Chromium (CAS 7440-47-3)	TWA	0,5 mg/m <sup>3</sup>	
Copper (CAS 7440-50-8)	TWA	0,2 mg/m <sup>3</sup>	
Ethylbenzene (CAS 100-41-4)	STEL	400 mg/m <sup>3</sup>	
	TWA	200 mg/m <sup>3</sup>	
Iron oxide (CAS 1309-37-1)	STEL	5 mg/m <sup>3</sup>	Respirable fraction.
		10 mg/m <sup>3</sup>	Inhalable fraction.
	TWA	5 mg/m <sup>3</sup>	Inhalable fraction.
		2,5 mg/m <sup>3</sup>	Respirable fraction.
Nickel (CAS 7440-02-0)	TWA	0,25 mg/m <sup>3</sup>	
Talc (CAS 14807-96-6)	TWA	4 mg/m <sup>3</sup>	Inhalable fraction.
		1 mg/m <sup>3</sup>	Respirable fraction.
tert-Butyl acetate (CAS 540-88-5)	STEL	900 mg/m <sup>3</sup>	
	TWA	900 mg/m <sup>3</sup>	
Xylene (CAS 1330-20-7)	STEL	200 mg/m <sup>3</sup>	
	TWA	100 mg/m <sup>3</sup>	
Zinc oxide (CAS 1314-13-2)	STEL	10 mg/m <sup>3</sup>	Inhalable fraction.
	TWA	5 mg/m <sup>3</sup>	Inhalable fraction.

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

Components	Type	Value	Form
Ethylbenzene (CAS 100-41-4)	STEL	884 mg/m <sup>3</sup>	
		200 ppm	
		442 mg/m <sup>3</sup>	
Xylene (CAS 1330-20-7)	TWA	100 ppm	
		442 mg/m <sup>3</sup>	
	STEL	100 ppm	
		221 mg/m <sup>3</sup>	
		50 ppm	

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

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



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

Components	Type	Value	Form
Ethylbenzene (CAS 100-41-4)	TWA	20 ppm	
Iron oxide (CAS 1309-37-1)	TWA	5 mg/m3	Respirable fraction.
Nickel (CAS 7440-02-0)	TWA	1,5 mg/m3	Inhalable fraction.
Talc (CAS 14807-96-6)	TWA	2 mg/m3	Respirable fraction.
tert-Butyl acetate (CAS 540-88-5)	TWA	200 ppm	
Xylene (CAS 1330-20-7)	STEL	150 ppm	
	TWA	100 ppm	
Zinc oxide (CAS 1314-13-2)	STEL	10 mg/m3	Respirable fraction.
	TWA	2 mg/m3	Respirable fraction.

**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/m3	
Copper (CAS 7440-50-8)	STEL	1,5 mg/m3	Dust.
		0,2 mg/m3	Fume.
	TWA	0,5 mg/m3	Dust.
Ethylbenzene (CAS 100-41-4)	STEL	884 mg/m3	
		200 ppm	
	TWA	442 mg/m3	
Iron oxide (CAS 1309-37-1)	STEL	10 mg/m3	Dust and fume.
	TWA	5 mg/m3	Dust and fume.
Nickel (CAS 7440-02-0)	STEL	0,5 mg/m3	
	TWA	0,1 mg/m3	
Talc (CAS 14807-96-6)	TWA	2 mg/m3	Respirable fraction.
Xylene (CAS 1330-20-7)	STEL	442 mg/m3	
		100 ppm	
	TWA	221 mg/m3	
Zinc oxide (CAS 1314-13-2)	STEL	50 ppm	
	TWA	10 mg/m3	Fume.
	TWA	5 mg/m3	Fume.

**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/m3	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
Chromium (CAS 7440-47-3)	TWA	2 mg/m3	
Copper (CAS 7440-50-8)	TWA	1 mg/m3	Inhalable fraction.
		0,2 mg/m3	Respirable fume.
Ethylbenzene (CAS 100-41-4)	TWA	442 mg/m3	
		100 ppm	
Iron (Massive metal) (CAS 7439-89-6)	TWA	6 mg/m3	
Iron oxide (CAS 1309-37-1)	TWA	4 mg/m3	Inhalable fume.
		1,5 mg/m3	Respirable fume.
Talc (CAS 14807-96-6)	TWA	2 mg/m3	Respirable fraction.

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

Components	Type	Value	Form
		10 mg/m3	Total
tert-Butyl acetate (CAS 540-88-5)	TWA	500 mg/m3	
		100 ppm	
trizinc bis(orthophosphate) (CAS 7779-90-0)	TWA	2 mg/m3	Inhalable fraction.
		0,1 mg/m3	Respirable fraction.
Xylene (CAS 1330-20-7)	TWA	221 mg/m3	
		50 ppm	
Zinc oxide (CAS 1314-13-2)	TWA	1 mg/m3	Respirable fume.

**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	Form
Ethylbenzene (CAS 100-41-4)	STEL	884 mg/m3	
		200 ppm	
Talc (CAS 14807-96-6)	TWA	2 mg/m3	Respirable fraction.
tert-Butyl acetate (CAS 540-88-5)	STEL	700 mg/m3	
		150 ppm	
Xylene (CAS 1330-20-7)	STEL	442 mg/m3	
		100 ppm	
Zinc oxide (CAS 1314-13-2)	STEL	1 mg/m3	Respirable fume.

**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
Chromium (CAS 7440-47-3)	KTV	2 mg/m3	Inhalable fraction.
Ethylbenzene (CAS 100-41-4)	KTV	884 mg/m3	
		200 ppm	
Iron oxide (CAS 1309-37-1)	KTV	20 mg/m3	Inhalable fraction.
		2,5 mg/m3	Respirable fraction.
Nickel (CAS 7440-02-0)	KTV	0,048 mg/m3	Respirable fraction.
Xylene (CAS 1330-20-7)	KTV	442 mg/m3	
		100 ppm	
Zinc oxide (CAS 1314-13-2)	KTV	20 mg/m3	Inhalable fraction.
		2,5 mg/m3	Respirable fraction.

**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
Chromium (CAS 7440-47-3)	TWA	2 mg/m3	Inhalable fraction.
Ethylbenzene (CAS 100-41-4)	TWA	442 mg/m3	
		100 ppm	
Iron oxide (CAS 1309-37-1)	TWA	10 mg/m3	Inhalable fraction.
		1,25 mg/m3	Respirable fraction.
Nickel (CAS 7440-02-0)	TWA	0,006 mg/m3	Respirable fraction.
tert-Butyl acetate (CAS 540-88-5)	TWA	200 mg/m3	
		42 ppm	
Xylene (CAS 1330-20-7)	TWA	221 mg/m3	
		50 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
Zinc oxide (CAS 1314-13-2)	TWA	10 mg/m <sup>3</sup>	Inhalable fraction.
		1,25 mg/m <sup>3</sup>	Respirable fraction.

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

Components	Type	Value	Form
Copper (CAS 7440-50-8)	TWA	0,01 mg/m <sup>3</sup>	Respirable fraction.
Ethylbenzene (CAS 100-41-4)	STEL	884 mg/m <sup>3</sup>	
		200 ppm	
		441 mg/m <sup>3</sup>	
Iron oxide (CAS 1309-37-1)	TWA	100 ppm	
		5 mg/m <sup>3</sup>	Dust and fume.
		1 mg/m <sup>3</sup>	
Nickel (CAS 7440-02-0)	TWA	2 mg/m <sup>3</sup>	
		2 mg/m <sup>3</sup>	Respirable fraction.
		724 mg/m <sup>3</sup>	
tert-Butyl acetate (CAS 540-88-5)	STEL	150 ppm	
		241 mg/m <sup>3</sup>	
		50 ppm	
Xylene (CAS 1330-20-7)	STEL	442 mg/m <sup>3</sup>	
		100 ppm	
		221 mg/m <sup>3</sup>	
Zinc oxide (CAS 1314-13-2)	TWA	50 ppm	
		10 mg/m <sup>3</sup>	Respirable fraction.
		2 mg/m <sup>3</sup>	Respirable fraction.

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

Components	Type	Value	Form
Chromium (CAS 7440-47-3)	TWA	0,5 mg/m <sup>3</sup>	Total dust.
Copper (CAS 7440-50-8)	TWA	0,01 mg/m <sup>3</sup>	Respirable dust.
Ethylbenzene (CAS 100-41-4)	Ceiling	884 mg/m <sup>3</sup>	
		200 ppm	
		220 mg/m <sup>3</sup>	
Iron oxide (CAS 1309-37-1)	TWA	50 ppm	
		3,5 mg/m <sup>3</sup>	Respirable dust.
		0,5 mg/m <sup>3</sup>	Total dust.
Nickel (CAS 7440-02-0)	TWA	2 mg/m <sup>3</sup>	Total dust.
		2 mg/m <sup>3</sup>	Total dust.
		1 mg/m <sup>3</sup>	Respirable dust.
tert-Butyl acetate (CAS 540-88-5)	Ceiling	723 mg/m <sup>3</sup>	
		150 ppm	
		700 mg/m <sup>3</sup>	
Xylene (CAS 1330-20-7)	STEL	150 ppm	
		500 mg/m <sup>3</sup>	
		100 ppm	
Xylene (CAS 1330-20-7)	Ceiling	442 mg/m <sup>3</sup>	
		100 ppm	
		221 mg/m <sup>3</sup>	
Xylene (CAS 1330-20-7)	TWA	50 ppm	
		221 mg/m <sup>3</sup>	
		50 ppm	

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

Components	Type	Value	Form
Zinc oxide (CAS 1314-13-2)	TWA	5 mg/m <sup>3</sup>	Total dust.

**Switzerland. SUVA Grenzwerte am Arbeitsplatz: Aktuelle MAK-Werte**

Components	Type	Value	Form
Chromium (CAS 7440-47-3)	TWA	0,5 mg/m <sup>3</sup>	Inhalable fraction.
Copper (CAS 7440-50-8)	STEL	0,2 mg/m <sup>3</sup>	Inhalable fraction.
	TWA	0,1 mg/m <sup>3</sup>	Inhalable fraction.
Ethylbenzene (CAS 100-41-4)	STEL	220 mg/m <sup>3</sup>	
		50 ppm	
	TWA	220 mg/m <sup>3</sup>	
		50 ppm	
Iron oxide (CAS 1309-37-1)	TWA	3 mg/m <sup>3</sup>	Respirable fraction.
Nickel (CAS 7440-02-0)	TWA	0,5 mg/m <sup>3</sup>	Inhalable fraction.
Talc (CAS 14807-96-6)	TWA	3 mg/m <sup>3</sup>	Respirable fraction.
tert-Butyl acetate (CAS 540-88-5)	STEL	480 mg/m <sup>3</sup>	
		100 ppm	
	TWA	240 mg/m <sup>3</sup>	
		50 ppm	
Xylene (CAS 1330-20-7)	STEL	440 mg/m <sup>3</sup>	
		100 ppm	
	TWA	220 mg/m <sup>3</sup>	
		50 ppm	
Zinc oxide (CAS 1314-13-2)	STEL	3 mg/m <sup>3</sup>	Respirable fume.
	TWA	3 mg/m <sup>3</sup>	Respirable fume.

**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 <sup>3</sup>	
Copper (CAS 7440-50-8)	STEL	2 mg/m <sup>3</sup>	Inhalable dusts and mists.
	TWA	1 mg/m <sup>3</sup>	Inhalable dusts and mists.
		0,2 mg/m <sup>3</sup>	Fume.
Ethylbenzene (CAS 100-41-4)	STEL	552 mg/m <sup>3</sup>	
		125 ppm	
	TWA	441 mg/m <sup>3</sup>	
		100 ppm	
Iron oxide (CAS 1309-37-1)	STEL	10 mg/m <sup>3</sup>	Fume.
	TWA	5 mg/m <sup>3</sup>	Fume.
		4 mg/m <sup>3</sup>	Respirable.
		10 mg/m <sup>3</sup>	Inhalable
Nickel (CAS 7440-02-0)	TWA	0,5 mg/m <sup>3</sup>	
Talc (CAS 14807-96-6)	TWA	1 mg/m <sup>3</sup>	Respirable dust.
tert-Butyl acetate (CAS 540-88-5)	STEL	1210 mg/m <sup>3</sup>	
		250 ppm	
	TWA	966 mg/m <sup>3</sup>	
		200 ppm	
Xylene (CAS 1330-20-7)	STEL	441 mg/m <sup>3</sup>	
		100 ppm	
	TWA	220 mg/m <sup>3</sup>	

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

Components	Type	Value	Form
Zinc oxide (CAS 1314-13-2)	TWA	50 ppm	
		4 mg/m <sup>3</sup>	Respirable dust.
		10 mg/m <sup>3</sup>	Inhalable dust.

**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 <sup>3</sup>
Ethylbenzene (CAS 100-41-4)	STEL	884 mg/m <sup>3</sup>
	TWA	200 ppm
Xylene (CAS 1330-20-7)	TWA	442 mg/m <sup>3</sup>
		100 ppm
	STEL	442 mg/m <sup>3</sup>
		100 ppm
TWA	221 mg/m <sup>3</sup>	
	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)	1,5 g/g	Mandelic acid	Creatinine in urine	*
	1,5 mg/l	ethylbenzene	Blood	*
	1,12 mol/mol	Mandelic acid	Creatinine in urine	*
	14,1 umol/l	ethylbenzene	Blood	*
Xylene (CAS 1330-20-7)	1,5 g/g	Methylhippuric acids	Creatinine in urine	*
	1,5 mg/l	xylene	Blood	*
	0,88 mol/mol	Methylhippuric acids	Creatinine in urine	*
	14,13 umol/l	xylene	Blood	*

\* - 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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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 Phenylglyoxylsäure	Creatinine in 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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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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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
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Ethylbenzene (CAS 100-41-4)	8,03 mg/g	2 and 4-ethylphenol	Creatinine in urine	*
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	12 mg/l	2 and 4-ethylphenol	Urine	*
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Xylene (CAS 1330-20-7)	1334 mg/g	Methylhippuric acids	Creatinine in urine	*
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	2000 mg/l	Methylhippuric acids	Urine	*
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	1,5 mg/l	xylene	Blood	*
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\* - 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
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Ethylbenzene (CAS 100-41-4)	700 mg/g	Suma del ácido mandélico y el ácido fenilglioxílico	Creatinine in urine	*
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**Spain. BELs. INSST, Límites de Exposición Profesional Para Agentes Químicos, Table 3-Valores Límite Biológicos (VLB)**

Components	Value	Determinant	Specimen	Sampling Time
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
Ethylbenzene (CAS 100-41-4)	600 mg/g	Mandelsäure + Phenylglyoxylsäure	Creatinine in urine	*
Nickel (CAS 7440-02-0)	45 µg/l	Nickel	Urine	*
Xylene (CAS 1330-20-7)	2 g/l	Methylhippursäure	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**

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

**Belgium OELs: Skin designation**

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

**Bulgaria OELs: Skin designation**

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

**Croatia ELVs: Skin designation**

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

**Czech Republic PELs: Skin designation**

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

**Denmark GV: Skin designation**

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

**Estonia OELs: Skin designation**

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

**EU Exposure Limit Values: Skin designation**

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

**Finland Exposure Limit Values: Skin designation**

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

**France INRS: Skin designation**

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

**France Mandatory OELs (VLEP): Skin designation**

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

**Germany DFG MAK (advisory): Skin designation**

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

**Germany TRGS 900 Limit Values: Skin designation**

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**

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

**Iceland OELs: Skin designation**

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

**Ireland Exposure Limit Values: Skin designation**

Xylene (CAS 1330-20-7)	Can be absorbed through the skin.
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**Italy OELs: Skin designation**

Xylene (CAS 1330-20-7)	Danger of cutaneous absorption
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**Latvia OELs: Skin designation**

Xylene (CAS 1330-20-7)	Can be absorbed through the skin.
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**Lithuania OELs: Skin designation**

Benzene, 1-chloro-4-(trifluoromethyl)- (CAS 98-56-6)	Can be absorbed through the skin.
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Xylene (CAS 1330-20-7)	Can be absorbed through the skin.
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**Luxembourg OELs: Skin designation**

Xylene (CAS 1330-20-7)	Can be absorbed through the skin.
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**Malta OELs: Skin designation**

Xylene (CAS 1330-20-7)	Can be absorbed through the skin.
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**Netherlands OELs (binding): Skin designation**

Xylene (CAS 1330-20-7)	Can be absorbed through the skin.
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**Norway Exposure Limit Values: Skin designation**

Xylene (CAS 1330-20-7)	Can be absorbed through the skin.
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**Portugal OELs: Skin designation**

Xylene (CAS 1330-20-7)	Can be absorbed through the skin.
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**Romania OELs: Skin designation**

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

Xylene (CAS 1330-20-7)	Can be absorbed through the skin.
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**Slovenia. OELs. Regulations concerning protection of workers against risks due to exposure to chemicals while working (Official Gazette of the Republic of Slovenia)**

Xylene (CAS 1330-20-7)	Can be absorbed through the skin.
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**Spain OELs: Skin designation**

Xylene (CAS 1330-20-7)	Can be absorbed through the skin.
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**Sweden Threshold Limit Values: Skin designation**

Xylene (CAS 1330-20-7)	Can be absorbed through the skin.
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**Switzerland SUVA Limit Values at the Workplace: Skin designation**

Xylene (CAS 1330-20-7)	Can be absorbed through the skin.
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**UK EH40 WEL: Skin designation**

Nickel (CAS 7440-02-0)	Can be absorbed through the skin.
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Xylene (CAS 1330-20-7)	Can be absorbed through the skin.
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**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. General ventilation normally adequate. Provide easy access to water supply or an emergency shower.

**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 151 +/- 8 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.



<b>Hygiene measures</b>	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.
<b>Environmental exposure controls</b>	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

<b>Physical state</b>	Liquid.
<b>Form</b>	Liquid.
<b>Colour</b>	Red.
<b>Odour</b>	Characteristic of solvents.
<b>Odour threshold</b>	Property has not been measured.
<b>Melting point/freezing point</b>	Technically not possible to determine.
<b>Boiling point or initial boiling point and boiling range</b>	97 - 139 °C (206,6 - 282,2 °F)
<b>Flammability</b>	Flammable liquid and vapour.
<b>Upper/lower flammability or explosive limits</b>	
<b>Explosive limit - lower (%)</b>	0,9 % (oxsol)
<b>Explosive limit – upper (%)</b>	10,5 % (oxsol)
<b>Flash point</b>	24 °C (75,2 °F) Closed cup
<b>Auto-ignition temperature</b>	> 500 °C (> 932 °F) (oxsol)
<b>Decomposition temperature</b>	377,1 °C (710,7 °F)
<b>pH</b>	Not applicable (material is insoluble in water).
<b>Kinematic viscosity</b>	450 mm <sup>2</sup> /s (25 °C (77 °F))
<b>Solubility</b>	
<b>Solubility (water)</b>	(< 0,1%) Insoluble in water.
<b>Partition coefficient (n-octanol/water) (log value)</b>	Not applicable, product is a mixture.
<b>Vapour pressure</b>	5,3 mmHg (oxsol) (20 °C (68 °F))
<b>Density and/or relative density</b>	
<b>Density</b>	1,55 g/cm <sup>3</sup> (25 °C (77 °F))
<b>Relative density</b>	1,55 (Water=1) (25 °C (77 °F))
<b>Vapour density</b>	> 1 (Air=1) (25 °C (77 °F))
<b>Particle characteristics</b>	
<b>Particle size</b>	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

<b>Evaporation rate</b>	Property has not been measured.
<b>Flammability</b>	Flammable liquid and vapour.
<b>Viscosity</b>	Property has not been measured.
<b>VOC</b>	679,75 g/l (EU VOC) 49,72 g/l (US VOC) 5,8 lb/gal (EU VOC) 0,41 lb/gal (US VOC)
<b>Other safety characteristics</b>	Total weight solids: 56.15 % w/w Total volume solids: 39.36 % v/v

## SECTION 10: Stability and reactivity

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

<b>10.3. Possibility of hazardous reactions</b>	No dangerous reaction known under conditions of normal use.
<b>10.4. Conditions to avoid</b>	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Protect against direct sunlight. Contact with incompatible materials.
<b>10.5. Incompatible materials</b>	Strong acids. Strong oxidising agents. Strong reducing agents. Halogens.
<b>10.6. Hazardous decomposition products</b>	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours. Aldehydes. Chlorine compounds. Fluorine compounds. Fumes of metal oxides.

## SECTION 11: Toxicological information

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

### Information on likely routes of exposure

<b>Inhalation</b>	May cause damage to organs through prolonged or repeated exposure by inhalation. Suspected of damaging fertility or the unborn child by inhalation.
<b>Skin contact</b>	May cause an allergic skin reaction. Causes mild skin irritation.
<b>Eye contact</b>	Direct contact with eyes may cause temporary irritation.
<b>Ingestion</b>	May cause discomfort if swallowed.

**Symptoms** Direct contact with eyes may cause temporary irritation. Mild skin irritation. 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
Ethylbenzene (CAS 100-41-4)		
<b>Acute</b>		
<b>Dermal</b>		
LD50	Rabbit	15400 mg/kg
<b>Inhalation</b>		
LC50	Rat	17,4 mg/l, 4 hours
<b>Oral</b>		
LD50	Rat	3500 - 4700 mg/kg
Talc (CAS 14807-96-6)		
<b>Acute</b>		
<b>Oral</b>		
LD50	Rat	> 5000 mg/kg
Xylene (CAS 1330-20-7)		
<b>Acute</b>		
<b>Oral</b>		
LD50	Rat	3523 mg/kg
Zinc oxide (CAS 1314-13-2)		
<b>Acute</b>		
<b>Inhalation</b>		
LC50	Mouse	> 5,7 mg/l, 4 Hours
<b>Oral</b>		
LD50	Rat	> 5000 mg/kg
<b>Skin corrosion/irritation</b>	Based on available data, the classification criteria are not met.	
<b>Serious eye damage/eye irritation</b>	Based on available data, the classification criteria are not met.	
<b>Respiratory sensitisation</b>	Based on available data, the classification criteria are not met.	
<b>Skin sensitisation</b>	May cause an allergic skin reaction.	
<b>Germ cell mutagenicity</b>	Based on available data, the classification criteria are not met.	
<b>Carcinogenicity</b>	Suspected of causing cancer.	
<b>IARC Monographs. Overall Evaluation of Carcinogenicity</b>		
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.	
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)**

Nickel (CAS 7440-02-0)

Carcinogenic, Category 2.

<b>Reproductive toxicity</b>	Suspected of damaging fertility or the unborn child by inhalation.
<b>Specific target organ toxicity - single exposure</b>	Based on available data, the classification criteria are not met.
<b>Specific target organ toxicity - repeated exposure</b>	May cause damage to organs (respiratory tract) through prolonged or repeated exposure by inhalation.
<b>Aspiration hazard</b>	Based on available data, the classification criteria are not met.
<b>Mixture versus substance information</b>	No information available.

**11.2. Information on other hazards**

<b>Endocrine disrupting properties</b>	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.
<b>Other information</b>	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)			
<b>Aquatic</b>			
<i>Chronic</i>			
Other	NOEC	Juga plicifera	6 µg/l
Nickel (CAS 7440-02-0)			
<b>Aquatic</b>			
<i>Acute</i>			
Crustacea	EC50	Water flea (Daphnia magna)	1 mg/l, 48 hours
	LC50	Calanoid copepod (Eurytemora affinis)	>= 7,35 - <= 12,12 mg/l, 96 hours
Xylene (CAS 1330-20-7)			
<b>Aquatic</b>			
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
tert-Butyl acetate (CAS 540-88-5)	1,76

**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
Nickel (CAS 7440-02-0)	Nickel (Ni) 150 mg/kg Nickel (Ni) 50 mg/kg

trizinc bis(orthophosphate) (CAS 7779-90-0)	Nickel (Ni) 500 mg/kg Zinc (Zn) 1000 mg/kg Zinc (Zn) 200 mg/kg Zinc (Zn) 500 mg/kg
Zinc oxide (CAS 1314-13-2)	Zinc (Zn) 1000 mg/kg Zinc (Zn) 200 mg/kg Zinc (Zn) 500 mg/kg

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

<b>Residual waste</b>	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.
<b>Contaminated packaging</b>	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.
<b>EU waste code</b>	The Waste code should be assigned in discussion between the user, the producer and the waste disposal company. 08 01 11*
<b>Disposal methods/information</b>	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Incinerate the material under controlled conditions in an approved incinerator. 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.
<b>Special precautions</b>	Dispose in accordance with all applicable regulations.

## SECTION 14: Transport information

### ADR

<b>14.1. UN number</b>	UN1263
<b>14.2. UN proper shipping name</b>	Paint
<b>14.3. Transport hazard class(es)</b>	
Class	3
Subsidiary risk	-
Label(s)	3
Hazard No. (ADR)	30
Tunnel restriction code	D/E
<b>14.4. Packing group</b>	III
<b>14.5. Environmental hazards</b>	Yes
<b>14.6. Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling.

### RID

<b>14.1. UN number</b>	UN1263
<b>14.2. UN proper shipping name</b>	Paint
<b>14.3. Transport hazard class(es)</b>	
Class	3
Subsidiary risk	-
Label(s)	3
<b>14.4. Packing group</b>	III
<b>14.5. Environmental hazards</b>	Yes
<b>14.6. Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling.

### ADN

<b>14.1. UN number</b>	UN1263
<b>14.2. UN proper shipping name</b>	Paint
<b>14.3. Transport hazard class(es)</b>	
Class	3
Subsidiary risk	-
Label(s)	3
<b>14.4. Packing group</b>	III
<b>14.5. Environmental hazards</b>	Yes
<b>14.6. Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling.

### IATA

<b>14.1. UN number</b>	UN1263
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<b>14.2. UN proper shipping name</b>	Paint
<b>14.3. Transport hazard class(es)</b>	
Class	3
Subsidiary risk	-
Label(s)	3
<b>14.4. Packing group</b>	III
<b>14.5. Environmental hazards</b>	Yes
<b>ERG Code</b>	3L
<b>14.6. Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling.

#### IMDG

<b>14.1. UN number</b>	UN1263
<b>14.2. UN proper shipping name</b>	PAINT
<b>14.3. Transport hazard class(es)</b>	
Class	3
Subsidiary risk	-
<b>14.4. Packing group</b>	III
<b>14.5. Environmental hazards</b>	
Marine pollutant	Yes
<b>EmS</b>	F-E, S-E
<b>14.6. Special precautions for user</b>	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)  
Talc (CAS 14807-96-6)  
trizinc bis(orthophosphate) (CAS 7779-90-0)  
Xylene (CAS 1330-20-7)  
Zinc oxide (CAS 1314-13-2)

**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 authorization, 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

trizinc bis(orthophosphate) (CAS 7779-90-0)	3
Xylene (CAS 1330-20-7)	75
Zinc oxide (CAS 1314-13-2)	3

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

Not listed.

**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  
- P5a, b or c FLAMMABLE LIQUIDS  
- 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 for work with chemical agents in accordance with Directive 98/24/EC, as amended.

**Contains a substance which is included on the TRGS 905 list of carcinogenic, germ cell mutagenic and reproductive toxic substances**

Zinc oxide (CAS 1314-13-2)

Anorganische Faserstäube, soweit nicht erwähnt (ausgenommen Gipsfasern und Wollastonitfasern)

**Contains a substance which is included on the TRGS 907 list of registry of sensitizing substances**

Nickel (CAS 7440-02-0)

Nickelverbindungen, Wasserlösliche insbesondere Ni-sulfat und Ni-dichlorid

**France regulations**

**France INRS Table of Occupational Diseases**

Talc (CAS 14807-96-6)

Affections consécutives à l'inhalation de poussières minérales renfermant de la silice cristalline (quartz, cristobalite, tridymite), des silicates cristallins (kaolin, talc), du graphite ou de la houille 25

tert-Butyl acetate (CAS 540-88-5)

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**

AGW: Occupational threshold limit value (Arbeitsplatzgrenzwert – Germany).  
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.  
EC50: Effective Concentration 50%.  
IATA: International Air Transport Association.  
IMDG Code: International Maritime Dangerous Goods Code.  
IMO: International Maritime Organization.  
KTV: Short term exposure limit  
LC50: Lethal Concentration 50%.  
LD50: Lethal Dose 50%.  
MAC: Maximum Allowed 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**

H225 Highly flammable liquid and vapour.  
H226 Flammable liquid and vapour.  
H304 May be fatal if swallowed and enters airways.  
H312 Harmful in contact with skin.  
H315 Causes skin irritation.  
H317 May cause an allergic skin reaction.  
H319 Causes serious eye irritation.  
H332 Harmful if inhaled.  
H335 May cause respiratory irritation.  
H336 May cause drowsiness or dizziness.  
H351 Suspected of causing cancer.  
H361 Suspected of damaging fertility or the unborn child.  
H372 Causes damage to organs through prolonged or repeated exposure.  
H373 May cause damage to organs through prolonged or repeated exposure.  
H400 Very toxic to aquatic life.  
H410 Very toxic to aquatic life with long lasting effects.  
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.