Safety Data Sheet
MACROFAN AP AUTOLEVEL PRIMER BLACK
Safety Data Sheet dated 21/12/2022 version 4

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

1.1. Product identifier

Mixture identification:

Trade name: MACROFAN AP AUTOLEVEL PRIMER BLACK

Trade code: L0MF0310

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

Recommended use: Coatings and paints, thinners, paint removers

Dual compound primer (undercoat)

Liquid pigmented dispersion

Professional uses

Uses advised against: N.A.

1.3. Details of the supplier of the safety data sheet

Company: Lechler SpA - Via Cecilio, 17 - 22100 Como - CO - Italy

Telephone: +39031586111

First Email: safety@lechler.eu

1.4. Emergency telephone number

UNITED KINGDOM: Emergency Number 0044 1606738600 - This telephone number is available during office hours only (8.45-16.45).

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) n. 1272/2008 (CLP)

Flam. Liq. 3	Flammable liquid and vapour.
Eye Irrit. 2	Causes serious eye irritation.
STOT SE 3	May cause drowsiness or dizziness.
Aquatic Chronic 2	Toxic to aquatic life with long lasting effects.

Adverse physicochemical, human health and environmental effects:

No other hazards

2.2. Label elements

Regulation (EC) No 1272/2008 (CLP):

Hazard pictograms and Signal Word

Warning

Hazard statements

H226	Flammable liquid and vapour.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statements

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.

P273	Avoid release to the environment.
P370+P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P391	Collect spillage.
P403+P235	Store in a well-ventilated place. Keep cool.

Special Provisions:

EUH208	Contains methyl methacrylate. May produce an allergic reaction.
EUH208	Contains tert-butyl acrylate. May produce an allergic reaction.
EUH208	Contains maleic anhydride. May produce an allergic reaction.

Contains

n-butyl acetate

heptan-2-one

Hydrocarbons, C9, aromatics

2-methoxy-1-methylethyl acetate

Special provisions according to Annex XVII of REACH and subsequent amendments:

None.

2.3. Other hazards

Results of PBT and vPvB assessment Not a PBT, vPvB substance as per the criteria of the REACH Regulation. Endocrine disrupting properties-Toxicity The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher. Endocrine disrupting properties-Ecotoxicity The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Other Hazards: No other hazards

SECTION 3: Composition/information on ingredients

3.1. Substances

N.A.

3.2. Mixtures

Mixture identification: MACROFAN AP AUTOLEVEL PRIMER BLACK

Hazardous components within the meaning of the CLP regulation and related classification:

Qty	Name	Ident. Numb.	Classification	Registration Number
≥25 - ≤30 %	kaolin	CAS:1332-58-7 EC:310-194-1	Substance with a Union workplace exposure limit.	
≥10 - ≤12.5 %	n-butyl acetate	CAS:123-86-4 EC:204-658-1 Index:607-025-00-1	Flam. Liq. 3, H226; STOT SE 3, H336, EUH066	01-2119485493-29
≥5 - ≤7 %	heptan-2-one	CAS:110-43-0 EC:203-767-1 Index:606-024-00-3	Flam. Liq. 3, H226; Acute Tox. 4, H302; Acute Tox. 4, H332; STOT SE 3, H336	01-2119902391-49
≥5 - ≤7 %	trizinc bis(orthophosphate)	CAS:7779-90-0 EC:231-944-3 Index:030-011-00-6	Aquatic Acute 1, H400; Aquatic Chronic 1, H410	01-2119485044-40
≥3 - ≤5 %	barium sulfate	CAS:7727-43-7 EC:231-784-4		01-2119491274-35
≥3 - ≤5 %	Hydrocarbons, C9, aromatics	EC:918-668-5	Flam. Liq. 3, H226; Asp. Tox. 1, H304; Aquatic Chronic 2, H411; STOT SE 3, H335; STOT SE 3, H336, EUH066, DECLP(*)	01-2119455851-35
≥3 - ≤5 %	xylene	CAS:1330-20-7 EC:215-535-7 Index:601-022-00-9	Flam. Liq. 3, H226; Acute Tox. 4, H332; Acute Tox. 4, H312; Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT RE 2, H373; Asp. Tox. 1, H304; Aquatic Chronic 3, H412; STOT SE 3, H335	01-2119488216-32
≥2.5 - ≤3	phosphoric acid polyester		Eye Irrit. 2, H319	

%				
≥1 - ≤2.5 %	silicon dioxide	CAS:7631-86-9 EC:231-545-4	Substance with a Union workplace exposure limit.	01-2119379499-16
≥1 - ≤2.5 %	2-methoxy-1-methylethyl acetate	CAS:108-65-6 EC:203-603-9 Index:607-195-00-7	STOT SE 3, H336; Flam. Liq. 3, H226	01-2119475791-29
≥1 - ≤2.5 %	butan-1-ol	CAS:71-36-3 EC:200-751-6 Index:603-004-00-6	Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Dam. 1, H318; Flam. Liq. 3, H226; STOT SE 3, H335; STOT SE 3, H336	01-2119484630-38
≥1 - ≤2.5 %	aluminium orthophosphate	CAS:7784-30-7 EC:232-056-9		01-2119971255-34-0006
≥1 - ≤2.5 %	Carbon black	CAS:1333-86-4 EC:215-609-9		01-2119384822-32
≥0.5 - ≤1 %	ethylbenzene	CAS:100-41-4 EC:202-849-4 Index:601-023-00-4	Flam. Liq. 2, H225; Acute Tox. 4, H332; Asp. Tox. 1, H304; STOT RE 2, H373	01-2119489370-35
≥0.1 - ≤0.25 %	(2-methoxymethylethoxy)propanol	CAS:34590-94-8 EC:252-104-2	Substance with a Union workplace exposure limit.	01-2119450011-60
≥0.1 - ≤0.25 %	methyl methacrylate	CAS:80-62-6 EC:201-297-1 Index:607-035-00-6	Flam. Liq. 2, H225; Skin Irrit. 2, H315; Skin Sens. 1, H317; STOT SE 3, H335	01-2119452498-28
≥0.1 - ≤0.25 %	tert-butyl acrylate	CAS:1663-39-4 EC:216-768-7 Index:607-245-00-8	Flam. Liq. 2, H225; Acute Tox. 4, H302; Acute Tox. 3, H331; Acute Tox. 4, H312; Skin Irrit. 2, H315; Skin Sens. 1, H317; STOT SE 3, H335; Aquatic Chronic 2, H411	01-2119451175-43
≥0.1 - ≤0.25 %	zinc oxide	CAS:1314-13-2 EC:215-222-5 Index:030-013-00-7	Aquatic Acute 1, H400; Aquatic Chronic 1, H410, M-Chronic:1, M-Acute:1	01-2119463881-32
≥0.1 - ≤0.25 %	phosphoric acid	CAS:7664-38-2 EC:231-633-2 Index:015-011-00-6	Met. Corr. 1, H290 Skin Corr. 1B, H314 Eye Dam. 1, H318 Specific Concentration Limits: C ≥ 25%: Skin Corr. 1B H314 10% ≤ C < 25%: Skin Irrit. 2 H315 10% ≤ C < 25%: Eye Irrit. 2 H319	01-2119485924-24
< 0,1 %	toluene	CAS:108-88-3 EC:203-625-9 Index:601-021-00-3	Flam. Liq. 2, H225; Skin Irrit. 2, H315; STOT RE 2, H373; Asp. Tox. 1, H304; Repr. 2, H361; STOT SE 3, H336	01-2119471310-51
< 0,1 %	maleic anhydride	CAS:108-31-6 EC:203-571-6 Index:607-096-00-9	Acute Tox. 4, H302 Skin Corr. 1B, H314 Eye Dam. 1, H318 Resp. Sens. 1, H334 Skin Sens. 1A, H317 STOT RE 1, H372, EUH071 Specific Concentration Limits: C ≥ 0,001%: Skin Sens. 1A H317	01-2119472428-31

(*)DECLP Substance classified in accordance with Note P, Annex VI of EC Regulation (EC) 1272/2008.

The harmonised classification as a carcinogen or mutagen applies unless it can be shown that the substance contains less than 0,1 % w/w benzene (Einecs No 200-753-7), in which case a classification in accordance with Title II of this Regulation shall be performed also for those hazard classes. Where the substance is not classified as a carcinogen or mutagen, at least the precautionary statements (P102-)P260-P262-P301 + P310-P331 shall apply.

Substances in nanoform:

Carbon black	CAS:1333-86-4 EC:215-609-9	Particle size distribution:	D10: >= 18 nm <= 61 nm D50: >= 36 nm <= 101 nm D90: >= 66 nm <= 173 nm (Measurement technique: STEM)
		Shape and aspect ratio:	Spheres, (:1): < 3 (Measurement technique: TEM)
		Crystallinity:	Amorphous: = 100% - (Measurement technique: X-ray Diffraction (XRD))
		Surface Treatment - Agent:	(No)
		Specific surface area:	>= 21m2/g <= 1,200m2/g - (Measurement technique: Brunaurer, Emmett and Teller (BET) method using Nitrogen)

SECTION 4: First aid measures

4.1. Description of first aid measures

In case of skin contact:

Immediately take off all contaminated clothing.

Areas of the body that have - or are only even suspected of having - come into contact with the product must be rinsed immediately with plenty of running water and possibly with soap.

Wash thoroughly the body (shower or bath).

Remove contaminated clothing immediatley and dispose off safely.

After contact with skin, wash immediately with soap and plenty of water.

In case of eyes contact:

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an opthalmologist immediately.

Protect uninjured eye.

In case of Ingestion:

Do not induce vomiting, get medical attention showing the SDS and label hazardous.

In case of Inhalation:

Remove casualty to fresh air and keep warm and at rest.

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

Eye irritation

Eye damages

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

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Extinguishing media which must not be used for safety reasons:

None in particular.

5.2. Special hazards arising from the substance or mixture

Do not inhale explosion and combustion gases.

Burning produces heavy smoke.

5.3. Advice for firefighters

Use suitable breathing apparatus .

Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

Move undamaged containers from immediate hazard area if it can be done safely.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Wear personal protection equipment.

Remove all sources of ignition.

Remove persons to safety.

See protective measures under point 7 and 8.

6.2. Environmental precautions

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.

Retain contaminated washing water and dispose it.

In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

Suitable material for taking up: absorbing material, organic, sand

6.3. Methods and material for containment and cleaning up

Suitable material for taking up: absorbing material, organic, sand

Wash with plenty of water.

6.4. Reference to other sections

See also section 8 and 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid contact with skin and eyes, inhalation of vapours and mists.

Don't use empty container before they have been cleaned.

Before making transfer operations, assure that there aren't any incompatible material residuals in the containers.

Contamined clothing should be changed before entering eating areas.

Do not eat or drink while working.

See also section 8 for recommended protective equipment.

7.2. Conditions for safe storage, including any incompatibilities

Always keep in a well ventilated place.

Store at below 20 °C. Keep away from unguarded flame and heat sources. Avoid direct exposure to sunlight.

Keep away from unguarded flame, sparks, and heat sources. Avoid direct exposure to sunlight.

Incompatible materials:

None in particular.

Instructions as regards storage premises:

Cool and adequately ventilated.

7.3. Specific end use(s)

Recommendation(s)

None in particular

Industrial sector specific solutions:

None in particular

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Community Occupational Exposure Limits (OEL)

	OEL Type	Country	Occupational Exposure Limit
kaolin CAS: 1332-58-7	ACGIH		Long Term: 2 mg/m3 E,R, A4 - Pneumoconiosis
	EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 2 mg/m3 Where no specific short-term exposure limit is listed, a figure three times the long-term exposure limit should be used.
	EU		Long Term: 0,1 mg/m3 2004/37/EC
	EU		Carcinogens or mutagens
	EU		Respirable dust
n-butyl acetate CAS: 123-86-4	EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 724 mg/m3 - 150 ppm; Short Term: 966 mg/m3 - 200 ppm
	EU		Long Term: 241 mg/m3 - 50 ppm; Short Term: 723 mg/m3 - 150 ppm Behaviour Indicative 2019/1831/EU
	ACGIH		Long Term: 50 ppm; Short Term: 150 ppm Eye and URT irr
heptan-2-one CAS: 110-43-0	ACGIH		Long Term: 50 ppm Eye and skin irr

	EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 237 mg/m3 - 50 ppm; Short Term: 475 mg/m3 - 100 ppm Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to
	EU		Long Term: 238 mg/m3 - 50 ppm; Short Term: 475 mg/m3 - 100 ppm Behaviour Indicative 2000/39/EC
	EU		Identifies the possibility of significant uptake through the skin
barium sulfate CAS: 7727-43-7	EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 10 mg/m3 Where no specific short-term exposure limit is listed, a figure three times the long-term exposure limit should be used.
	EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 4 mg/m3 Where no specific short-term exposure limit is listed, a figure three times the long-term exposure limit should be used.
	ACGIH		Long Term: 5 mg/m3 I, E - Pneumoconiosis
Hydrocarbons, C9, aromatics	ACGIH		Long Term: 200 mg/m3 Damages to the central nervous system
xylene CAS: 1330-20-7	ACGIH		Long Term: 20 ppm A4, BEI - URT and eye irr; hematologic eff; CNS impair
	EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 220 mg/m3 - 50 ppm; Short Term: 441 mg/m3 - 100 ppm Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to
	EU		Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm Behaviour Indicative 2000/39/EC
	EU		Identifies the possibility of significant uptake through the skin
silicon dioxide CAS: 7631-86-9	EU		Long Term: 0,1 mg/m3 2004/37/EC
	EU		Carcinogens or mutagens
	EU		Respirable dust
	EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 6 mg/m3 The COSHH definition of a substance hazardous to health includes dust of any kind when present at a concentration in air equal to or
	EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 2,4 mg/m3 Where no specific short-term exposure limit is listed, a figure three times the long-term exposure limit should be used.
2-methoxy-1-methylethyl acetate CAS: 108-65-6	EU		Long Term: 275 mg/m3 - 50 ppm; Short Term: 550 mg/m3 - 100 ppm Behaviour Indicative 2000/39/EC
	EU		Identifies the possibility of significant uptake through the skin
	EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 274 mg/m3 - 50 ppm; Short Term: 548 mg/m3 - 100 ppm Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to

butan-1-ol CAS: 71-36-3	EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Short Term: 154 mg/m3 - 50 ppm Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to
	ACGIH		Long Term: 20 ppm Eye and URT irr
aluminium orthophosphate CAS: 7784-30-7	ACGIH		Long Term: 1 mg/m3 LEC-TD-66807
Carbon black CAS: 1333-86-4	EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 3,5 mg/m3; Short Term: 7 mg/m3
	ACGIH		Long Term: 3 mg/m3 I, A3 - Bronchitis
ethylbenzene CAS: 100-41-4	EU		Long Term: 442 mg/m3 - 100 ppm; Short Term: 884 mg/m3 - 200 ppm Behaviour Indicative 2000/39/EC
	EU		Identifies the possibility of significant uptake through the skin
	EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 441 mg/m3 - 100 ppm; Short Term: 552 mg/m3 - 125 ppm Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to
	ACGIH		Long Term: 20 ppm OTO; A3, BEI - URT & eye irr; ototoxicity; kidney eff; CNS impair
(2-methoxymethylethoxy) propanol CAS: 34590-94-8	EU		Long Term: 308 mg/m3 - 50 ppm Behaviour Indicative 2000/39/EC
	EU		Identifies the possibility of significant uptake through the skin
	EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 308 mg/m3 - 50 ppm Where no specific short-term exposure limit is listed, a figure three times the long-term exposure limit should be used.
	ACGIH		Long Term: 50 ppm Liver & CNS eff
methyl methacrylate CAS: 80-62-6	EU		Long Term: 50 ppm; Short Term: 100 ppm Behaviour Indicative 2009/161/ EU
	EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 208 mg/m3 - 50 ppm; Short Term: 416 mg/m3 - 100 ppm
	ACGIH		Long Term: 50 ppm; Short Term: 100 ppm DSEN, A4 - URT and eye irr, body weight eff, pulm edema
zinc oxide CAS: 1314-13-2	ACGIH		Long Term: 2 mg/m3; Short Term: 10 mg/m3 R - Metal fume fever
phosphoric acid CAS: 7664-38-2	EU		Long Term: 1 mg/m3; Short Term: 2 mg/m3 Behaviour Indicative 2000/39/EC
	EH40	UNITED KINGDOM OF GREAT BRITAIN AND	Long Term: 1 mg/m3; Short Term: 2 mg/m3

		NORTHERN IRELAND	
	ACGIH		Long Term: 1 mg/m3; Short Term: 3 mg/m3 URT, eye and skin irr
toluene CAS: 108-88-3	EU		Long Term: 192 mg/m3 - 50 ppm; Short Term: 384 mg/m3 - 100 ppm Behaviour Indicative 2006/15/EC
	EU		Identifies the possibility of significant uptake through the skin
	EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 191 mg/m3 - 50 ppm; Short Term: 384 mg/m3 - 100 ppm Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to
maleic anhydride CAS: 108-31-6	EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 1 mg/m3; Short Term: 3 mg/m3 Substances that can cause occupational asthma (also known as asthmagens and respiratory sensitisers) can induce a state of specific
	ACGIH		Long Term: 0,01 mg/m3 IFV, DSEN, RSEN, A4 - Resp sens

Biological limit values

xylene CAS: 1330-20-7	Biological Indicator: xylene; Sampling Period: End of turn Value: 1.5 mg/L; Medium: Blood Remark: Croatia. Biological Exposure Limits Biological Indicator: Methylhippuric acid; Sampling Period: End of turn Value: 1.5 g/l; Medium: Urine Remark: New Zealand. Biological Exposure Indices Biological Indicator: xylene; Sampling Period: End of turn Value: 1.5 mg/L; Medium: Blood Remark: Slovakia. Biological Limit Values Biological Indicator: sum of 2,3,4-methylhippuric acid; Sampling Period: End of turn Value: 2000 mg/L; Medium: Urine Remark: Slovakia. Biological Limit Values Biological Indicator: methylhypuric acid; Sampling Period: End of turn Value: 3 g/l; Medium: Urine Remark: Romania. Biological limit values Biological Indicator: methylhippuric acid (all isomers); Sampling Period: End of turn Value: 2 g/l; Medium: Urine Remark: Slovenia. BAT-values Biological Indicator: xylene; Sampling Period: Immediately after exposure or after working hours Value: 1.5 mg/L; Medium: Blood Remark: TRGS 903 - Biological limit values Biological Indicator: methylhippuric acid (all isomers); Sampling Period: Immediately after exposure or after working hours Value: 2 g/l; Medium: Urine Remark: TRGS 903 - Biological limit values Biological Indicator: Methylhippuric acid; Sampling Period: Last 4 hours of shift Value: 2 mg/L; Medium: Urine Remark: South Africa. Hazardous Chemical Substances Regulations, Biological Exposure Indices. Biological Indicator: total (o-, m-, p-)methylhippuric acid; Sampling Period: End of turn; End of working week Value: 800 mg/L; Medium: Urine Remark: Occupational exposure limits based on biological monitoring (JSOH). Biological Indicator: methyl hippuric acid; Sampling Period: At the end of a work week / at the end of a work day / at the end of a shift Value: 1.5 g/l; Medium: Urine Remark: Austria. Regulation on health surveillance in the workplace 2014 Biological Indicator: xylene; Sampling Period: End of workday Value: 1 mg/L; Medium: Blood Remark: Austria. Regulation on health surveillance in the workplace 2014

	Biological Indicator: Methylhippuric acid; Sampling Period: At the end of exposure, in 4 hours Value: 2 mg/L; Medium: Urine Remark: Kenya. Occupational Safety and Health Act (CAP.514), Schedule I, Table 3 Biological Exposure Limits Biological Indicator: methyl hippuric acid; Sampling Period: After shift Value: 5 Millimoles per liter; Medium: Urine Remark: Finland. Biological limit values Biological Indicator: methyl hippuric acid; Sampling Period: Immediately after exposure or after working hours Value: 2 g/l; Medium: Urine Remark: Svizzera. Lista di valori BAT
butan-1-ol CAS: 71-36-3	Biological Indicator: 1-butanol; Sampling Period: Before next shift Value: 2 mg/g Creatinine; Medium: Urine Remark: TRGS 903 - Biological limit values Biological Indicator: 1-butanol; Sampling Period: Immediately after exposure or after working hours Value: 10 mg/g Creatinine; Medium: Urine Remark: TRGS 903 - Biological limit values Biological Indicator: n-butyl alcohol; Sampling Period: Beginning of next shift Value: 2 mg/g Creatinine; Medium: Urine Remark: Slovakia. Biological Limit Values Biological Indicator: n-butyl alcohol; Sampling Period: Beginning of next shift Value: 313 micromoles per millimole creatinine; Medium: Urine Remark: Slovakia. Biological Limit Values Biological Indicator: n-butyl alcohol; Sampling Period: End of turn Value: 10 mg/g Creatinine; Medium: Urine Remark: Slovakia. Biological Limit Values Biological Indicator: n-butyl alcohol; Sampling Period: End of turn Value: 1534 micromoles per millimole creatinine; Medium: Urine Remark: Slovakia. Biological Limit Values Biological Indicator: 1-butanol Value: 2 mg/g Creatinine; Medium: Urine Remark: Slovenia. BAT-values Biological Indicator: 1-butanol; Sampling Period: End of turn Value: 10 mg/g Creatinine; Medium: Urine Remark: Slovenia. BAT-values Biological Indicator: n-butanol; Sampling Period: Immediately after exposure or after working hours Value: 10 mg/g Creatinine; Medium: Urine Remark: Svizzera. Lista di valori BAT Biological Indicator: n-butanol; Sampling Period: Before next shift or 16 hours after last shift Value: 2 mg/g Creatinine; Medium: Urine Remark: Svizzera. Lista di valori BAT
ethylbenzene CAS: 100-41-4	Biological Indicator: mandelic acid; Sampling Period: after the last shift of the last day of the work week Value: 15 g/g creatinine; Medium: Urine Remark: Argentina. Biological Exposure Indices Biological Indicator: Ethylbenzene; Sampling Period: after the last shift of the last day of the work week Value: 15 g/g creatinine; Medium: Air at the end of exhalation Remark: Argentina. Biological Exposure Indices Biological Indicator: mandelic acid; Sampling Period: End of turn; End of working week Value: 15 g/g creatinine; Medium: Urine Remark: Brazil. NR7. Parameters for Biological Control of Occupational Exposure to Some Chemical Agents Biological Indicator: total mandelic acid plus phenylglyoxylic acid; Sampling Period: End of turn Value: 2000 mg/g Creatinine; Medium: Urine Remark: Bulgaria. Biological limit values Biological Indicator: mandelic acid; Sampling Period: End of turn Value: 1500 mg/g Creatinine; Medium: Urine Remark: Chile. Biological Limit Values Biological Indicator: Sum of mandelic acid and phenyl glyoxylic acid; Sampling Period: End of turn Value: 15 g/g creatinine; Medium: Urine Remark: Maximum allowable occupational exposure limits in the workplace - Table 3. Adopted Biological Exposu

Biological Indicator: Ethylbenzene; Sampling Period: during exposure
Value: 141 micromol per litre; Medium: Blood
Remark: Croatia. Biological Exposure Limits

Biological Indicator: Ethylbenzene; Sampling Period: during exposure
Value: 1.5 mg/L; Medium: Blood
Remark: Croatia. Biological Exposure Limits

Biological Indicator: mandelic acid; Sampling Period: End of turn; End of working week
Value: 112 mol/mol creatinine; Medium: Urine
Remark: Croatia. Biological Exposure Limits

Biological Indicator: mandelic acid; Sampling Period: End of turn; End of working week
Value: 15 g/g creatinine; Medium: Urine
Remark: Croatia. Biological Exposure Limits

Biological Indicator: mandelic acid; Sampling Period: End of turn
Value: 1500 mg/g Creatinine; Medium: Urine
Remark: Czech Republic. Biological Exposure Indices

Biological Indicator: mandelic acid; Sampling Period: End of turn
Value: 1100 micromoles per millimole creatinine; Medium: Urine
Remark: Czech Republic. Biological Exposure Indices

Biological Indicator: mandelic acid; Sampling Period: After the work shift at the end of week or exposure period
Value: 5.2 Millimoles per liter; Medium: Urine
Remark: Finland. Biological limit values

Biological Indicator: mandelic acid + phenylglyoxylic acid; Sampling Period: Immediately after exposure or after working hours
Value: 250 mg/g Creatinine; Medium: Urine
Remark: TRGS 903 - Biological limit values

Biological Indicator: mandelic acid; Sampling Period: After shift
Value: 1500 mg/g Creatinine; Medium: Urine
Remark: Hungary. Permissible limit values of biological exposure (effect) indices

Biological Indicator: mandelic acid; Sampling Period: After shift
Value: 1110 micromoles per millimole creatinine; Medium: Urine
Remark: Hungary. Permissible limit values of biological exposure (effect) indices

Biological Indicator: Mandelic acid; Sampling Period: End of turn; End of working week
Value: 15 g/g creatinine; Medium: Urine
Remark: Kenya. Occupational Safety and Health Act (CAP.514), Schedule I, Table 3 Biological Exposure Limits

Biological Indicator: Ethylbenzene
Medium: Air at the end of exhalation
Remark: Kenya. Occupational Safety and Health Act (CAP.514), Schedule I, Table 3 Biological Exposure Limits

Biological Indicator: Sum of Mandelic acid plus phenylglyoxylic acid; Sampling Period: End of turn; End of working week
Value: 7 g/g creatinine; Medium: Urine
Remark: Official Mexican Norm NOM-047-SSA1-2011, Environmental Health - Biological exposure indices for work

Biological Indicator: Ethylbenzene; Sampling Period: Not critical
Medium: exhaled air
Remark: Official Mexican Norm NOM-047-SSA1-2011, Environmental Health - Biological exposure indices for work

Biological Indicator: Sum of mandelic acid and phenylglyoxylic acids; Sampling Period: End of turn
Value: 25 g/g creatinine; Medium: Urine
Remark: New Zealand. Biological Exposure Indices

Biological Indicator: Sum of mandelic acid and phenyl glyoxylic acid; Sampling Period: End of turn
Value: 7 g/g creatinine; Medium: Urine
Remark: Portuguese Norm 1796 - Biological Exposure Indices

Biological Indicator: mandelic acid; Sampling Period: End of working week
Value: 15 g/g creatinine; Medium: Urine
Remark: Romania. Biological limit values

Biological Indicator: 2- and 4-ethylphenol; Sampling Period: End of turn
Value: 12 mg/L; Medium: Blood
Remark: Slovakia. Biological Limit Values

Biological Indicator: Mandelic acid and phenylglyoxylic; Sampling Period: In case of long-term exposure:

after more than one shift
Value: 1600 mg/L; Medium: Urine
Remark: Slovakia. Biological Limit Values

Biological Indicator: 2- and 4-ethylphenol; Sampling Period: In case of long-term exposure: after more than one shift
Value: 986 micromol per litre; Medium: Blood
Remark: Slovakia. Biological Limit Values

Biological Indicator: Mandelic acid and phenylglyoxylic; Sampling Period: In case of long-term exposure: after more than one shift
Value: 10590 micromol per litre; Medium: Urine
Remark: Slovakia. Biological Limit Values

Biological Indicator: Mandelic acid and phenylglyoxylic; Sampling Period: End of turn
Value: 1067 mg/g Creatinine; Medium: Urine
Remark: Slovakia. Biological Limit Values

Biological Indicator: Mandelic acid and phenylglyoxylic; Sampling Period: End of turn
Value: 799 micromoles per millimole creatinine; Medium: Urine
Remark: Slovakia. Biological Limit Values

Biological Indicator: 2- and 4-ethylphenol; Sampling Period: In case of long-term exposure: after more than one shift
Value: 803 mg/g Creatinine; Medium: Urine
Remark: Slovakia. Biological Limit Values

Biological Indicator: 2- and 4-ethylphenol; Sampling Period: In case of long-term exposure: after more than one shift
Value: 744 micromoles per millimole creatinine; Medium: Urine
Remark: Slovakia. Biological Limit Values

Biological Indicator: Mandelic acid and phenylglyoxylic; Sampling Period: End of turn
Value: 250 mg/g Creatinine; Medium: Urine
Remark: Slovenia. BAT-values

Biological Indicator: Mandelic acid; Sampling Period: End of turn; End of working week
Value: 15 g/g creatinine; Medium: Urine
Remark: South Africa. Hazardous Chemical Substances Regulations, Biological Exposure Indices.

Biological Indicator: Ethylbenzene
Medium: Air at the end of exhalation
Remark: South Africa. Hazardous Chemical Substances Regulations, Biological Exposure Indices.

Biological Indicator: sum of mandelic acid and phenylglyoxilic acid; Sampling Period: FSL
Value: 700 mg/g Creatinine; Medium: Urine
Remark: Occupational Exposure Limits for Chemical Agents in Spain - Biological Exposure Values

Biological Indicator: Mandelic acid and phenylglyoxylic; Sampling Period: Immediately after exposure or after working hours
Value: 600 mg/g Creatinine; Medium: Urine
Remark: Svizzera. Lista di valori BAT

Biological Indicator: Sum of mandelic acid and phenyl glyoxylic acid; Sampling Period: End of turn
Value: 15 g/g creatinine; Medium: Urine
Remark: ACGIH - Indicatori di Esposizione Biologica (BEI)

Biological Indicator: Mandelic acid; Sampling Period: End of workday at end of workweek
Value: 7 g/g creatinine; Medium: Urine
Remark: VE.Biological Exposure Limits

Biological Indicator: Ethylbenzene; Sampling Period: At discretion
Medium: in exhaled air
Remark: VE.Biological Exposure Limits

toluene
CAS: 108-88-3

Biological Indicator: O-Cresol; Sampling Period: End of turn
Value: 0.5 mg/L; Medium: Urine
Remark: Argentina. Biological Exposure Indices

Biological Indicator: Hippuric acid; Sampling Period: End of turn
Value: 16 g/g creatinine; Medium: Urine
Remark: Argentina. Biological Exposure Indices

Biological Indicator: Toluene; Sampling Period: Prior to last shift of workweek
Value: 0.05 mg/L; Medium: Blood
Remark: Argentina. Biological Exposure Indices

Biological Indicator: O-Cresol; Sampling Period: At the end of a work week / at the end of a work day / at the end of a shift
Value: 0.8 mg/L; Medium: Urine

Remark: Austria. Regulation on health surveillance in the workplace 2014

Biological Indicator: Toluene; Sampling Period: End of workday
Value: 250 µg/L; Medium: Blood
Remark: Austria. Regulation on health surveillance in the workplace 2014

Biological Indicator: Hippuric acid; Sampling Period: End of last day of the working day (recommended to avoid the first day of the week)
Value: 25 g/g creatinine; Medium: Urine
Remark: Brazil. NR7. Parameters for Biological Control of Occupational Exposure to Some Chemical Agents

Biological Indicator: Hippuric acid; Sampling Period: End of turn
Value: 16 mmol/mmol creatinine; Medium: Urine
Remark: Bulgaria. Biological limit values

Biological Indicator: Toluene; Sampling Period: Before shift at end of workweek
Value: 0.05 mg/L; Medium: Blood
Remark: Chile. Biological Limit Values

Biological Indicator: Toluene; Sampling Period: End of workday
Value: 30 µg/L; Medium: Urine
Remark: Chile. Biological Limit Values

Biological Indicator: Hippuric acid; Sampling Period: End of workshift (after exposure has ended)
Value: 1 mol/mol creatinine; Medium: Urine
Remark: China. Biological Occupational Exposure Limits for 15 chemicals.

Biological Indicator: Hippuric acid; Sampling Period: End of workshift (after exposure has ended)
Value: 15 g/g creatinine; Medium: Urine
Remark: China. Biological Occupational Exposure Limits for 15 chemicals.

Biological Indicator: Hippuric acid; Sampling Period: End of workshift (after exposure has ended)
Value: 11 Millimoles per liter; Medium: Urine
Remark: China. Biological Occupational Exposure Limits for 15 chemicals.

Biological Indicator: Hippuric acid; Sampling Period: End of workshift (after exposure has ended)
Value: 2 g/l; Medium: Urine
Remark: China. Biological Occupational Exposure Limits for 15 chemicals.

Biological Indicator: Toluene; Sampling Period: End of workshift (15-30 min after exposure has ended)
Value: 20 mg/m³; Medium: Air at the end of exhalation
Remark: China. Biological Occupational Exposure Limits for 15 chemicals.

Biological Indicator: Toluene
Value: 5 mg/m³; Medium: Air at the end of exhalation
Remark: China. Biological Occupational Exposure Limits for 15 chemicals.

Biological Indicator: O-Cresol; Sampling Period: End of turn
Value: 3 mg/g Creatinine; Medium: Urine
Remark: Maximum allowable occupational exposure limits in the workplace - Table 3. Adopted Biological Exposu

Biological Indicator: Toluene; Sampling Period: End of turn
Value: 0.03 mg/L; Medium: Urine
Remark: Maximum allowable occupational exposure limits in the workplace - Table 3. Adopted Biological Exposu

Biological Indicator: Toluene; Sampling Period: Prior to last shift of workweek
Value: 0.02 mg/L; Medium: Blood
Remark: Maximum allowable occupational exposure limits in the workplace - Table 3. Adopted Biological Exposu

Biological Indicator: Toluene; Sampling Period: End of turn
Value: 1085 micromol per litre; Medium: Blood
Remark: Croatia. Biological Exposure Limits

Biological Indicator: Toluene; Sampling Period: End of turn
Value: 1 mg/L; Medium: Blood
Remark: Croatia. Biological Exposure Limits

Biological Indicator: Toluene; Sampling Period: during exposure
Value: 83 micromol per litre; Medium: Air at the end of exhalation
Remark: Croatia. Biological Exposure Limits

Biological Indicator: Toluene; Sampling Period: during exposure
Value: 20 ppm; Medium: Air at the end of exhalation
Remark: Croatia. Biological Exposure Limits

Biological Indicator: Hippuric acid; Sampling Period: End of turn
Value: 158 mol/mol creatinine; Medium: Urine

Remark: Croatia. Biological Exposure Limits

Biological Indicator: Hippuric acid; Sampling Period: End of turn
Value: 25 g/g creatinine; Medium: Urine
Remark: Croatia. Biological Exposure Limits

Biological Indicator: O-Cresol; Sampling Period: End of turn
Value: 105 Millimoles per mole Creatinine; Medium: Urine
Remark: Croatia. Biological Exposure Limits

Biological Indicator: O-Cresol; Sampling Period: End of turn
Value: 1 mg/g Creatinine; Medium: Urine
Remark: Croatia. Biological Exposure Limits

Biological Indicator: Hippuric acid; Sampling Period: End of turn
Value: 1600 mg/g Creatinine; Medium: Urine
Remark: Czech Republic. Biological Exposure Indices

Biological Indicator: Hippuric acid; Sampling Period: End of turn
Value: 1000 micromoles per millimole creatinine; Medium: Urine
Remark: Czech Republic. Biological Exposure Indices

Biological Indicator: O-Cresol; Sampling Period: End of turn
Value: 15 mg/g Creatinine; Medium: Urine
Remark: Czech Republic. Biological Exposure Indices

Biological Indicator: O-Cresol; Sampling Period: End of turn
Value: 16 micromoles per millimole creatinine; Medium: Urine
Remark: Czech Republic. Biological Exposure Indices

Biological Indicator: Toluene; Sampling Period: Morning after working day
Value: 500 mg/L; Medium: Blood
Remark: Finland. Biological limit values

Biological Indicator: Toluene; Sampling Period: End of turn
Value: 600 µg/L; Medium: Blood
Remark: TRGS 903 - Biological limit values

Biological Indicator: O-Cresol; Sampling Period: In case of long-term exposure: after more than one shift
Value: 1.5 mg/L; Medium: Urine
Remark: TRGS 903 - Biological limit values

Biological Indicator: O-Cresol; Sampling Period: After shift
Value: 1 mg/g Creatinine; Medium: Urine
Remark: Hungary. Permissible limit values of biological exposure (effect) indices

Biological Indicator: O-Cresol; Sampling Period: After shift
Value: 105 micromoles per millimole creatinine; Medium: Urine
Remark: Hungary. Permissible limit values of biological exposure (effect) indices

Biological Indicator: Hippuric acid
Value: 16 g/g creatinine; Medium: Urine
Remark: Israel. Safety at Work Regulations - Annex III Biological Exposure Indices

Biological Indicator: Toluene; Sampling Period: Within 2 h prior to end of shift at end of work week
Value: 0.6 mg/L; Medium: Blood
Remark: Occupational exposure limits based on biological monitoring (JSOH).

Biological Indicator: Toluene; Sampling Period: Within 2 h prior to end of shift at end of work week
Value: 0.06 mg/L; Medium: Urine
Remark: Occupational exposure limits based on biological monitoring (JSOH).

Biological Indicator: Hippuric acid; Sampling Period: End of turn
Value: 25 g/g creatinine; Medium: Urine
Remark: Kenya. Occupational Safety and Health Act (CAP.514), Schedule I, Table 3 Biological Exposure Limits

Biological Indicator: Toluene; Sampling Period: End of turn
Value: 1 mg/L; Medium: venous blood
Remark: Kenya. Occupational Safety and Health Act (CAP.514), Schedule I, Table 3 Biological Exposure Limits

Biological Indicator: O-Cresol; Sampling Period: End of turn
Value: 1 mg/g Creatinine; Medium: Urine
Remark: Kenya. Occupational Safety and Health Act (CAP.514), Schedule I, Table 3 Biological Exposure Limits

Biological Indicator: Hippuric acid; Sampling Period: End of turn
Value: 16 g/g creatinine; Medium: Urine
Remark: Latvia. Biological Exposure Indices

Biological Indicator: Toluene; Sampling Period: End of turn
Value: 0.05 mg/L; Medium: Blood
Remark: Latvia. Biological Exposure Indices

Biological Indicator: O-Cresol; Sampling Period: End of turn
Value: 0.5 mg/L; Medium: Urine
Remark: Official Mexican Norm NOM-047-SSA1-2011, Environmental Health - Biological exposure indices for work

Biological Indicator: Hippuric acid; Sampling Period: End of turn
Value: 16 g/g creatinine; Medium: Urine
Remark: Official Mexican Norm NOM-047-SSA1-2011, Environmental Health - Biological exposure indices for work

Biological Indicator: Toluene; Sampling Period: Before last turn of the working week
Value: 0.05 mg/L; Medium: Blood
Remark: Official Mexican Norm NOM-047-SSA1-2011, Environmental Health - Biological exposure indices for work

Biological Indicator: Toluene; Sampling Period: End of turn
Value: 0.03 mg/L; Medium: Urine
Remark: New Zealand. Biological Exposure Indices

Biological Indicator: O-Cresol; Sampling Period: End of turn
Value: 3 mg/g Creatinine; Medium: Urine
Remark: New Zealand. Biological Exposure Indices

Biological Indicator: Toluene; Sampling Period: Before shift at end of workweek
Value: 0.02 mg/L; Medium: Blood
Remark: Portuguese Norm 1796 - Biological Exposure Indices

Biological Indicator: Toluene; Sampling Period: End of turn
Value: 0.03 mg/L; Medium: Urine
Remark: Portuguese Norm 1796 - Biological Exposure Indices

Biological Indicator: O-Cresol; Sampling Period: End of turn
Value: 3 mg/g Creatinine; Medium: Urine
Remark: Portuguese Norm 1796 - Biological Exposure Indices

Biological Indicator: Hippuric acid; Sampling Period: End of turn
Value: 2 g/l; Medium: Urine
Remark: Romania. Biological limit values

Biological Indicator: O-Cresol; Sampling Period: End of turn
Value: 3 mg/L; Medium: Urine
Remark: Romania. Biological limit values

Biological Indicator: Toluene; Sampling Period: Prior to last shift of workweek
Value: 0.05 mg/L; Medium: Blood
Remark: Singapore. Biological Threshold Limit Values

Biological Indicator: Toluene; Sampling Period: End of turn
Value: 600 µg/L; Medium: Blood
Remark: Slovakia. Biological Limit Values

Biological Indicator: Toluene; Sampling Period: End of turn
Value: 6517 micromol per litre; Medium: Blood
Remark: Slovakia. Biological Limit Values

Biological Indicator: Hippuric acid; Sampling Period: End of turn
Value: 2401 mg/L; Medium: Urine
Remark: Slovakia. Biological Limit Values

Biological Indicator: Hippuric acid; Sampling Period: End of turn
Value: 13399 micromol per litre; Medium: Urine
Remark: Slovakia. Biological Limit Values

Biological Indicator: Hippuric acid; Sampling Period: End of turn
Value: 1600 mg/g Creatinine; Medium: Urine
Remark: Slovakia. Biological Limit Values

Biological Indicator: Hippuric acid; Sampling Period: End of turn
Value: 1010 micromoles per millimole creatinine; Medium: Urine
Remark: Slovakia. Biological Limit Values

Biological Indicator: O-Cresol; Sampling Period: End of turn
Value: 143 micromol per litre; Medium: Urine
Remark: Slovakia. Biological Limit Values

Biological Indicator: O-Cresol; Sampling Period: In case of long-term exposure: after more than one shift

Value: 103 mg/g Creatinine; Medium: Urine
Remark: Slovakia. Biological Limit Values

Biological Indicator: O-Cresol; Sampling Period: End of turn
Value: 108 micromoles per millimole creatinine; Medium: Urine
Remark: Slovakia. Biological Limit Values

Biological Indicator: O-Cresol; Sampling Period: In case of long-term exposure: after more than one shift
Value: 1.5 mg/L; Medium: Urine
Remark: Slovakia. Biological Limit Values

Biological Indicator: Toluene; Sampling Period: End of turn
Value: 600 micromol per litre; Medium: Blood
Remark: Slovenia. BAT-values

Biological Indicator: O-Cresol; Sampling Period: during long-term exposure: at the end of the work shift after several consecutive workdays
Value: 1.5 mg/L; Medium: Urine
Remark: Slovenia. BAT-values

Biological Indicator: Hippuric acid; Sampling Period: End of turn
Value: 25 g/g creatinine; Medium: Urine
Remark: South Africa. Hazardous Chemical Substances Regulations, Biological Exposure Indices.

Biological Indicator: Toluene; Sampling Period: End of turn
Value: 1 mg/L; Medium: venous blood
Remark: South Africa. Hazardous Chemical Substances Regulations, Biological Exposure Indices.

Biological Indicator: O-Cresol; Sampling Period: End of turn
Value: 1 mg/g Creatinine; Medium: Urine
Remark: South Africa. Hazardous Chemical Substances Regulations, Biological Exposure Indices.

Biological Indicator: Toluene; Sampling Period: End of workday
Value: 0.08 mg/L; Medium: Urine
Remark: Occupational Exposure Limits for Chemical Agents in Spain - Biological Exposure Values

Biological Indicator: O-Cresol; Sampling Period: End of workday
Value: 6 mg/g Creatinine; Medium: Urine
Remark: Occupational Exposure Limits for Chemical Agents in Spain - Biological Exposure Values

Biological Indicator: Toluene; Sampling Period: prior to last shift of workweek
Value: 0.05 mg/L; Medium: Blood
Remark: Occupational Exposure Limits for Chemical Agents in Spain - Biological Exposure Values

Biological Indicator: Hippuric acid; Sampling Period: In case of long-term exposure: after more than one shift
Value: 2 g/g creatinine; Medium: Urine
Remark: Svizzera. Lista di valori BAT

Biological Indicator: O-Cresol; Sampling Period: In case of long-term exposure: after more than one shift
Value: 0.5 mg/L; Medium: Urine
Remark: Svizzera. Lista di valori BAT

Biological Indicator: toluol; Sampling Period: Immediately after exposure or after working hours
Value: 648 micromol per litre; Medium: Blood
Remark: Svizzera. Lista di valori BAT

Biological Indicator: Hippuric acid; Sampling Period: In case of long-term exposure: after more than one shift
Value: 126 mmol/mmol creatinine; Medium: Urine
Remark: Svizzera. Lista di valori BAT

Biological Indicator: O-Cresol; Sampling Period: In case of long-term exposure: after more than one shift
Value: 462 micromol per litre; Medium: Urine
Remark: Svizzera. Lista di valori BAT

Biological Indicator: toluol; Sampling Period: Immediately after exposure or after working hours
Value: 600 µg/L; Medium: Blood
Remark: Svizzera. Lista di valori BAT

Biological Indicator: Hippuric acid; Sampling Period: End of workday
Value: 16 g/g creatinine; Medium: Urine
Remark: Uruguay. Health surveillance of workers - Biological Exposure Indices (BEI).

Biological Indicator: O-Cresol; Sampling Period: End of workday
Value: 0.5 mg/L; Medium: Urine
Remark: Uruguay. Health surveillance of workers - Biological Exposure Indices (BEI).

Biological Indicator: Toluene; Sampling Period: Prior to last shift of workweek
Value: 0.02 mg/L; Medium: Blood

Remark: ACGIH - Indicatori di Esposizione Biologica (BEI)

Biological Indicator: Toluene; Sampling Period: End of turn
Value: 0.03 mg/L; Medium: Urine
Remark: ACGIH - Indicatori di Esposizione Biologica (BEI)

Biological Indicator: O-Cresol; Sampling Period: End of turn
Value: 3 mg/g Creatinine; Medium: Urine
Remark: ACGIH - Indicatori di Esposizione Biologica (BEI)

Biological Indicator: O-Cresol; Sampling Period: End of workday
Value: 0.5 mg/L; Medium: Urine
Remark: VE.Biological Exposure Limits

Biological Indicator: Hippuric acid; Sampling Period: End of workday
Value: 16 g/g creatinine; Medium: Urine
Remark: VE.Biological Exposure Limits

Biological Indicator: Toluene; Sampling Period: Prior to last workday of workweek
Value: 0.05 mg/L; Medium: Blood
Remark: VE.Biological Exposure Limits

Predicted No Effect Concentration (PNEC) values

n-butyl acetate CAS: 123-86-4	Exposure Route: Fresh Water; PNEC Limit: 0,18 mg/l
	Exposure Route: Intermittent releases (fresh water); PNEC Limit: 0,36 mg/l
	Exposure Route: Marine water; PNEC Limit: 0,01 mg/l
	Exposure Route: Freshwater sediments; PNEC Limit: 0,98 mg/kg
	Exposure Route: Marine water sediments; PNEC Limit: 0,09 mg/kg
	Exposure Route: Soil; PNEC Limit: 0,09 mg/kg
	Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 35,6 mg/l
heptan-2-one CAS: 110-43-0	Exposure Route: Fresh Water; PNEC Limit: 0,098 mg/l
	Exposure Route: Marine water; PNEC Limit: 0,009 mg/l
	Exposure Route: Intermittent releases (fresh water); PNEC Limit: 982 mg/l
	Exposure Route: Freshwater sediments; PNEC Limit: 1,89 mg/kg
	Exposure Route: Marine water sediments; PNEC Limit: 0,189 mg/kg
	Exposure Route: Soil; PNEC Limit: 0,321 mg/kg
	Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 12,5 mg/l
trizinc bis(orthophosphate) CAS: 7779-90-0	Exposure Route: Fresh Water; PNEC Limit: 0,206 mg/l
	Exposure Route: Marine water; PNEC Limit: 0,0061 mg/l
	Exposure Route: Freshwater sediments; PNEC Limit: 117,8 mg/kg
	Exposure Route: Marine water sediments; PNEC Limit: 56,5 mg/kg
	Exposure Route: Soil; PNEC Limit: 35,6 mg/kg
barium sulfate CAS: 7727-43-7	Exposure Route: Fresh Water; PNEC Limit: 0,115 mg/l
	Exposure Route: Freshwater sediments; PNEC Limit: 600,4 mg/kg
	Exposure Route: Soil; PNEC Limit: 207,7 mg/kg
	Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 62,6 mg/l
xylene CAS: 1330-20-7	Exposure Route: Fresh Water; PNEC Limit: 0,32 mg/l
	Exposure Route: Intermittent releases (fresh water); PNEC Limit: 0,32 mg/l
	Exposure Route: Marine water; PNEC Limit: 0,32 mg/l
	Exposure Route: Freshwater sediments; PNEC Limit: 12,46 mg/kg
	Exposure Route: Marine water sediments; PNEC Limit: 12,46 mg/kg
	Exposure Route: Soil; PNEC Limit: 2,31 mg/kg
	Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 6,58 mg/l
2-methoxy-1-methylethyl acetate	Exposure Route: Fresh Water; PNEC Limit: 0,635 mg/kg

CAS: 108-65-6	
	Exposure Route: Intermittent releases (fresh water); PNEC Limit: 6,35 mg/l
	Exposure Route: Marine water; PNEC Limit: 0,064 mg/kg
	Exposure Route: Freshwater sediments; PNEC Limit: 3,29 mg/kg
	Exposure Route: Marine water sediments; PNEC Limit: 0,329 mg/kg
	Exposure Route: Soil; PNEC Limit: 0,29 mg/kg
	Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 100 mg/l
butan-1-ol CAS: 71-36-3	Exposure Route: Fresh Water; PNEC Limit: 0,08 mg/l
	Exposure Route: Intermittent releases (fresh water); PNEC Limit: 2,25 mg/l
	Exposure Route: Marine water; PNEC Limit: 0,008 mg/l
	Exposure Route: Freshwater sediments; PNEC Limit: 0,0324 mg/kg
	Exposure Route: Marine water sediments; PNEC Limit: 0,032 mg/kg
	Exposure Route: Soil; PNEC Limit: 0,01 mg/kg
	Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 2476 mg/l
(2-methoxymethylethoxy) propanol CAS: 34590-94-8	Exposure Route: Fresh Water; PNEC Limit: 19 mg/l
	Exposure Route: Intermittent releases (fresh water); PNEC Limit: 190 mg/l
	Exposure Route: Marine water; PNEC Limit: 1,9 mg/l
	Exposure Route: Freshwater sediments; PNEC Limit: 70,2 mg/kg
	Exposure Route: Marine water sediments; PNEC Limit: 7,02 mg/kg
	Exposure Route: Soil; PNEC Limit: 2,74 mg/kg
	Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 4168 mg/l
methyl methacrylate CAS: 80-62-6	Exposure Route: Fresh Water; PNEC Limit: 0,94 mg/l
	Exposure Route: Marine water; PNEC Limit: 0,94 mg/l
	Exposure Route: Soil; PNEC Limit: 1,47 mg/kg
	Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 10 mg/l
	Exposure Route: Freshwater sediments; PNEC Limit: 5,74 mg/kg
	Exposure Route: Intermittent releases (fresh water); PNEC Limit: 0,94 mg/l
tert-butyl acrylate CAS: 1663-39-4	Exposure Route: Fresh Water; PNEC Limit: 0,002 mg/l
	Exposure Route: Marine water; PNEC Limit: 0,0002 mg/l
	Exposure Route: Intermittent releases (fresh water); PNEC Limit: 0,0088 mg/l
	Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 3,05 mg/l
	Exposure Route: Freshwater sediments; PNEC Limit: 0,015 mg/kg
	Exposure Route: Marine water sediments; PNEC Limit: 0,001 mg/kg
	Exposure Route: Soil; PNEC Limit: 1 mg/kg
zinc oxide CAS: 1314-13-2	Exposure Route: Fresh Water; PNEC Limit: 0,0206 mg/l
	Exposure Route: Marine water; PNEC Limit: 0,0061 mg/l
	Exposure Route: Freshwater sediments; PNEC Limit: 235,6 mg/kg
	Exposure Route: Marine water sediments; PNEC Limit: 113 mg/kg
	Exposure Route: Soil; PNEC Limit: 106,8 mg/kg
toluene CAS: 108-88-3	Exposure Route: Fresh Water; PNEC Limit: 0,68 mg/l
	Exposure Route: Marine water; PNEC Limit: 0,68 mg/l
	Exposure Route: Freshwater sediments; PNEC Limit: 16,39 mg/kg
	Exposure Route: Marine water sediments; PNEC Limit: 16,39 mg/kg
	Exposure Route: Soil; PNEC Limit: 2,89 mg/kg
	Exposure Route: Intermittent releases (fresh water); PNEC Limit: 0,68 mg/l
	Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 13,61 mg/l

Derived No Effect Level (DNEL) values

n-butyl acetate CAS: 123-86-4	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects Worker Industry: 300 mg/m3
	Exposure Route: Human Inhalation; Exposure Frequency: Short Term, systemic effects Worker Industry: 600 mg/m3
	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects Worker Industry: 300 mg/m3
	Exposure Route: Human Inhalation; Exposure Frequency: Short Term, local effects Worker Industry: 600 mg/m3
	Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects Worker Industry: 11 mg/kg dry weight (d.w.)
	Exposure Route: Human Dermal; Exposure Frequency: Short Term, systemic effects Worker Industry: 11 mg/kg dry weight (d.w.)
	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects Consumer: 35,7 mg/m3
	Exposure Route: Human Inhalation; Exposure Frequency: Short Term, systemic effects Consumer: 300 mg/m3
	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects Consumer: 35,7 mg/m3
	Exposure Route: Human Inhalation; Exposure Frequency: Short Term, local effects Consumer: 300 mg/m3
	Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects Consumer: 6 mg/kg dry weight (d.w.)
	Exposure Route: Human Dermal; Exposure Frequency: Short Term, systemic effects Consumer: 6 mg/kg dry weight (d.w.)
	Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects Consumer: 2 mg/kg dry weight (d.w.)
	Exposure Route: Human Oral; Exposure Frequency: Short Term, systemic effects Consumer: 2 mg/kg dry weight (d.w.)
heptan-2-one CAS: 110-43-0	Exposure Route: Human Inhalation; Exposure Frequency: Short Term, systemic effects Worker Professional: 1516 mg/m3
	Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects Worker Professional: 54,27 mg/kg dry weight (d.w.)
	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects Worker Professional: 394,25 mg/m3
	Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects Consumer: 23,32 mg/kg dry weight (d.w.)
	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects Consumer: 84,31 mg/m3
	Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects Consumer: 23,32 mg/kg dry weight (d.w.)
trizinc bis(orthophosphate) CAS: 7779-90-0	Exposure Route: Human Inhalation; Exposure Frequency: Local Effects Worker Professional: 5 mg/m3
	Exposure Route: Human Dermal; Exposure Frequency: Local Effects Worker Professional: 83 ppm
	Exposure Route: Human Dermal; Exposure Frequency: Local Effects Consumer: 83 ppm
	Exposure Route: Human Inhalation; Exposure Frequency: Local Effects Consumer: 2,5 mg/m3
	Exposure Route: Human Oral; Exposure Frequency: Chronic Effects Consumer: 0,83 ppm
barium sulfate CAS: 7727-43-7	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects Worker Professional: 10 mg/m3

	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects Worker Professional: 10 mg/m3
	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects Consumer: 10 mg/m3
	Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects Consumer: 13000 mg/kg
Hydrocarbons, C9, aromatics	Exposure Route: Oral; Exposure Frequency: Long Term, systemic effects Consumer: 11 mg/kg
	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects Consumer: 32 mg/m3
	Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects Consumer: 11 mg/kg
	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects Worker Professional: 150 mg/m3
	Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects Worker Professional: 25 mg/kg
xylene CAS: 1330-20-7	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects Consumer: 65,3 mg/m3
	Exposure Route: Oral; Exposure Frequency: Long Term, systemic effects Consumer: 12,5 mg/kg
	Exposure Route: Human Inhalation; Exposure Frequency: Short Term, local effects Worker Professional: 442 mg/kg
	Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects Worker Professional: 212 mg/kg
	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects Worker Professional: 221 mg/m3
2-methoxy-1-methylethyl acetate CAS: 108-65-6	Exposure Route: Human Inhalation; Exposure Frequency: Short Term (acute) Consumer: 33 mg/m3
	Exposure Route: Oral; Exposure Frequency: Long Term, systemic effects Consumer: 36 mg/kg
	Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects Consumer: 320 mg/kg
	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects Consumer: 33 mg/m3
	Exposure Route: Human Inhalation; Exposure Frequency: Short Term (acute) Worker Professional: 550 mg/m3
	Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects Worker Professional: 796 mg/kg
	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects Worker Professional: 275 mg/m3
butan-1-ol CAS: 71-36-3	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects Consumer: 55 mg/m3
	Exposure Route: Oral; Exposure Frequency: Long Term, systemic effects Consumer: 3125 mg/kg
	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects Worker Professional: 310 mg/m3
(2-methoxymethylethoxy) propanol CAS: 34590-94-8	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects Consumer: 37,2 mg/m3
	Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects
	Exposure Route: Oral; Exposure Frequency: Long Term, systemic effects
	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects Worker Professional: 308 mg/m3

	Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects
methyl methacrylate CAS: 80-62-6	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects Worker Professional: 208 mg/m3
	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects Worker Professional: 208 mg/m3
	Exposure Route: Human Dermal; Exposure Frequency: Long Term, local effects Worker Professional: 1,5 mg/cm2
	Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects Worker Professional: 13,67 mg/kg
	Exposure Route: Human Dermal; Exposure Frequency: Short Term (acute) Worker Professional: 1,5 mg/cm2
	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects Consumer: 104 mg/m3
	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects Consumer: 74,3 mg/m3
	Exposure Route: Human Dermal; Exposure Frequency: Long Term, local effects Consumer: 1,5 mg/cm2
	Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects Consumer: 8,2 mg/kg
	Exposure Route: Human Dermal; Exposure Frequency: Short Term (acute) Consumer: 1,5 mg/cm2
tert-butyl acrylate CAS: 1663-39-4	Exposure Route: Human Dermal; Exposure Frequency: Long Term, local effects Worker Professional: 0,28 mg/cm2
	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects Worker Professional: 11 mg/m3
	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects Consumer: 1,27 mg/m3
zinc oxide CAS: 1314-13-2	Exposure Route: Human Inhalation; Exposure Frequency: Local Effects Worker Professional: 5 mg/m3
	Exposure Route: Human Dermal; Exposure Frequency: Local Effects Worker Professional: 83 ppm
	Exposure Route: Human Dermal; Exposure Frequency: Local Effects Consumer: 83 ppm
	Exposure Route: Human Inhalation; Exposure Frequency: Local Effects Consumer: 2,5 mg/m3
	Exposure Route: Human Oral; Exposure Frequency: Chronic Effects Consumer: 0,83 ppm
phosphoric acid CAS: 7664-38-2	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects Worker Professional: 10,7 mg/m3
	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects Consumer: 4,57 mg/m3
	Exposure Route: Oral; Exposure Frequency: Long Term, systemic effects Consumer: 0,1 mg/kg
	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects Worker Professional: 1 mg/m3
	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects Consumer: 0,36 mg/m3
	Exposure Route: Human Inhalation; Exposure Frequency: Short Term, local effects Worker Professional: 2 mg/m3
toluene CAS: 108-88-3	Exposure Route: Human Inhalation; Exposure Frequency: Short Term (acute) Consumer: 226 mg/m3
	Exposure Route: Human Inhalation; Exposure Frequency: Short Term, systemic effects Consumer: 226 mg/m3
	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects

Consumer: 56,5 mg/m3

Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects
Consumer: 8,13 mg/kg

Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects
Consumer: 226 mg/kg

Exposure Route: Human Inhalation; Exposure Frequency: Short Term (acute)
Worker Professional: 384 mg/m3

Exposure Route: Human Inhalation; Exposure Frequency: Short Term, systemic effects
Worker Professional: 384 mg/m3

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects
Worker Professional: 192 mg/m3

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects
Worker Professional: 192 mg/m3

Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects
Worker Professional: 384 mg/kg

8.2. Exposure controls

Eye protection:

Use close fitting safety goggles, don't use eye lens.

Protection for skin:

No special precaution must be adopted for normal use.

Protection for hands:

Use protective gloves that provides comprehensive protection, e.g. P.V.C., neoprene or rubber.

Respiratory protection:

Use adequate protective respiratory equipment.

Thermal Hazards:

N.A.

Environmental exposure controls:

N.A.

Hygienic and Technical measures

N.A.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical State: Liquid
Colour: Black
Odour: N.A.
pH: Not Relevant
Kinematic viscosity: > 20,5 mm2/sec (40 °C)
Melting point / freezing point: N.A.
Initial boiling point and boiling range: N.A.
Flash point: 28 °C (82 °F)
Upper/lower flammability or explosive limits: N.A.
Vapour density: N.A.
Vapour pressure: N.A.
Relative density: 1.33 g/cm3
Solubility in water: N.A.
Solubility in oil: N.A.
Partition coefficient (n-octanol/water): N.A.
Auto-ignition temperature: N.A.
Decomposition temperature: N.A.
Flammability: The product is classified Flam. Liq. 3 H226
Kinematic viscosity m2/s (40°C) > 20,5 mm2/sec (40 °C)
Viscosity: = 65.00 s - Method: ISO/DIN 2431 84 - Section: 6.00 mm

Particle characteristics:

Particle size: N.A.
Nanoforms: See Nanoform information in Section 3.

9.2. Other information

Evaporation rate: N.A.
Miscibility: N.A.

Conductivity: N.A.

No other relevant information

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions

10.2. Chemical stability

Data not available.

10.3. Possibility of hazardous reactions

None.

10.4. Conditions to avoid

Stable under normal conditions.

10.5. Incompatible materials

Avoid contact with combustible materials. The product could catch fire.

10.6. Hazardous decomposition products

None.

SECTION 11: Toxicological information

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

Toxicological Information of the Preparation

a) acute toxicity	Not classified
	Based on available data, the classification criteria are not met
	ATEmix - Oral : 16539.8 mg/kg bw
	ATEmix - Dermal : 27842.7 mg/kg bw
	ATEmix - Inhalation (Vapours) : 127.697 mg/l
b) skin corrosion/irritation	Not classified
	Based on available data, the classification criteria are not met
c) serious eye damage/irritation	The product is classified: Eye Irrit. 2(H319)
d) respiratory or skin sensitisation	Not classified
	Based on available data, the classification criteria are not met
e) germ cell mutagenicity	Not classified
	Based on available data, the classification criteria are not met
f) carcinogenicity	Not classified
	Based on available data, the classification criteria are not met
g) reproductive toxicity	Not classified
	Based on available data, the classification criteria are not met
h) STOT-single exposure	The product is classified: STOT SE 3(H336)
i) STOT-repeated exposure	Not classified
	Based on available data, the classification criteria are not met
j) aspiration hazard	Not classified
	Based on available data, the classification criteria are not met

Toxicological information on main components of the mixture:

kaolin	a) acute toxicity	LD50 Oral Rat > 5000, mg/kg	
n-butyl acetate	a) acute toxicity	LD50 Oral Rat = 10760 mg/kg	OECD Test Guideline 423
		LC50 Inhalation > 20, mg/l 4h	
		LD50 Skin Rabbit > 14112, mg/kg	OECD Test Guideline 402
heptan-2-one	a) acute toxicity	LD50 Oral Rat = 1600, mg/kg	
		LC50 Inhalation Vapour Rat > 16,7 mg/l 4h	
Hydrocarbons, C9, aromatics	a) acute toxicity	LD50 Oral Rat = 3592 mg/kg	OECD Test Guideline 401
		LD50 Skin Rabbit > 3160 mg/kg	OECD Test Guideline 402
	f) carcinogenicity	Carcinogenicity - Not classified - Substance classified in accordance with Note P, Annex VI of EC	

Regulation (EC) 1272/2008.

xylene	a) acute toxicity	LD50 Oral Mouse = 5627 mg/kg LC50 Inhalation Rat = 6700 Ppm 4h LD50 Skin Rabbit > 5000 mg/kg
silicon dioxide	a) acute toxicity	LD50 Oral Rat > 5000 mg/kg LC0 Inhalation Rat = 0,139 mg/l 4h - The product does not contain any substance classified for this hazard LD50 Skin Rabbit > 5000 mg/kg
2-methoxy-1-methylethyl acetate	a) acute toxicity	LD50 Oral Rat > 5000 mg/kg LC0 Inhalation Rat > 2000 Ppm 3h LD50 Skin Rabbit > 5000 mg/kg
butan-1-ol	a) acute toxicity	LD50 Oral Rat = 790 mg/kg LC50 Inhalation Rat > 18 mg/l 4h LD50 Skin Rabbit = 3400 mg/kg
Carbon black	a) acute toxicity	LD50 Oral Rat > 8000, mg/kg
ethylbenzene	a) acute toxicity	LD50 Oral Rat = 3500, mg/kg LD50 Skin Rabbit > 5000, mg/kg
(2-methoxymethylethoxy) propanol	a) acute toxicity	LD50 Oral Rat = 5350 mg/kg LD50 Skin Rabbit > 2000 mg/kg
zinc oxide	a) acute toxicity	LD50 Oral Rat > 5000, mg/kg LC50 Inhalation Dust Rat > 5,7 mg/l 4h LD50 Skin Rat > 2000, mg/kg
phosphoric acid	a) acute toxicity	LD50 Oral Rat = 2600 mg/kg LD50 Skin Rabbit = 2740 mg/kg
toluene	a) acute toxicity	LD50 Oral Rat = 5000 mg/kg LC50 Inhalation Rat = 25,7 mg/l 4h LD50 Skin Rabbit = 12267 mg/kg

11.2. Information on other hazards

Endocrine disrupting properties:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 12: Ecological information

12.1. Toxicity

Adopt good working practices, so that the product is not released into the environment.

Eco-Toxicological Information:

Toxic to aquatic life with long lasting effects.

List of Eco-Toxicological properties of the product

The product is classified: Aquatic Chronic 2(H411)

List of Eco-Toxicological properties of the components

Component	Ident. Numb.	Ecotox Data
n-butyl acetate	CAS: 123-86-4 - EINECS: 204-658-1 - INDEX: 607-025-00-1	a) Aquatic acute toxicity : LC50 Fish Pimephales promelas (fathead minnow) = 18 mg/L 96 H OECD Test Guideline 203
		a) Aquatic acute toxicity : EC50 Invertebrates Daphnia magna (Water flea) = 44 mg/L 48 H OECD Test Guideline 202
		e) Plant toxicity : EC50 Algae Selenastrum capricornutum (green algae) = 397 mg/L 72 H OECD Test Guideline 201
		c) Bacteria toxicity : IC50 Microorganisms Tetrahymena pyriformis = 356 mg/L 40 H
heptan-2-one	CAS: 110-43-0 - EINECS: 203-767-1 - INDEX: 606-024-00-3	a) Aquatic acute toxicity : LC50 Fish Pimephales promelas (fathead minnow) = 131 mg/L 96h
		a) Aquatic acute toxicity : ErC50 Algae Selenastrum capricornutum (green algae) = 98,2 mg/L 72h
Hydrocarbons, C9, aromatics	EINECS: 918-668-5	a) Aquatic acute toxicity : LC50 Fish Oncorhynchus mykiss (rainbow trout) = 9,2 mg/L 96 H
		a) Aquatic acute toxicity : EC50 Invertebrates Daphnia magna (Water flea) = 3,2 mg/L 48 H
		e) Plant toxicity : Algae algae = 2,9 mg/L 72 H
xylene	CAS: 1330-20-7 - EINECS: 215-535-7 - INDEX: 601-022-00-9	a) Aquatic acute toxicity : LC50 Fish Oncorhynchus mykiss (rainbow trout) = 2,6 mg/L 96 H
		a) Aquatic acute toxicity : IC50 Invertebrates Daphnia magna (Water flea) = 1 mg/L 24 H
		e) Plant toxicity : EC0 Algae Pseudokirchneriella subcapitata (green algae) = 0,44 mg/L 72 H
		b) Aquatic chronic toxicity : NOEC Fish Oncorhynchus mykiss (rainbow trout) > 1,3 mg/L 56 D
		e) Plant toxicity : Algae Pseudokirchneriella subcapitata (green algae) = 4,36 mg/L 72 H
2-methoxy-1-methylethyl acetate	CAS: 108-65-6 - EINECS: 203-603-9 - INDEX: 607-195-00-7	a) Aquatic acute toxicity : LC50 Fish Oncorhynchus mykiss (rainbow trout) 100 mg/L 96 H
		a) Aquatic acute toxicity : EC50 Invertebrates Daphnia magna (Water flea) > 500 mg/L 48 H
		e) Plant toxicity : EC50 Algae Selenastrum capricornutum (green algae) > 1000 mg/L 96 H
		b) Aquatic chronic toxicity : NOEC Fish Oryzias latipes (Japanese medaka) = 47,5 mg/L 14 D
		b) Aquatic chronic toxicity : NOEC Invertebrates Daphnia magna (Water flea) >= 100 mg/L 21 D
		e) Plant toxicity : NOEC Algae Selenastrum capricornutum (green algae) >= 1000 mg/L 96 H
Carbon black	CAS: 1333-86-4 - EINECS: 215-609-9	a) Aquatic acute toxicity : LC10 Fish Brachydanio rerio (zebrafish) = 1000 mg/L 96h
		a) Aquatic acute toxicity : EC50 Invertebrates Daphnia magna (Water flea) > 5600 mg/L 48h
		a) Aquatic acute toxicity : EC50 Algae Desmodesmus subspicatus (green algae) > 10000 mg/L 72h
(2-methoxymethylethoxy)propanol	CAS: 34590-94-	a) Aquatic acute toxicity : LC50 Fish > 10000 mg/L 96 H

	8 - EINECS: 252-104-2	
		a) Aquatic acute toxicity : EC50 Invertebrates Daphnia (water flea) > 85000 mg/L 48 H
methyl methacrylate	CAS: 80-62-6 - EINECS: 201-297-1 - INDEX: 607-035-00-6	a) Aquatic acute toxicity : LC50 Fish Poecilia reticulata (guppy) 426,9 mg/L 96 H
		a) Aquatic acute toxicity : EC50 Invertebrates Daphnia magna (Water flea) = 57 mg/L 48 H
		e) Plant toxicity : EC50 Algae Pseudokirchneriella subcapitata (green algae) = 170 mg/L 96 H
		a) Aquatic acute toxicity : LC50 Fish Oncorhynchus mykiss (rainbow trout) > 79 mg/L 96 H
tert-butyl acrylate	CAS: 1663-39-4 - EINECS: 216-768-7 - INDEX: 607-245-00-8	a) Aquatic acute toxicity : LC50 Fish Leuciscus idus (Golden orfe) 68 mg/L 96 H
		a) Aquatic acute toxicity : EC50 Invertebrates Daphnia magna (Water flea) = 57 mg/L 48 H
		e) Plant toxicity : EC50 Algae Desmodesmus subspicatus (green algae) = 280 mg/L 72 H
		a) Aquatic acute toxicity : LC50 Fish Oncorhynchus mykiss (rainbow trout) = 1,81 mg/L 96 H
zinc oxide	CAS: 1314-13-2 - EINECS: 215-222-5 - INDEX: 030-013-00-7	a) Aquatic acute toxicity : EC50 Algae Pseudokirchneriella subcapitata = 0,17 mg/L 72h
		a) Aquatic acute toxicity : EC50 Daphnia = 0,413 mg/L 48h
		a) Aquatic acute toxicity : LC50 Fish = 0,1169 mg/L 96h
phosphoric acid	CAS: 7664-38-2 - EINECS: 231-633-2 - INDEX: 015-011-00-6	a) Aquatic acute toxicity : LC50 Fish = 75,1 mg/L 96 H
		a) Aquatic acute toxicity : EC50 Invertebrates > 100 mg/L 48 H
		e) Plant toxicity : EC50 Algae > 100 mg/L 72 H
toluene	CAS: 108-88-3 - EINECS: 203-625-9 - INDEX: 601-021-00-3	a) Aquatic acute toxicity : LC50 Fish Oncorhynchus kisutch (coho salmon) = 5,5 mg/L 96 H
		a) Aquatic acute toxicity : EC50 Invertebrates Ceriodaphnia dubia (water flea) = 3,78 mg/L 48 H
		e) Plant toxicity : EC50 Algae algae = 134 mg/L 96 H
		b) Aquatic chronic toxicity : NOEC Fish Oncorhynchus kisutch (coho salmon) = 1,39 mg/L 40 D

12.2. Persistence and degradability

N.A.

12.3. Bioaccumulative potential

N.A.

12.4. Mobility in soil

N.A.

12.5. Results of PBT and vPvB assessment

No PBT or vPvB substances present in concentration >= 0.1%

12.6. Endocrine disrupting properties

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7. Other adverse effects

N.A.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Recover, if possible. Send to authorised disposal plants or for incineration under controlled conditions. In so doing, comply with the local and national regulations currently in force.

SECTION 14: Transport information

14.1. UN number or ID number

1263

14.2. UN proper shipping name

ADR-Shipping Name: PAINT

IATA-Technical name: PAINT

IMDG-Technical name: PAINT

14.3. Transport hazard class(es)

ADR-Class: 3

IATA-Class: 3

IMDG-Class: 3

14.4. Packing group

ADR-Packing Group: III

IATA-Packing group: III

IMDG-Packing group: III

14.5. Environmental hazards

Most important toxic component: trizinc bis(orthophosphate)

Toxic ingredients quantity: 4.11

Very toxic ingredients quantity: 5.69

Marine pollutant: Yes

Environmental Pollutant: Yes

IMDG-EMS: F-E, S-E

14.6. Special precautions for user

Road and Rail (ADR-RID):

ADR exempt:

ADR-Label: 3

ADR - Hazard identification number: -

ADR-Special Provisions: 163 367 650

ADR-Transport category (Tunnel restriction code): 3 (E)

Air (IATA):

IATA-Passenger Aircraft: 355

IATA-Cargo Aircraft: 366

IATA-Label: 3

IATA-Subsidiary hazards: -

IATA-Erg: 3L

IATA-Special Provisions: A3 A72 A192

Sea (IMDG):

IMDG-Stowage Code: Category A

IMDG-Stowage Note: -

IMDG-Subsidiary hazards: -

IMDG-Special Provisions: 163 223 367 955

14.7. Maritime transport in bulk according to IMO instruments

N.A.

SECTION 15: Regulatory information

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

Dir. 98/24/EC (Risks related to chemical agents at work)

Dir. 2000/39/EC (Occupational exposure limit values)

Regulation (EC) n. 1907/2006 (REACH)

Regulation (EC) n. 1272/2008 (CLP)
Regulation (EC) n. 790/2009 (ATP 1 CLP) and (EU) n. 758/2013
Regulation (EU) n. 286/2011 (ATP 2 CLP)
Regulation (EU) n. 618/2012 (ATP 3 CLP)
Regulation (EU) n. 487/2013 (ATP 4 CLP)
Regulation (EU) n. 944/2013 (ATP 5 CLP)
Regulation (EU) n. 605/2014 (ATP 6 CLP)
Regulation (EU) n. 2016/918 (ATP 8 CLP)
Regulation (EU) n. 2016/1179 (ATP 9 CLP)
Regulation (EU) n. 2017/776 (ATP 10 CLP)
Regulation (EU) n. 2018/669 (ATP 11 CLP)
Regulation (EU) n. 2018/1480 (ATP 13 CLP)
Regulation (EU) n. 2019/521 (ATP 12 CLP)
Regulation (EU) n. 2020/217 (ATP 14 CLP)
Regulation (EU) n. 2020/1182 (ATP 15 CLP)
Regulation (EU) n. 2021/643 (ATP 16 CLP)
Regulation (EU) n. 2021/849 (ATP 17 CLP)
Regulation (EU) n. 2020/878

Restrictions related to the product or the substances contained according to Annex XVII Regulation (EC) 1907/2006 (REACH) and subsequent modifications:

Restrictions related to the product: 3, 40

Restrictions related to the substances contained: 48, 75

Provisions related to directive EU 2012/18 (Seveso III):

Seveso III category according to Annex 1, part 1	Lower-tier threshold (tonnes)	Upper-tier threshold (tonnes)
Product belongs to category: P5c	5000	50000
Product belongs to category: E2	200	500

Regulation (EU) No 649/2012 (PIC regulation)

No substances listed

German Water Hazard Class.

2: Hazard to waters

SVHC Substances:

No data available

Dir. 2010/75/EC (VOC directive)

Volatile Organic compounds - VOCs = 29.81 %

Volatile Organic compounds - VOCs = 396.54 g/L

Estimated Total Content of Water 0.00 %

Estimated Total Solid Content 70.19 %

Storage Class (TRGS 510)

Storage Class (TRGS 510) Flammable liquid substances

Classification according to VbF

Classification according to VbF Exempt

Mal-Code (Denmark)

Mal-Code (Denmark)	Mal Factor	Unit of Measure	Revision Status / Number	Regulatory Base
5 - 6	5.127	m3 air/10 g	1993	Administrative determined MAL-Factors

Biocides

REGULATION (EC) No 528/2012

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out for the mixture.

SECTION 16: Other information

Code	Description
EUH066	Repeated exposure may cause skin dryness or cracking.
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H290	May be corrosive to metals.
H302	Harmful if swallowed.

H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H361	Suspected of damaging fertility or the unborn child.
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.

Code	Hazard class and hazard category	Description
2.16/1	Met. Corr. 1	Substance or mixture corrosive to metals, Category 1
2.6/2	Flam. Liq. 2	Flammable liquid, Category 2
2.6/3	Flam. Liq. 3	Flammable liquid, Category 3
3.1/3/Inhal	Acute Tox. 3	Acute toxicity (inhalation), Category 3
3.1/4/Dermal	Acute Tox. 4	Acute toxicity (dermal), Category 4
3.1/4/Inhal	Acute Tox. 4	Acute toxicity (inhalation), Category 4
3.1/4/Oral	Acute Tox. 4	Acute toxicity (oral), Category 4
3.10/1	Asp. Tox. 1	Aspiration hazard, Category 1
3.2/1B	Skin Corr. 1B	Skin corrosion, Category 1B
3.2/2	Skin Irrit. 2	Skin irritation, Category 2
3.3/1	Eye Dam. 1	Serious eye damage, Category 1
3.3/2	Eye Irrit. 2	Eye irritation, Category 2
3.4.2/1	Skin Sens. 1	Skin Sensitisation, Category 1
3.7/2	Repr. 2	Reproductive toxicity, Category 2
3.8/3	STOT SE 3	Specific target organ toxicity — single exposure, Category 3
3.9/2	STOT RE 2	Specific target organ toxicity — repeated exposure, Category 2
4.1/A1	Aquatic Acute 1	Acute aquatic hazard, category 1
4.1/C1	Aquatic Chronic 1	Chronic (long term) aquatic hazard, category 1
4.1/C2	Aquatic Chronic 2	Chronic (long term) aquatic hazard, category 2
4.1/C3	Aquatic Chronic 3	Chronic (long term) aquatic hazard, category 3

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Classification according to Regulation (EC) Nr. 1272/2008	Classification procedure
2.6/3	On basis of test data
3.3/2	Calculation method
3.8/3	Calculation method
4.1/C2	Calculation method

This document was prepared by a competent person who has received appropriate training.

Main bibliographic sources:

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition - Van Nostrand Reinold

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality.

It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.

This MSDS cancels and replaces any preceding release.

Legend to abbreviations and acronyms used in the safety data sheet:

ACGIH: American Conference of Governmental Industrial Hygienists
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
AND: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ATE: Acute Toxicity Estimate
ATEmix: Acute toxicity Estimate (Mixtures)
BCF: Biological Concentration Factor
BEI: Biological Exposure Index
BOD: Biochemical Oxygen Demand
CAS: Chemical Abstracts Service (division of the American Chemical Society).
CAV: Poison Center
CE: European Community
CLP: Classification, Labeling, Packaging.
CMR: Carcinogenic, Mutagenic and Reprotoxic
COD: Chemical Oxygen Demand
COV: Volatile Organic Compound
CSA: Chemical Safety Assessment
CSR: Chemical Safety Report
DMEL: Derived Minimal Effect Level
DNEL: Derived No Effect Level.
DPD: Dangerous Preparations Directive
DSD: Dangerous Substances Directive
EC50: Half Maximal Effective Concentration
ECHA: European Chemicals Agency
EINECS: European Inventory of Existing Commercial Chemical Substances.
ES: Exposure Scenario
GefStoffVO: Ordinance on Hazardous Substances, Germany.
GHS: Globally Harmonized System of Classification and Labeling of Chemicals.
IARC: International Agency for Research on Cancer
IATA: International Air Transport Association.
IATA-DGR: Dangerous Goods Regulation by the "International Air Transport Association" (IATA).
IC50: half maximal inhibitory concentration
ICAO: International Civil Aviation Organization.
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO).
IMDG: International Maritime Code for Dangerous Goods.
INCI: International Nomenclature of Cosmetic Ingredients.
IRCCS: Scientific Institute for Research, Hospitalization and Health Care
KAFH: KAFH
KSt: Explosion coefficient.
LC50: Lethal concentration, for 50 percent of test population.
LD50: Lethal dose, for 50 percent of test population.
LDLo: Leathal Dose Low
N.A.: Not Applicable
N/A: Not Applicable
N/D: Not defined/ Not available
NA: Not available
NIOSH: National Institute for Occupational Safety and Health
NOAEL: No Observed Adverse Effect Level
OSHA: Occupational Safety and Health Administration
PBT: Persistent, Bioaccumulative and Toxic
PGK: Packaging Instruction
PNEC: Predicted No Effect Concentration.
PSG: Passengers
RID: Regulation Concerning the International Transport of Dangerous Goods by Rail.
STEL: Short Term Exposure limit.
STOT: Specific Target Organ Toxicity.
TLV: Threshold Limiting Value.
TWATLV: Threshold Limit Value for the Time Weighted Average 8 hour day. (ACGIH Standard).
vPvB: Very Persistent, Very Bioaccumulative.
WGK: German Water Hazard Class.

Paragraphs modified from the previous revision:

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

- SECTION 2: Hazards identification
- SECTION 3: Composition/information on ingredients
- SECTION 4: First aid measures
- SECTION 5: Firefighting measures
- SECTION 6: Accidental release measures
- SECTION 7: Handling and storage
- SECTION 8: Exposure controls/personal protection
- SECTION 9: Physical and chemical properties
- SECTION 10: Stability and reactivity
- SECTION 11: Toxicological information
- SECTION 12: Ecological information
- SECTION 13: Disposal considerations
- SECTION 14: Transport information
- SECTION 15: Regulatory information
- SECTION 16: Other information