

Safety Data Sheet

Conforms to Regulation (EC) No. 1907/2006 (REACH), Article 31, Annex II, as amended by Commission Regulation (EU) 2020/878

FACTORY COLOR PU-S (A)

Date of first edition: 5/18/2021

Safety Data Sheet dated 30/11/2023 version 5

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

1.1. Product identifier

Mixture identification:

Trade name: FACTORY COLOR PU-S (A)

Trade code: 001033002 -5

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

Recommended use: Coatings and paints, thinners, paint removers

Uses advised against: All uses other than recommended ones

1.3. Details of the supplier of the safety data sheet

Company: KERAKOLL S.p.A.

Via dell'Artigianato, 9

41049 Sassuolo (MODENA) - ITALY

Tel. +39 0536 816511 Fax. +39 0536816581

safety@kerakoll.com

1.4. Emergency telephone number

European emergency phone number 112

Ireland Emergency medical information: (seven days) contact National Poisons Information Centre, Beaumont Hospital, Dublin 9 DOV2NO, Ireland.

Members of the public Number (8 am-10 pm): +353 (0)1 809 2166

Healthcare professional telephone Number (24hrs): +353 (0)1 809 2566

Malta In case of emergency call: +356 2395 2000 (24h)

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.

Skin Sens. 1A May cause an allergic skin reaction.

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.

H317 May cause an allergic skin reaction.

Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P280 Wear protective gloves and eye/face protection.

P302+P352 IF ON SKIN: Wash with plenty of water.

P370+P378 In case of fire, use a dry powder fire extinguisher to extinguish.

P501 Dispose of contents/container in accordance with applicable regulations.

Special Provisions:

EUH208 Contains 4-morpholinecarbaldehyde. May produce an allergic reaction.
EUH066 Repeated exposure may cause skin dryness or cracking.

Contains

maleic anhydride

Dir. 2004/42/EC (VOC directive)

Two-pack reactive performance coatings for specific end use such as floors
EU limit value for this product (cat. A/j): 500 g/l
This product contains max 321.47 g/l VOC.

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

None.

2.3. Other hazards

No PBT, vPvB or endocrine disruptor substances present in concentration $\geq 0.1\%$

Other Hazards: No other hazards

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

N.A.

3.2. Mixtures

Mixture identification: FACTORY COLOR PU-S (A)

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

Qty	Name	Ident. Numb.	Classification	Registration Number
$\geq 5 < 10 \%$	2-methoxy-1-methylethyl acetate	CAS:108-65-6 EC:203-603-9	Flam. Liq. 3, H226; STOT SE 3, H336	01-2119475791-29
$\geq 5 < 10 \%$	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
$\geq 0.5 < 1 \%$	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; STOT SE 3, H335; STOT RE 2, H373; Asp. Tox. 1, H304; Aquatic Chronic 3, H412; Eye Irrit. 2, H319, M-Chronic:1	01-2119488216-32
$\geq 0.3 < 0.5 \%$	Propylidynetrimethanol	CAS:77-99-6 EC:201-074-9	Repr. 2, H361	01-2119486799-10-XXXX
$\geq 0.3 < 0.5 \%$	4-morpholinecarbaldehyde	CAS:4394-85-8 EC:224-518-3	Skin Sens. 1B, H317	01-2119987993-12
$< 0.036 \%$	phosphoric acid	CAS:7664-38-2 EC:231-633-2 Index:015-011-00-6	Met. Corr. 1, H290; Skin Corr. 1B, H314; Acute Tox. 4, H302 Specific Concentration Limits: C $\geq 25\%$: Skin Corr. 1B H314 10% $\leq$ C < 25%: Skin Irrit. 2 H315 10% $\leq$ C < 25%: Eye Irrit. 2 H319	01-2119485924-24
$< 0.01 \%$	maleic anhydride	CAS:108-31-6 EC:203-571-6 Index:607-096-00-9	Acute Tox. 4, H302; STOT RE 1, H372; Skin Corr. 1B, H314; Eye Dam. 1, H318; Resp. Sens. 1, H334; Skin Sens. 1A, H317, EUH071 Specific Concentration Limits: C $\geq 0.001\%$: Skin Sens. 1A H317	

SECTION 4: First aid measures**4.1. Description of first aid measures**

In case of skin contact:

Immediately take off all contaminated clothing.

Remove contaminated clothing immediately and dispose off safely.

In case of eyes contact:

Wash immediately with water.

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

N.A.

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 a dry powder fire extinguisher 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

For non emergency personnel:

Wear personal protection equipment.

Remove all sources of ignition.

Remove persons to safety.

See protective measures under point 7 and 8.

For emergency responders:

Wear personal protection equipment.

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.

Contaminated clothing should be changed before entering eating areas.

Do not eat or drink while working.

See also section 8 for recommended protective equipment.

Advice on general occupational hygiene:

7.2. Conditions for safe storage, including any incompatibilities

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

Incompatible materials:

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)**

2-methoxy-1-methylethyl acetate

CAS: 108-65-6	EU	Long Term: 275 mg/m ³ - 50 ppm (8h); Short Term: 550 mg/m ³ - 100 ppm Notes: Skin
	NATION AUSTRIA AL	Long Term: 275 mg/m ³ - 50 ppm; Short Term: Ceiling - 550 mg/m ³ - 100 ppm Notes: 5(Mow), 8x, MAK, H Source: BGBl. II Nr. 156/2021
	NATION BELGIUM AL	Long Term: 275 mg/m ³ - 50 ppm; Short Term: 550 mg/m ³ - 100 ppm Notes: D Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
	NATION BULGARIA AL	Long Term: 275 mg/m ³ - 50 ppm; Short Term: 550 mg/m ³ - 100 ppm Notes: Кожа Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
	NATION CYPRUS AL	Long Term: 275 mg/m ³ - 50 ppm; Short Term: 550 mg/m ³ - 100 ppm Notes: δέρμα Source: Οι περί Ασφάλειας και Υγείας στην Εργασία (Χημικοί Παράγοντες) Κανονισμοί του 2001 έως 2021
	NATION CZECHIA AL	Long Term: 270 mg/m ³ ; Short Term: Ceiling - 550 mg/m ³ Notes: D, I Source: Nařízení vlády č. 361-2007 Sb
	NATION GERMANY AL	Long Term: 270 mg/m ³ - 50 ppm Notes: DFG, EU, Y, 1(I) Source: TRGS 900
	NATION DENMARK AL	Long Term: 275 mg/m ³ - 50 ppm Notes: EH Source: BEK nr 2203 af 29/11/2021
	NATION SPAIN AL	Long Term: 275 mg/m ³ - 50 ppm; Short Term: 550 mg/m ³ - 100 ppm Notes: vía dérmica, VLI Source: LEP 2022
	NATION ESTONIA AL	Long Term: 275 mg/m ³ - 50 ppm; Short Term: 550 mg/m ³ - 100 ppm Notes: A, S Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
	NATION FINLAND AL	Long Term: 270 mg/m ³ - 50 ppm; Short Term: 550 mg/m ³ - 100 ppm Notes: iho Source: HTP-ARVOT 2020
	NATION FRANCE AL	Long Term: 275 mg/m ³ - 50 ppm; Short Term: 550 mg/m ³ - 100 ppm Notes: Risque de pénétration percutanée Source: INRS outil65, article R. 4412-149 du Code du travail
	NATION GREECE AL	Long Term: 275 mg/m ³ - 50 ppm; Short Term: 550 mg/m ³ - 100 ppm Notes: Δ Source: ΦΕΚ 94/Α` 13.5.1999
	NATION CROATIA AL	Long Term: 275 mg/m ³ - 50 ppm; Short Term: 550 mg/m ³ - 100 ppm Notes: koža Source: 2000/39/EZ
	NATION HUNGARY AL	Long Term: 275 mg/m ³ ; Short Term: 550 mg/m ³ Notes: EU1, N Source: 5/2020. (II. 6.) ITM rendelet
	NATION IRELAND AL	Long Term: 275 mg/m ³ - 50 ppm; Short Term: 550 mg/m ³ - 100 ppm Notes: Sk, IOELV Source: 2021 Code of Practice
	NATION ITALY AL	Long Term: 275 mg/m ³ - 50 ppm; Short Term: 550 mg/m ³ - 100 ppm Notes: Cute Source: D.lgs. 81/2008, Allegato XXXVIII

NATION LITHUANIA AL		Long Term: 250 mg/m ³ - 50 ppm; Short Term: 400 mg/m ³ - 75 ppm Notes: O Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
NATION LUXEMBOUR AL G		Long Term: 275 mg/m ³ - 50 ppm; Short Term: 550 mg/m ³ - 100 ppm Notes: Peau Source: Mémorial A n.226 du 22 mars 2021
NATION LATVIA AL		Long Term: 275 mg/m ³ - 50 ppm; Short Term: 550 mg/m ³ - 100 ppm Notes: Āda Source: KN325P1
NATION MALTA AL		Long Term: 275 mg/m ³ - 50 ppm; Short Term: 550 mg/m ³ - 100 ppm Notes: skin Source: S.L.424.24
NATION NETHERLAND AL S		Long Term: 550 mg/m ³ Source: Arbeidsomstandighedenregeling - Lijst A
NATION NORWAY AL		Long Term: 270 mg/m ³ - 50 ppm Notes: H E Source: FOR-2021-06-28-2248
NATION POLAND AL		Long Term: 260 mg/m ³ ; Short Term: 520 mg/m ³ Notes: skóra Source: Dz.U. 2018 poz. 1286
NATION PORTUGAL AL		Long Term: 275 mg/m ³ - 50 ppm; Short Term: 550 mg/m ³ - 100 ppm Notes: Cutânea Source: Decreto-Lei n.º 1/2021
NATION ROMANIA AL		Long Term: 275 mg/m ³ - 50 ppm; Short Term: 550 mg/m ³ - 100 ppm Notes: P, Dir. 2000/39 Source: Republicarea 1 - nr. 743 din 29 iulie 2021
NATION SLOVAKIA AL		Long Term: 275 mg/m ³ - 50 ppm; Short Term: 550 mg/m ³ - 100 ppm Notes: K Source: 355 NARIADENIE VLÁDY z 10. mája 2006
NATION SLOVENIA AL		Long Term: 275 mg/m ³ - 50 ppm; Short Term: 550 mg/m ³ - 100 ppm Notes: K, Y, EU1 Source: UL št. 72, 11. 5. 2021
NATION SWEDEN AL		Long Term: 275 mg/m ³ - 50 ppm; Short Term: 550 mg/m ³ - 100 ppm Notes: H Source: AFS 2021:3
WEL- EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 274 mg/m ³ - 50 ppm; Short Term: 548 mg/m ³ - 100 ppm Notes: Sk Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
SUVA	SWITZERLAN D	Long Term: 275 mg/m ³ - 50 ppm; Short Term: 275 mg/m ³ - 50 ppm Notes: SSC, VRS / OAW Source: suva.ch/valeurs-limites

n-butyl acetate

CAS: 123-86-4

EU		Long Term: 241 mg/m ³ - 50 ppm (8h); Short Term: 723 mg/m ³ - 150 ppm
NATION AUSTRIA AL		Long Term: 241 mg/m ³ - 50 ppm; Short Term: Ceiling - 480 mg/m ³ - 100 ppm Notes: Mow, MAK Source: GKV, BGBl. II Nr. 156/2021
NATION BELGIUM AL		Long Term: 238 mg/m ³ - 50 ppm; Short Term: 712 mg/m ³ - 150 ppm Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
NATION BULGARIA AL		Long Term: 241 mg/m ³ - 50 ppm; Short Term: 723 mg/m ³ - 150 ppm Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
NATION CYPRUS AL		Long Term: 241 mg/m ³ - 50 ppm; Short Term: 723 mg/m ³ - 150 ppm Source: Οι περί Ασφάλειας και Υγείας στην Εργασία (Χημικοί Παράγοντες) Κανονισμοί του 2001 έως 2021
NATION CZECHIA AL		Long Term: 241 mg/m ³ ; Short Term: Ceiling - 723 mg/m ³ Source: Nařízení vlády č. 361-2007 Sb

NATION AL	GERMANY	Long Term: 300 mg/m3 - 62 ppm Notes: AGS, Y, 2 (I) Source: TRGS 900
NATION AL	DENMARK	Long Term: 241 mg/m3 - 50 ppm Notes: E Source: BEK nr 2203 af 29/11/2021
NATION AL	SPAIN	Long Term: 241 mg/m3 - 50 ppm; Short Term: 723 mg/m3 - 150 ppm Notes: VLI Source: LEP 2022
NATION AL	ESTONIA	Long Term: 241 mg/m3 - 50 ppm; Short Term: 723 mg/m3 - 150 ppm
NATION AL	FINLAND	Long Term: 240 mg/m3 - 50 ppm; Short Term: 725 mg/m3 - 150 ppm Source: HTP-ARVOT 2020
NATION AL	FRANCE	Long Term: 241 mg/m3 - 50 ppm; Short Term: 723 mg/m3 - 150 ppm Source: INRS outil65, article R. 4412-149 du Code du travail
NATION AL	GREECE	Long Term: 241 mg/m3 - 50 ppm; Short Term: 723 mg/m3 - 150 ppm Source: Y.A. 72/2021 (ΦΕΚ 163/A` 9.9.2021)
NATION AL	CROATIA	Long Term: 241 mg/m3 - 50 ppm; Short Term: 723 mg/m3 - 150 ppm Source: 2019/1831
NATION AL	HUNGARY	Long Term: 241 mg/m3; Short Term: 723 mg/m3 Notes: i, sz, EU7, N Source: 5/2020. (II. 6.) ITM rendelet
NATION AL	IRELAND	Long Term: 241 mg/m3 - 50 ppm; Short Term: 723 mg/m3 - 150 ppm Notes: IOELV Source: 2021 Code of Practice
NATION AL	ITALY	Long Term: 241 mg/m3 - 50 ppm; Short Term: 723 mg/m3 - 150 ppm Source: D.lgs. 81/2008, Allegato XXXVIII
NATION AL	LUXEMBOUR G	Long Term: 241 mg/m3 - 50 ppm; Short Term: 723 mg/m3 - 150 ppm Source: Mémorial A n.226 du 22 mars 2021
NATION AL	LATVIA	Long Term: 241 mg/m3 - 50 ppm; Short Term: 723 mg/m3 - 150 ppm Source: KN325P1
NATION AL	MALTA	Long Term: 241 mg/m3 - 50 ppm; Short Term: 723 mg/m3 - 150 ppm Source: S.L.424.24
NATION AL	NETHERLAND S	Long Term: 241 mg/m3; Short Term: 723 mg/m3 Source: Arbeidsomstandighedenregeling - Lijst A
NATION AL	POLAND	Long Term: 240 mg/m3; Short Term: 720 mg/m3 Source: Dz.U. 2018 poz. 1286
NATION AL	PORTUGAL	Long Term: 241 mg/m3 - 50 ppm; Short Term: 723 mg/m3 - 150 ppm Source: Decreto-Lei n.º 1/2021
NATION AL	ROMANIA	Long Term: 241 mg/m3 - 50 ppm; Short Term: 723 mg/m3 - 150 ppm Notes: Dir. 2019/1.831 Source: Republicarea 1 - nr. 743 din 29 iulie 2021
NATION AL	SLOVAKIA	Long Term: 241 mg/m3 - 50 ppm; Short Term: 723 mg/m3 - 150 ppm Source: 355 NARIADENIE VLÁDY z 10. mája 2006
NATION AL	SLOVENIA	Long Term: 241 mg/m3 - 50 ppm; Short Term: 723 mg/m3 - 150 ppm Notes: Y, EU5 Source: UL št. 72, 11. 5. 2021
NATION AL	SWEDEN	Long Term: 241 mg/m3 - 50 ppm; Short Term: 723 mg/m3 - 150 ppm Source: AFS 2021:3
WEL- EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 724 mg/m3 - 150 ppm; Short Term: 966 mg/m3 - 200 ppm Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
SUVA	SWITZERLAN D	Long Term: 240 mg/m3 - 50 ppm; Short Term: 720 mg/m3 - 150 ppm Notes: SSC, VR Yeux / AW Auge, INRS NIOSH Source: suva.ch/valeurs-limites

Titanium dioxide

CAS: 13463-67-7

ACGIH	Long Term: 2.5 mg/m3 (8h) Notes: Finescale particles; R ; A3 - LRT irr, pneumoconiosis
NATION AUSTRIA AL	Long Term: 5 mg/m3; Short Term: 10 mg/m3 Notes: 60(Miw), 2x, MAK, A Source: BGBl. II Nr. 156/2021
NATION BELGIUM AL	Long Term: 10 mg/m3 Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
NATION BULGARIA AL	Long Term: 10 mg/m3 Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
NATION GERMANY AL	Long Term: 0.3 mg/m3; Short Term: 2.4 mg/m3 Notes: DFG; Long term and short term: excluding ultrafine particles; respirable fraction; multiplied by the material density; Source: TRGS900
NATION DENMARK AL	Long Term: 6 mg/m3 Notes: K Source: BEK nr 2203 af 29/11/2021
NATION SPAIN AL	Long Term: 10 mg/m3 Source: LEP 2022
NATION ESTONIA AL	Long Term: 5 mg/m3 Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
NATION FRANCE AL	Long Term: 10 mg/m3 Notes: Cancérogène de catégorie 2 Source: INRS outil65
NATION GREECE AL	Long Term: 10 mg/m3 Notes: εισπν. Source: ΦΕΚ 94/Α` 13.5.1999
	Long Term: 5 mg/m3 Notes: αναπν. Source: ΦΕΚ 94/Α` 13.5.1999
NATION CROATIA AL	Long Term: 10 mg/m3 Notes: U Source: NN 1/2021
	Long Term: 4 mg/m3 Notes: R Source: NN 1/2021
NATION IRELAND AL	Long Term: 10 mg/m3 Source: 2021 Code of Practice
	Long Term: 4 mg/m3 Source: 2021 Code of Practice
NATION LITHUANIA AL	Long Term: 5 mg/m3 Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
NATION LATVIA AL	Long Term: 10 mg/m3 Source: KN325P1
NATION NORWAY AL	Long Term: 5 mg/m3 Source: FOR-2021-06-28-2248
NATION POLAND AL	Long Term: 10 mg/m3 Notes: 4), 7) Source: Dz.U. 2018 poz. 1286
NATION ROMANIA AL	Long Term: 10 mg/m3; Short Term: 15 mg/m3 Source: Republicarea 1 - nr. 743 din 29 iulie 2021
NATION SLOVAKIA AL	Long Term: 5 mg/m3 Source: 355 NARIADENIE VLÁDY z 10. mája 2006
NATION SWEDEN AL	Long Term: 5 mg/m3 Notes: 3 Source: AFS 2021:3

xylene CAS: 1330-20-7	SUVA	Long Term: 3 mg/m ³ Notes: TWA mg/m ³ : (a), SSC, Formel / Formal, NIOSH Source: suva.ch/valeurs-limites
	SWITZERLAND	
	ACGIH	Long Term: 20 ppm (8h) Notes: A4, BEI - URT and eye irr; hematologic eff; CNS impair
	EU	Long Term: 221 mg/m ³ - 50 ppm (8h); Short Term: 442 mg/m ³ - 100 ppm Notes: Skin
	NATION AUSTRIA AL	Long Term: 221 mg/m ³ - 50 ppm; Short Term: 442 mg/m ³ - 100 ppm Notes: 15(Miw), 4x, MAK Source: BGBl. II Nr. 156/2021
	NATION BELGIUM AL	Long Term: 221 mg/m ³ - 50 ppm; Short Term: 442 mg/m ³ - 100 ppm Notes: D Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
	NATION BULGARIA AL	Long Term: 221 mg/m ³ - 50 ppm; Short Term: 442 mg/m ³ - 100 ppm Notes: Кожа Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
	NATION CYPRUS AL	Long Term: 221 mg/m ³ - 50 ppm; Short Term: 442 mg/m ³ - 100 ppm Notes: δέρμα Source: Οι περί Ασφάλειας και Υγείας στην Εργασία (Χημικοί Παράγοντες) Κανονισμοί του 2001 έως 2021
	NATION CZECHIA AL	Long Term: 200 mg/m ³ ; Short Term: Ceiling - 400 mg/m ³ Notes: B, D, I Source: Nařízení vlády č. 361-2007 Sb
	NATION GERMANY AL	Long Term: 220 mg/m ³ - 50 ppm Notes: DFG, EU, H, 2(II) Source: TRGS 900
	NATION DENMARK AL	Long Term: 109 mg/m ³ - 25 ppm Notes: EH Source: BEK nr 2203 af 29/11/2021
	NATION SPAIN AL	Long Term: 221 mg/m ³ - 50 ppm; Short Term: 442 mg/m ³ - 100 ppm Notes: vía dérmica, VLB®, VLI Source: LEP 2022
	NATION ESTONIA AL	Long Term: 200 mg/m ³ - 50 ppm; Short Term: 450 mg/m ³ - 100 ppm Notes: A Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
	NATION FINLAND AL	Long Term: 220 mg/m ³ - 50 ppm; Short Term: 440 mg/m ³ - 100 ppm Notes: iho Source: HTP-ARVOT 2020
	NATION FRANCE AL	Long Term: 221 mg/m ³ - 50 ppm; Short Term: 442 mg/m ³ - 100 ppm Notes: Risque de pénétration percutanée Source: INRS outil65, article R. 4412-149 du Code du travail
	NATION GREECE AL	Long Term: 435 mg/m ³ - 100 ppm; Short Term: 650 mg/m ³ - 150 ppm Notes: Δ Source: ΦΕΚ 94/Α` 13.5.1999
	NATION CROATIA AL	Long Term: 221 mg/m ³ - 50 ppm; Short Term: 442 mg/m ³ - 100 ppm Notes: koža Source: 2000/39/EZ
	NATION HUNGARY AL	Long Term: 221 mg/m ³ ; Short Term: 442 mg/m ³ Notes: b, BEM, EU1, R Source: 5/2020. (II. 6.) ITM rendelet
	NATION IRELAND AL	Long Term: 221 mg/m ³ - 50 ppm; Short Term: 442 mg/m ³ - 100 ppm Notes: Sk, IOELV Source: 2021 Code of Practice
	NATION ITALY AL	Long Term: 221 mg/m ³ - 50 ppm; Short Term: 442 mg/m ³ - 100 ppm Notes: Cute Source: D.lgs. 81/2008, Allegato XXXVIII
	NATION LITHUANIA AL	Long Term: 200 mg/m ³ - 50 ppm; Short Term: 450 mg/m ³ - 100 ppm Notes: O Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389

NATION AL	LUXEMBOUR G	Long Term: 221 mg/m ³ - 50 ppm; Short Term: 442 mg/m ³ - 100 ppm Notes: Peau Source: Mémorial A n.226 du 22 mars 2021
NATION AL	LATVIA	Long Term: 221 mg/m ³ - 50 ppm; Short Term: 442 mg/m ³ - 100 ppm Notes: Āda Source: KN325P1
NATION AL	MALTA	Long Term: 221 mg/m ³ - 50 ppm; Short Term: 442 mg/m ³ - 100 ppm Notes: skin Source: S.L.424.24
NATION AL	NETHERLAND S	Long Term: 210 mg/m ³ ; Short Term: 442 mg/m ³ Notes: H Source: Arbeidsomstandighedenregeling - Lijst A
NATION AL	NORWAY	Long Term: 108 mg/m ³ - 25 ppm Notes: H E Source: FOR-2021-06-28-2248
NATION AL	POLAND	Long Term: 100 mg/m ³ ; Short Term: 200 mg/m ³ Notes: skóra Source: Dz.U. 2018 poz. 1286
NATION AL	PORTUGAL	Long Term: 221 mg/m ³ - 50 ppm; Short Term: 442 mg/m ³ - 100 ppm Notes: Cutânea Source: Decreto-Lei n.º 1/2021
NATION AL	ROMANIA	Long Term: 221 mg/m ³ - 50 ppm; Short Term: 442 mg/m ³ - 100 ppm Notes: P, Dir. 2000/39 Source: Republicarea 1 - nr. 743 din 29 iulie 2021
NATION AL	SLOVAKIA	Long Term: 221 mg/m ³ - 50 ppm; Short Term: 442 mg/m ³ - 100 ppm Notes: K, 7) Source: 355 NARIADENIE VLÁDY z 10. mája 2006
NATION AL	SLOVENIA	Long Term: 221 mg/m ³ - 50 ppm; Short Term: 442 mg/m ³ - 100 ppm Notes: K, BAT, EU1 Source: UL št. 72, 11. 5. 2021
NATION AL	SWEDEN	Long Term: 221 mg/m ³ - 50 ppm; Short Term: 442 mg/m ³ - 100 ppm Notes: H Source: AFS 2021:3
WEL- EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 220 mg/m ³ - 50 ppm; Short Term: 441 mg/m ³ - 100 ppm Notes: Sk, BMGV Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
SUVA	SWITZERLAN D	Long Term: 220 mg/m ³ - 50 ppm; Short Term: 440 mg/m ³ - 100 ppm Notes: R/H, B, SNC / ZNS, NIOSH INRS Source: suva.ch/valeurs-limites

Talc (Mg₃H₂(SiO₃)₄)

CAS: 14807-96-6

ACGIH	Long Term: 2 mg/m ³ (8h) Notes: Containing no asbestos fibers\$ E,R, A4 - Pulm fibrosis, pulm func
NATION AL	AUSTRIA Long Term: 2 mg/m ³ Notes: MAK, A Source: BGBl. II Nr. 156/2021
NATION AL	BELGIUM Long Term: 2 mg/m ³ Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
NATION AL	DENMARK Notes: 0, 3 fiber/cm ³ , K Source: BEK nr 2203 af 29/11/2021
NATION AL	SPAIN Long Term: 2 mg/m ³ Notes: d, e Source: LEP 2022
NATION AL	FINLAND Notes: 8h: 0.5 kuitua/cm ³ Source: HTP-ARVOT 2020 Long Term: 2 mg/m ³ Notes: hengittyvä pöly Source: HTP-ARVOT 2020

		Long Term: 1 mg/m3 Notes: alveolijae Source: HTP-ARVOT 2020
NATION GREECE AL		Long Term: 10 mg/m3 Notes: εισπν. Source: ΦΕΚ 94/Α` 13.5.1999
		Long Term: 2 mg/m3 Notes: αναπν. Source: ΦΕΚ 94/Α` 13.5.1999
NATION CROATIA AL		Long Term: 1 mg/m3 Notes: R Source: NN 1/2021
NATION HUNGARY AL		Long Term: 2 mg/m3 Notes: Respirable aerosol Source: 5/2020. (II. 6.) ITM
NATION IRELAND AL		Long Term: 10 mg/m3 Source: 2021 Code of Practice
		Long Term: 0.8 mg/m3 Source: 2021 Code of Practice
NATION LATVIA AL		Long Term: 4 mg/m3 Source: KN325P1
NATION NETHERLAND AL S		Long Term: 0.25 mg/m3 Source: Arbeidsomstandighedenregeling - Lijst A
NATION POLAND AL		Long Term: 4 mg/m3 Notes: 4) Source: Dz.U. 2018 poz. 1286
		Long Term: 1 mg/m3 Notes: 6), 18) Source: Dz.U. 2018 poz. 1286
NATION ROMANIA AL		Long Term: 2 mg/m3 Notes: fracțiune respirabilă Source: Republicarea 1 - nr. 743 din 29 iulie 2021
NATION SWEDEN AL		Long Term: 2 mg/m3 Notes: 3 Source: AFS 2021:3
		Long Term: 1 mg/m3 Notes: 3 Source: AFS 2021:3
SUVA SWITZERLAND D		Long Term: 3 mg/m3 Notes: TWA mg/m3: (a), SSC, Formel / Formal, OSHA Source: suva.ch/valeurs-limites
Propylidynetrimethanol		
CAS: 77-99-6	NATION LITHUANIA AL	Short Term: Ceiling - 5 ppm Notes: Ū Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
	NATION SWEDEN AL	Long Term: 5 mg/m3 Source: AFS 2021:3
phosphoric acid		
CAS: 7664-38-2	ACGIH	Long Term: 1 mg/m3 (8h); Short Term: 3 mg/m3 Notes: URT, eye and skin irr
	EU	Long Term: 1 mg/m3 (8h); Short Term: 2 mg/m3
	NATION AUSTRIA AL	Long Term: 1 mg/m3; Short Term: 2 mg/m3 Notes: 15(Miw), 4x, MAK Source: BGBl. II Nr. 156/2021
	NATION BELGIUM AL	Long Term: 1 mg/m3; Short Term: 2 mg/m3 Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
	NATION BULGARIA AL	Long Term: 1 mg/m3; Short Term: 2 mg/m3 Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.

NATION CYPRUS AL	Long Term: 1 mg/m ³ ; Short Term: 2 mg/m ³ Source: Οι περί Ασφάλειας και Υγείας στην Εργασία (Χημικοί Παράγοντες) Κανονισμοί του 2001 έως 2021
NATION CZECHIA AL	Long Term: 1 mg/m ³ ; Short Term: Ceiling - 2 mg/m ³ Source: Nařízení vlády č. 361-2007 Sb
NATION GERMANY AL	Long Term: 2 mg/m ³ Notes: DFG, EU, AGS, Y, E, 2(I) Source: TRGS 900
NATION DENMARK AL	Long Term: 1 mg/m ³ Notes: E Source: BEK nr 2203 af 29/11/2021
NATION SPAIN AL	Long Term: 1 mg/m ³ ; Short Term: 2 mg/m ³ Notes: VLI, s Source: LEP 2022
NATION ESTONIA AL	Long Term: 1 mg/m ³ ; Short Term: 2 mg/m ³ Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
NATION FINLAND AL	Long Term: 1 mg/m ³ ; Short Term: 2 mg/m ³ Source: HTP-ARVOT 2020
NATION FRANCE AL	Long Term: 1 mg/m ³ - 0.2 ppm; Short Term: 2 mg/m ³ - 0.5 ppm Source: INRS outil65, arrêté du 30-06-2004 modifié
NATION GREECE AL	Long Term: 1 mg/m ³ ; Short Term: 3 mg/m ³ Source: ΦΕΚ 94/Α` 13.5.1999
NATION CROATIA AL	Long Term: 1 mg/m ³ ; Short Term: 2 mg/m ³ Source: 2000/39/EZ
NATION HUNGARY AL	Long Term: 1 mg/m ³ ; Short Term: 2 mg/m ³ Notes: m, EU1, N Source: 5/2020. (II. 6.) ITM rendelet
NATION IRELAND AL	Long Term: 1 mg/m ³ ; Short Term: 2 mg/m ³ Notes: IOELV Source: 2021 Code of Practice
NATION ITALY AL	Long Term: 1 mg/m ³ ; Short Term: 2 mg/m ³ Source: D.lgs. 81/2008, Allegato XXXVIII
NATION LITHUANIA AL	Long Term: 1 mg/m ³ ; Short Term: 2 mg/m ³ Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
NATION LUXEMBOUR AL G	Long Term: 1 mg/m ³ ; Short Term: 2 mg/m ³ Source: Mémorial A n.226 du 22 mars 2021
NATION LATVIA AL	Long Term: 1 mg/m ³ ; Short Term: 2 mg/m ³ Source: KN325P1
NATION MALTA AL	Long Term: 1 mg/m ³ ; Short Term: 2 mg/m ³ Source: S.L.424.24
NATION NETHERLAND AL S	Long Term: 1 mg/m ³ ; Short Term: 2 mg/m ³ Source: Arbeidsomstandighedenregeling - Lijst A
NATION NORWAY AL	Long Term: 1 mg/m ³ Notes: E Source: FOR-2021-06-28-2248
NATION POLAND AL	Long Term: 1 mg/m ³ ; Short Term: 2 mg/m ³ Source: Dz.U. 2018 poz. 1286
NATION PORTUGAL AL	Long Term: 1 mg/m ³ ; Short Term: 2 mg/m ³ Source: Decreto-Lei n.º 1/2021
NATION ROMANIA AL	Long Term: 1 mg/m ³ ; Short Term: 2 mg/m ³ Notes: Dir. 2000/39 Source: Republicarea 1 - nr. 743 din 29 iulie 2021
NATION SLOVAKIA AL	Long Term: 1 mg/m ³ ; Short Term: 2 mg/m ³ Source: 355 NARIADENIE VLÁDY z 10. mája 2006
NATION SLOVENIA AL	Long Term: 1 mg/m ³ ; Short Term: 2 mg/m ³ Notes: Y, EU1, (I) Source: UL št. 72, 11. 5. 2021

maleic anhydride CAS: 108-31-6	NATION SWEDEN AL	Long Term: 1 mg/m ³ ; Short Term: 2 mg/m ³ Source: AFS 2021:3
	WEL- UNITED EH40 KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 1 mg/m ³ ; Short Term: 2 mg/m ³ Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
	SUVA SWITZERLAN D	Long Term: 2 mg/m ³ ; Short Term: 4 mg/m ³ Notes: TWA mg/m ³ : (i), SSC, Poumons VRS Peau Yeux / Lunge OAW Haut Auge, NIOSH OSHA Source: suva.ch/valeurs-limites
	ACGIH	Long Term: 0.01 mg/m ³ (8h) Notes: IFV, DSEN, RSEN, A4 - Resp sens
	NATION AUSTRIA AL	Long Term: 0.4 mg/m ³ - 0.1 ppm; Short Term: Ceiling - 0.8 mg/m ³ - 0.2 ppm Notes: 5(Mow), 8x, MAK, Sah Source: BGBl. II Nr. 156/2021
	NATION BELGIUM AL	Long Term: 0.01 mg/m ³ - 0.003 ppm Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
	NATION BULGARIA AL	Long Term: 1 mg/m ³ Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
	NATION CZECHIA AL	Long Term: 1 mg/m ³ ; Short Term: Ceiling - 2 mg/m ³ Notes: I, S Source: Nařízení vlády č. 361-2007 Sb
	NATION GERMANY AL	Long Term: 0.081 mg/m ³ - 0.02 ppm Notes: DFG, Sah, Y, 11, 1;=2, 5=(I) Source: TRGS 900
	NATION DENMARK AL	Long Term: 0.4 mg/m ³ - 0.1 ppm Source: BEK nr 2203 af 29/11/2021
	NATION SPAIN AL	Long Term: 0.4 mg/m ³ - 0.1 ppm Notes: FIV, Sen Source: LEP 2022
	NATION ESTONIA AL	Long Term: 1.2 mg/m ³ - 0.3 ppm; Short Term: 2.5 mg/m ³ - 0.6 ppm Notes: S Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
	NATION FINLAND AL	Long Term: 0.41 mg/m ³ - 0.1 ppm; Short Term: Ceiling - 0.81 mg/m ³ - 0.2 ppm Notes: kattoarvo Source: HTP-ARVOT 2020
	NATION FRANCE AL	Short Term: 1 mg/m ³ Notes: Risque d'allergie Source: INRS outil65
	NATION GREECE AL	Long Term: 1 mg/m ³ - 0.25 ppm Source: ΦΕΚ 94/Α` 13.5.1999
	NATION CROATIA AL	Long Term: 0.41 mg/m ³ - 0.1 ppm; Short Term: 0.8 mg/m ³ - 0.2 ppm Notes: alergen (koža i udisanje) Source: NN 1/2021
	NATION HUNGARY AL	Long Term: 0.08 mg/m ³ ; Short Term: 0.08 mg/m ³ Notes: m, sz, R+T Source: 5/2020. (II. 6.) ITM rendelet
	NATION IRELAND AL	Long Term: 0.01 ppm Notes: Sens., IFV Source: 2021 Code of Practice
	NATION LITHUANIA AL	Long Term: 1.2 mg/m ³ - 0.3 ppm; Short Term: 2.5 mg/m ³ - 0.6 ppm Notes: J Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
	NATION LATVIA AL	Long Term: 1 mg/m ³ Source: KN325P1
	NATION NORWAY AL	Long Term: 0.8 mg/m ³ - 0.2 ppm Notes: A

Source: FOR-2021-06-28-2248

NATION POLAND AL	Long Term: 0.5 mg/m ³ ; Short Term: 1 mg/m ³ Notes: skóra Source: Dz.U. 2018 poz. 1286
NATION ROMANIA AL	Long Term: 1 mg/m ³ - 0.25 ppm; Short Term: 3 mg/m ³ - 0.75 ppm Source: Republicarea 1 - nr. 743 din 29 iulie 2021
NATION SLOVAKIA AL	Long Term: 0.41 mg/m ³ - 0.1 ppm Notes: S Source: 355 NARIADENIE VLÁDY z 10. mája 2006
NATION SLOVENIA AL	Long Term: 0.41 mg/m ³ - 0.1 ppm; Short Term: 0.41 mg/m ³ - 0.1 ppm Notes: Y Source: UL št. 72, 11. 5. 2021
NATION SWEDEN AL	Long Term: 0.2 mg/m ³ - 0.05 ppm; Short Term: 0.4 mg/m ³ - 0.1 ppm Notes: M, S Source: AFS 2021:3
WEL- EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND Long Term: 1 mg/m ³ ; Short Term: 3 mg/m ³ Notes: Sen Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
SUVA	SWITZERLAND Long Term: 0.4 mg/m ³ - 0.1 ppm; Short Term: 0.4 mg/m ³ - 0.1 ppm Notes: S, SSC, VR / AW, NIOSH OSHA, La substance peut être présente sous forme de vapeur et d'aérosol en même temps / Der Stoff kann gleichzeitig als Dampf und Aerosol vorliegen Source: suva.ch/valeurs-limites

Biological limit values

xylene

CAS: 1330-20-7 Biological Indicator: Methyl hippuric acid in urine; Sampling Period: End of turn
Value: 2000 mg/L; Medium: Urine

Predicted No Effect Concentration (PNEC) values

2-methoxy-1-methylethyl acetate

CAS: 108-65-6 Exposure Route: Fresh Water; PNEC Limit: 635 mg/m³
Exposure Route: Intermittent releases (fresh water); PNEC Limit: 6.35 mg/l
Exposure Route: Marine water; PNEC Limit: 63.5 mg/m³
Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 100 mg/l
Exposure Route: Freshwater sediments; PNEC Limit: 3.29 mg/kg
Exposure Route: Marine water sediments; PNEC Limit: 329 µg/kg
Exposure Route: Soil; PNEC Limit: 290 µg/kg

n-butyl acetate

CAS: 123-86-4 Exposure Route: Fresh Water; PNEC Limit: 180 mg/m³
Exposure Route: Intermittent releases (fresh water); PNEC Limit: 360 mg/m³
Exposure Route: Marine water; PNEC Limit: 18 mg/m³
Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 35.6 mg/l
Exposure Route: Freshwater sediments; PNEC Limit: 981 µg/kg
Exposure Route: Marine water sediments; PNEC Limit: 98.1 µg/kg
Exposure Route: Soil; PNEC Limit: 90.3 µg/kg

xylene

CAS: 1330-20-7 Exposure Route: Fresh Water; PNEC Limit: 327 mg/m³
Exposure Route: Intermittent releases (fresh water); PNEC Limit: 327 mg/m³
Exposure Route: Marine water; PNEC Limit: 327 mg/m³
Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 6.58 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

4-morpholinecarbaldehyde

CAS: 4394-85-8 Exposure Route: Fresh Water; PNEC Limit: 500 mg/m3
Exposure Route: Intermittent releases (fresh water); PNEC Limit: 5 mg/l
Exposure Route: Marine water; PNEC Limit: 50 mg/m3
Exposure Route: Marine water; PNEC Limit: 2000 mg/l
Exposure Route: Freshwater sediments; PNEC Limit: 2.69 mg/kg
Exposure Route: Marine water sediments; PNEC Limit: 269 µg/kg
Exposure Route: Soil; PNEC Limit: 244 µg/kg

maleic anhydride

CAS: 108-31-6 Exposure Route: Fresh Water; PNEC Limit: 87.5 mg/m3
Exposure Route: Intermittent releases (fresh water); PNEC Limit: 589.5 mg/m3
Exposure Route: Marine water; PNEC Limit: 8.75 mg/m3
Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 24.53 mg/l
Exposure Route: Freshwater sediments; PNEC Limit: 197 µg/kg
Exposure Route: Marine water sediments; PNEC Limit: 19.7 µg/kg
Exposure Route: Soil; PNEC Limit: 25.75 µg/kg
Exposure Route: Secondary poisoning; PNEC Limit: 6.67 mg/kg

Derived No Effect Level (DNEL) values

2-methoxy-1-methylethyl acetate

CAS: 108-65-6 Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects
Worker Professional: 275 mg/kg/day; Consumer: 33 mg/kg/day

Exposure Route: Human Inhalation; Exposure Frequency: Short Term, systemic effects
Worker Professional: 550 mg/kg/day

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects
Consumer: 33 mg/kg/day

Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects
Worker Professional: 796 mg/kg; Consumer: 320 mg/kg

Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects
Consumer: 36 mg/kg

n-butyl acetate

CAS: 123-86-4 Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects
Worker Professional: 48 mg/kg/day; Consumer: 12 mg/kg/day

Exposure Route: Human Inhalation; Exposure Frequency: Short Term, systemic effects
Worker Professional: 600 mg/kg/day; Consumer: 300 mg/kg/day

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects
Worker Professional: 300 mg/kg/day; Consumer: 35.7 mg/kg/day

Exposure Route: Human Inhalation; Exposure Frequency: Short Term, local effects
Worker Professional: 600 mg/kg/day; Consumer: 300 mg/kg/day

Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects
Worker Professional: 7 mg/kg; Consumer: 3.4 mg/kg

Exposure Route: Human Dermal; Exposure Frequency: Short Term, systemic effects
Worker Professional: 11 mg/kg; Consumer: 6 mg/kg

Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects
Consumer: 2 mg/kg

Exposure Route: Human Oral; Exposure Frequency: Short Term, systemic effects
Consumer: 2 mg/kg

xylene

CAS: 1330-20-7 Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects
Worker Professional: 221 mg/kg/day; Consumer: 65.3 mg/kg/day

Exposure Route: Human Inhalation; Exposure Frequency: Short Term, systemic effects
Worker Professional: 442 mg/kg/day; Consumer: 260 mg/kg/day

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects
Worker Professional: 221 mg/kg/day; Consumer: 65.3 mg/kg/day

Exposure Route: Human Inhalation; Exposure Frequency: Short Term, local effects

Worker Professional: 442 mg/kg/day; Consumer: 260 mg/kg/day

Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects
Worker Professional: 212 mg/kg; Consumer: 125 mg/kg

Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects
Consumer: 12.5 mg/kg

4-morpholinecarbaldehyde

CAS: 4394-85-8 Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects
Worker Professional: 98 mg/kg/day; Consumer: 29 mg/kg/day

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects
Worker Professional: 1.7 mg/kg/day; Consumer: 840 µg/m³

Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects
Worker Professional: 14 mg/kg; Consumer: 8 mg/kg

Exposure Route: Human Dermal; Exposure Frequency: Long Term, local effects
Worker Professional: 0.293 mg/cm²; Consumer: 176 mg/cm²

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

phosphoric acid

CAS: 7664-38-2 Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects
Worker Professional: 10.7 mg/kg/day; Consumer: 4.57 mg/kg/day

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects
Worker Professional: 1 mg/kg/day; Consumer: 360 µg/m³

Exposure Route: Human Inhalation; Exposure Frequency: Short Term, local effects
Worker Professional: 2 mg/kg/day

Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects
Consumer: 100 µg/kg

maleic anhydride

CAS: 108-31-6 Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects
Worker Professional: 190 µg/m³; Consumer: 50 µg/m³

Exposure Route: Human Inhalation; Exposure Frequency: Short Term, systemic effects
Worker Professional: 800 µg/m³

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects
Worker Professional: 320 µg/m³; Consumer: 80 µg/m³

Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects
Worker Professional: 200 µg/kg; Consumer: 100 µg/kg

Exposure Route: Human Dermal; Exposure Frequency: Short Term, systemic effects
Worker Professional: 200 µg/kg; Consumer: 100 µg/kg

Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects
Consumer: 60 µg/kg

Exposure Route: Human Oral; Exposure Frequency: Short Term, systemic effects
Consumer: 100 µg/kg

8.2. Exposure controls

Eye protection:

Eye glasses with side protection.(EN166)

Protection for skin:

Chemical protection clothing. Safety shoes.

Protection for hands:

Protection for hands:

Suitable materials for safety gloves; BS EN 16523-1:2015+A1:2018: Level 6.

Butyl rubber - BR: thickness ≥0.40mm; breakthrough time ≥480min.

Nitrile rubber - NBR: thickness ≥0.40mm; breakthrough time ≥480min.

Respiratory protection:

N.A.

Thermal Hazards:

Wear appropriate thermal protective clothing, when necessary.

Environmental exposure controls:

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	Liquid
Colour:	In compliance with the product description
Odour:	Characteristic
pH:	Not Relevant Notes: Not applicable, non-aqueous mixture
Kinematic viscosity:	N.A.
Melting point/freezing point:	N.A.
Boiling point or initial boiling point and boiling range:	N.A.
Flash point:	24 °C (75 °F)
Lower and upper explosion limit:	N.A.
Relative vapour density:	N.A.
Vapour pressure:	N.A.
Density and/or relative density:	1.35 g/cm ³
Solubility in water:	Immiscible
Solubility in oil:	Not Relevant Notes: Not determined, as it is not required for CLP classification
Partition coefficient n-octanol/water (log value):	Not Relevant Notes: Not applicable to mixtures
Auto-ignition temperature:	N.A.
Decomposition temperature:	N.A.
Flammability:	The product is classified Flam. Liq. 3
Volatile Organic compounds - VOCs =	17.43%; 235.33g/L
Particle characteristics:	
Particle size:	N.A.

9.2. Other information

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 oxidizing 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
b) skin corrosion/irritation	Not classified Based on available data, the classification criteria are not met
c) serious eye damage/irritation	Not classified Based on available data, the classification criteria are not met
d) respiratory or skin sensitisation	The product is classified: Skin Sens. 1A(H317)
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	Not classified Based on available data, the classification criteria are not met
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:

2-methoxy-1-methylethyl acetate

CAS: 108-65-6	a) acute toxicity	LD50 Oral Rat = 6190 mg/kg LD50 Skin Rabbit > 5000 mg/kg 24h
	b) skin corrosion/irritation	Skin Irritant Rabbit Negative 4h
	c) serious eye damage/irritation	Eye Irritant Rabbit No
	d) respiratory or skin sensitisation	Skin Sensitization Guineapig Negative
	g) reproductive toxicity	No Observed Effect Level Rat = 3.69 mg/l

n-butyl acetate

CAS: 123-86-4	a) acute toxicity	LD50 Oral Rat = 10760 mg/kg LC50 Inhalation of aerosol Rat = 0.74 mg/l 4h LD50 Skin Rabbit > 16 ml/Kg 24h
	b) skin corrosion/irritation	Skin Irritant Rabbit Negative
	c) serious eye damage/irritation	Eye Irritant Rabbit No
	d) respiratory or skin sensitisation	Skin Sensitization Negative
	f) carcinogenicity	Genotoxicity Negative
	g) reproductive toxicity	No Observed Adverse Effect Level Inhalation Rat = 750

xylene

CAS: 1330-20-7	a) acute toxicity	LD50 Oral Rat = 3523 ml/Kg LC50 Inhalation Vapour Rat = 29000 mg/m3 4h LD50 Skin Rabbit = 12126 mg/kg 24h
	b) skin corrosion/irritation	Skin Corrosive Rabbit Negative 4h
	c) serious eye damage/irritation	Eye Irritant Rabbit Yes 1h
	f) carcinogenicity	Genotoxicity Negative
	g) reproductive toxicity	No Observed Adverse Effect Level Inhalation Rat = 2171 mg/kg

4-morpholinecarbaldehyde

CAS: 4394-85-8	a) acute toxicity	LD50 Oral Rat > 7360 mg/kg LC50 Inhalation of aerosol Rat > 5.3 mg/l 4h
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		LD50 Skin Rabbit > 18400 mg/kg 24h
	b) skin corrosion/irritation	Skin Irritant Rabbit Negative
	c) serious eye damage/irritation	Eye Irritant Rabbit No
	d) respiratory or skin sensitisation	Skin Sensitization Positive
	g) reproductive toxicity	No Observed Adverse Effect Level Oral Rat = 1000 mg/kg
phosphoric acid		
CAS: 7664-38-2	a) acute toxicity	LD50 Oral Rat = 2600 mg/kg LC50 Inhalation Rat = 3846 mg/m3 1h
	b) skin corrosion/irritation	Skin Corrosive Rabbit Positive
	c) serious eye damage/irritation	Eye Irritant Rabbit Yes
	g) reproductive toxicity	No Observed Adverse Effect Level Oral Rat >= 500 mg/kg
maleic anhydride		
CAS: 108-31-6	a) acute toxicity	LD50 Oral Rat = 1090 mg/kg LC50 Inhalation Rat > 4.35 mg/l 1h LD50 Skin Rabbit = 2620 mg/kg
	b) skin corrosion/irritation	Skin Corrosive Rabbit Positive 4h
	c) serious eye damage/irritation	Eye Corrosive Rabbit Positive
	d) respiratory or skin sensitisation	Skin Sensitization Positive
		Respiratory Sensitization Rat Positive
	f) carcinogenicity	Genotoxicity Rat Negative 6h Carcinogenicity Negative
	g) reproductive toxicity	No Observed Adverse Effect Level Oral Rat = 55 mg/kg

11.2. Information on other hazards

Endocrine disrupting properties:

No endocrine disruptor substances present in concentration >= 0.1%

SECTION 12: Ecological information

12.1. Toxicity

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

Eco-Toxicological Information:

List of Eco-Toxicological properties of the product

Not classified for environmental hazards.

No data available for the product

List of Eco-Toxicological properties of the components

2-methoxy-1-methylethyl acetate

- CAS: 108-65-6
- a) Aquatic acute toxicity: LC50 Fish Oncorhynchus mykiss = 130 mg/L 96h
 - b) Aquatic chronic toxicity: NOEC Fish Oryzias latipes = 47.5 mg/L
 - a) Aquatic acute toxicity: LC50 Daphnia Daphnia magna = 408 mg/L 48h
 - b) Aquatic chronic toxicity: NOEC Daphnia Daphnia magna > 100 mg/L
 - a) Aquatic acute toxicity: NOEC Algae Selenastrum capricornutum >= 1000 mg/L

n-butyl acetate

- CAS: 123-86-4
- a) Aquatic acute toxicity: LC50 Fish Pimephales promelas = 18 mg/L 96h
 - a) Aquatic acute toxicity: LC50 Daphnia Daphnia magna = 44 mg/L 48h
 - b) Aquatic chronic toxicity: NOEC Daphnia Daphnia magna = 23 mg/L
 - a) Aquatic acute toxicity: EC50 Algae Desmodesmus subspicatus = 397 mg/L 72h
 - a) Aquatic acute toxicity: EC50 Tetrahymena pyriformis = 356 mg/L

xylene

- CAS: 1330-20-7
- a) Aquatic acute toxicity: LC50 Fish freshwater fish = 2.6 mg/L 96h

- b) Aquatic chronic toxicity: NOEC Fish freshwater fish = 1.3 mg/L
- a) Aquatic acute toxicity: LC50 Daphnia Daphnia magna = 1 mg/L 24h
- b) Aquatic chronic toxicity: NOEC Daphnia Ceriodaphnia dubia = 0.96 mg/L
- a) Aquatic acute toxicity: EC50 Algae freshwater algae = 1.3 mg/L 48h
- a) Aquatic acute toxicity: EC50 microorganisms = 96 mg/L
- d) Terrestrial toxicity: NOEC Worm earthworms = 16 mg/kg
- e) Plant toxicity: LC50 terrestrial plants = 1 mg/kg

4-morpholinecarbaldehyde

- CAS: 4394-85-8
- a) Aquatic acute toxicity: LC50 Fish Leuciscus idus > 500 mg/L 96h
 - a) Aquatic acute toxicity: EC50 Daphnia Daphnia magna > 500 mg/L 48h
 - a) Aquatic acute toxicity: EC50 Algae German Industrial Standard guideline DIN 38412, part 9 = 23.8 g/L 72h
 - c) Bacteria toxicity: EC10 Pseudomonas putida > 2000 mg/L

phosphoric acid

- CAS: 7664-38-2
- a) Aquatic acute toxicity: LC50 Daphnia Daphnia magna > 100 mg/L 48h
 - a) Aquatic acute toxicity: EC50 Algae Desmodesmus subspicatus > 100 mg/L 72h
 - a) Aquatic acute toxicity: EC50 Sludge activated sludge > 1000 mg/L 3h

maleic anhydride

- CAS: 108-31-6
- a) Aquatic acute toxicity: LC50 Fish rainbow trout = 75 mg/L 96h
 - a) Aquatic acute toxicity: LC50 Daphnia Daphnia magna = 42.81 mg/L 48h
 - b) Aquatic chronic toxicity: NOEC Daphnia Daphnia magna = 10 mg/L
 - a) Aquatic acute toxicity: EC50 Algae Pseudokirchneriella subcapitata = 74.32 mg/L
 - a) Aquatic acute toxicity: NOEC Sludge activated sludge = 44.6 mg/L

12.2. Persistence and degradability

2-methoxy-1-methylethyl acetate

CAS: 108-65-6 Readily biodegradable Test: Dissolved organic carbon
Notes: OECD GL 301E

n-butyl acetate

CAS: 123-86-4 Readily biodegradable Value: 83
Notes: %; OECD 301 D

xylene

CAS: 1330-20-7 Readily biodegradable

4-morpholinecarbaldehyde

CAS: 4394-85-8 Readily biodegradable Test: Dissolved organic carbon; Value: 96
Notes: %; OECD 301 A

maleic anhydride

CAS: 108-31-6 Readily biodegradable Value: 90
Notes: 28days

12.3. Bioaccumulative potential

n-butyl acetate

CAS: 123-86-4 Bioaccumulative Test: BCF - Bioconcentration factor

xylene

CAS: 1330-20-7 Bioaccumulative Test: BCF - Bioconcentration factor; Value: 25.9

4-morpholinecarbaldehyde

CAS: 4394-85-8 Bioaccumulative Test: BCF - Bioconcentration factor; Value: 1.9

12.4. Mobility in soil

N.A.

12.5. Results of PBT and vPvB assessment

No PBT or vPvB substances present in concentration $\geq 0.1\%$

12.6. Endocrine disrupting properties

No endocrine disruptor substances present in concentration $\geq 0.1\%$

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.

The product disposed of as such, pursuant to Regulation (EU) 1357/2014, must be classified as hazardous waste

A waste code according to the European List of Wastes (LoW) cannot be specified, due to dependence on the usage. Contact an authorized waste disposal service.

Properties of waste which render it hazardous (Annex III, Directive 2008/98/EC):

N.A.

SECTION 14: Transport information

14.1. UN number or ID number

1263

14.2. UN proper shipping name

ADR-Shipping Name: PAINT

IATA-Shipping Name: PAINT

IMDG-Shipping 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

Marine pollutant: No

Environmental Pollutant: No

IMDG-EMS: F-E, S-E

14.6. Special precautions for user

Road and Rail (ADR-RID):

ADR-Label: 3

ADR - Hazard identification number: -

ADR-Special Provisions: 163 367 650

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

ADR Limited Quantities: 5 L

ADR Excepted Quantities: E1

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 and handling: Category A

IMDG-Segregation: -

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 (EU) n. 2020/878

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

Regulation (EU) n. 286/2011 (ATP 2 CLP)

Regulation (EU) n. 487/2013 (ATP 4 CLP)

Regulation (EU) n. 605/2014 (ATP 6 CLP)

Regulation (EU) n. 2016/918 (ATP 8 CLP)

Regulation (EU) n. 2017/776 (ATP 10 CLP)

Regulation (EU) n. 2018/1480 (ATP 13 CLP)

Regulation (EU) n. 2020/217 (ATP 14 CLP)

Regulation (EU) n. 2021/643 (ATP 16 CLP)

Regulation (EU) n. 2022/692 (ATP 18 CLP)

Regulation (EU) n. 2023/1434 (ATP 19 CLP)

Regulation (EU) n. 2024/197 (ATP 21 CLP)

Regulation (EU) n. 2024/2865
- Regulation (EC) n. 790/2009 (ATP 1 CLP) and (EU) n. 758/2013

Regulation (EU) n. 618/2012 (ATP 3 CLP)

Regulation (EU) n. 944/2013 (ATP 5 CLP)

Regulation (EU) n. 2015/1221 (ATP 7 CLP)

Regulation (EU) n. 2016/1179 (ATP 9 CLP)

Regulation (EU) n. 2018/669 (ATP 11 CLP)

Regulation (EU) n. 2019/521 (ATP 12 CLP)

Regulation (EU) n. 2020/1182 (ATP 15 CLP)

Regulation (EU) n. 2021/849 (ATP 17 CLP)

Regulation (EU) n. 2023/707

Regulation (EU) n. 2023/1435 (ATP 20 CLP)

Regulation (EU) n. 2024/2564 (ATP 22 CLP)

Regulation (EU) n. 2025/1222 (ATP 23 CLP)

Regulation (EC) nr 648/2004 (Detergents).

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: 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

Explosives precursors – Regulation 2019/1148

No substances listed

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

No substances listed

German Water Hazard Class.

NWG: Not hazardous for water

German Lagerklasse according to TRGS 510:

LGK 3

SVHC Substances:

No SVHC substances present in concentration >= 0.1%

Dir. 2004/42/EC (VOC directive)

(ready to use)

- Volatile Organic compounds - VOCs = 23.81 %
- Volatile Organic compounds - VOCs = 321.47 g/L

FACTORY COLOR PU-S (A) (not ready to use)

- Volatile Organic compounds - VOCs = 17.43 %
- Volatile Organic compounds - VOCs = 235.33 g/L

15.2. Chemical safety assessment

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

Substances for which a Chemical Safety Assessment has been carried out:

- 2-methoxy-1-methylethyl acetate
- n-butyl acetate

SECTION 16: Other information

Code	Description
EUH066	Repeated exposure may cause skin dryness or cracking.
EUH071	Corrosive to the respiratory tract.
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.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H361	Suspected of damaging fertility or the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure if inhaled.
H373	May cause damage to organs through prolonged or repeated exposure.
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
2.6/3	Flam. Liq. 3	Flammable liquid, 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
3.4.1/1	Resp. Sens. 1	Respiratory Sensitisation, Category 1
3.4.2/1A	Skin Sens. 1A	Skin Sensitisation, Category 1A
3.4.2/1B	Skin Sens. 1B	Skin Sensitisation, Category 1B
3.7/2	Repr. 2	Reproductive toxicity, Category 2
3.8/3	STOT SE 3	Specific target organ toxicity — single exposure, Category 3
3.9/1	STOT RE 1	Specific target organ toxicity — repeated exposure, Category 1
3.9/2	STOT RE 2	Specific target organ toxicity — repeated exposure, 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
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Flam. Liq. 3, H226	On basis of test data
Skin Sens. 1A, H317	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

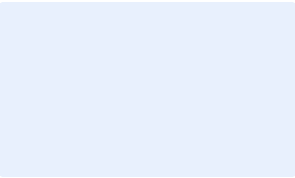
BOD: Biochemical Oxygen Demand

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: Keep Away From Heat
 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:

- Safety Data Sheet
- 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 7: Handling and storage
- SECTION 8: Exposure controls/personal protection
- SECTION 9: Physical and chemical properties
- SECTION 11: Toxicological information
- SECTION 12: Ecological information

- SECTION 13: Disposal considerations
- SECTION 14: Transport information
- SECTION 15: Regulatory information
- SECTION 16: Other information



Exposure Scenario

2-methoxy-1-methylethyl acetate

Exposure Scenario, 08/06/2021

Substance identity	
	2-methoxy-1-methylethyl acetate
CAS No.	108-65-6
INDEX No.	607-195-00-7
EINECS No.	203-603-9
Registration number	01-2119475791-29

Table of contents

1. ES 1

1. ES 1

1.1 TITLE SECTION

Exposure Scenario name	Professional application of coatings and inks by brush or roller
Date - Version	29/04/2021 - 1.0
Main user group	Professional uses
Sector(s) of use	Professional uses (SU22)
Product Categories	Coatings and paints, thinners, paint removers (PC9a)

Environment Contributing Scenario

CS1	ERC8a - ERC8d
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Worker Contributing Scenario

CS2 Large surfaces - Rolling, Brushing	PROC10
--	--------

1.2 Conditions of use affecting exposure

1.2. CS1: Environment Contributing Scenario (ERC8a, ERC8d)

Environmental release categories	Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) - Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) (ERC8a, ERC8d)
----------------------------------	---

Product (article) characteristics

Physical form of product:

Liquid

Concentration of substance in product:

Covers concentrations up to 100 %

Amount used, frequency and duration of use (or from service life)

Amounts used:

Daily amount per site = 5000 kg

Release type: Continuous release

Emission days: 365 days per year

Conditions and measures related to sewage treatment plant

STP type:

Municipal Sewage Treatment Plant

Water - minimum efficiency of: = 87.3 %

Conditions and measures related to treatment of waste (including article waste)

Waste treatment

Contain and dispose of waste according to local regulations.

Other conditions affecting environmental exposure

Local marine water dilution factor: 100

Local freshwater dilution factor: 10

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.

Additional Good Practice Advice:

Site should have a spill plan to ensure that adequate safeguards are in place to minimize the impact of episodic releases.

1.2. CS2: Worker Contributing Scenario: Large surfaces - Rolling, Brushing (PROC10)

Process Categories	Roller application or brushing (PROC10)
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Product (article) characteristics

Physical form of product:

Liquid

Concentration of substance in product:

Covers concentrations up to 100 %

Amount used, frequency and duration of use/exposure**Amounts used:**

Daily amount per site = 5000 kg

Duration:

Exposure duration = 8 h/day

Frequency:

Use frequency = 365 days per year

Technical and organisational conditions and measures**Technical and organisational measures**

Ensure control measures are regularly inspected and maintained.

Carry out in a vented booth or extracted enclosure.

Conditions and measures related to personal protection, hygiene and health evaluation**Personal protection**

Wear a respirator conforming to EN140.

Other conditions affecting worker exposure

Covers indoor and outdoor use

Temperature: Assumes use at not more than 20 °C above ambient temperature.

1.3 Exposure estimation and reference to its source

1.3. CS1: Environment Contributing Scenario (ERC8a, ERC8d)

protection target	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
freshwater	= 0.003 mg/L	ECETOC TRA environment v3	= 0.004
freshwater sediment	= 0.014 mg/kg KW	ECETOC TRA environment v3	= 0.004
marine water	= 0.0004 mg/L	ECETOC TRA environment v3	= 0.007
marine sediment	= 0.002 mg/kg KW	ECETOC TRA environment v3	= 0.007
soil	= 0.001 mg/kg KW	ECETOC TRA environment v3	= 0.004

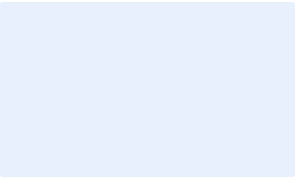
1.3. CS2: Worker Contributing Scenario: Large surfaces - Rolling, Brushing (PROC10)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	= 137.71 mg/m ³	ECETOC TRA worker v3	= 0.5
dermal, systemic, long-term	= 13.71 mg/kg bw/day	ECETOC TRA worker v3	0.18

1.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Guidance to check compliance with the exposure scenario:

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.



Exposure Scenario

N-butyl acetate

Exposure Scenario, 13/07/2021

Substance identity	
	N-butyl acetate
CAS No.	123-86-4
INDEX No.	607-025-00-1
EINECS No.	204-658-1
Registration number	01-2119485493-29

Table of contents

1. **ES 1** Widespread use by professional workers; Coatings and paints, thinners, paint removers (PC9a)

1. ES 1		Widespread use by professional workers; Coatings and paints, thinners, paint removers (PC9a)	
1.1 TITLE SECTION			
Exposure Scenario name	Professional application of coatings and inks		
Date - Version	14/05/2021 - 1.0		
Life Cycle Stage	Widespread use by professional workers		
Main user group	Professional uses		
Sector(s) of use	Professional uses (SU22)		
Product Categories	Coatings and paints, thinners, paint removers (PC9a)		
Environment Contributing Scenario			
CS1	ERC8a		
Worker Contributing Scenario			
CS2 Equipment cleaning and maintenance - Roller, spreader, flow application	PROC11		
CS3 Equipment cleaning and maintenance - Rolling, Brushing - Material transfers	PROC8a - PROC10		
1.2 Conditions of use affecting exposure			
1.2. CS1: Environment Contributing Scenario (ERC8a)			
Environmental release categories	Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) (ERC8a)		
<i>Product (article) characteristics</i>			
Physical form of product: Liquid			
Concentration of substance in product: Covers percentage substance in the product up to 100 %.			
<i>Amount used, frequency and duration of use (or from service life)</i>			
Amounts used: Application rate = 4000 t(tonnes)/year			
<i>Conditions and measures related to sewage treatment plant</i>			
STP type: Municipal Sewage Treatment Plant Water - minimum efficiency of: = 89.1 %			
<i>Other conditions affecting environmental exposure</i>			
Local marine water dilution factor: 100 Local freshwater dilution factor: 10 Receiving surface water flow: 18000 m ³ /day Covers indoor and outdoor use			
1.2. CS2: Worker Contributing Scenario: Equipment cleaning and maintenance - Roller, spreader, flow application (PROC11)			
Process Categories	Non industrial spraying (PROC11)		
<i>Product (article) characteristics</i>			
Physical form of product: Liquid			
Vapour pressure: < 10000 Pa			

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure**Duration:**

Covers daily exposures up to 8 hours

Technical and organisational conditions and measures**Technical and organisational measures**

Closed systems

Open systems

Other conditions affecting worker exposure

Temperature: Assumes use at not more than 20 °C above ambient temperature.

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.

Additional Good Practice Advice:

Wear suitable respiratory protection.

1.2. CS3: Worker Contributing Scenario: Equipment cleaning and maintenance - Rolling, Brushing - Material transfers (PROC8a, PROC10)**Process Categories**

Transfer of substance or mixture (charging and discharging) at non-dedicated facilities -
Roller application or brushing (PROC8a, PROC10)

Product (article) characteristics**Physical form of product:**

Liquid

Vapour pressure:

< 10000 Pa

Concentration of substance in product:

Covers percentage substance in the product up to 25 %.

Amount used, frequency and duration of use/exposure**Duration:**

Covers daily exposures up to 8 hours

Technical and organisational conditions and measures**Technical and organisational measures**

Closed systems

Open systems

Other conditions affecting worker exposure

Temperature: Assumes use at not more than 20 °C above ambient temperature.

1.3 Exposure estimation and reference to its source**1.3. CS1: Environment Contributing Scenario (ERC8a)**

Release route	Release rate	Release estimation method
N/A	N/A	ESVOC SPERC 8.3b.v1

1.3. CS2: Worker Contributing Scenario: Equipment cleaning and maintenance - Roller, spreader, flow application (PROC11)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, long-term	= 242 mg/m ³	ECETOC TRA worker v3	= 0.504

1.3. CS3: Worker Contributing Scenario: Equipment cleaning and maintenance - Rolling, Brushing - Material transfers (PROC8a, PROC10)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, long-term	= 290.4 mg/m ³	ECETOC TRA worker v3	= 0.605

1.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Guidance to check compliance with the exposure scenario:

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Safety Data Sheet

Conforms to Regulation (EC) No. 1907/2006 (REACH), Article 31, Annex II, as amended by Commission Regulation (EU) 2020/878

FACTORY COLOR PU-S (B)

Date of first edition: 5/10/2021

Safety Data Sheet dated 30/11/2023 version 5

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

1.1. Product identifier

Mixture identification:

Trade name: FACTORY COLOR PU-S (B)

Trade code: 05032021

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

Recommended use: hardener

Uses advised against: All uses other than recommended ones

1.3. Details of the supplier of the safety data sheet

Company: KERAKOLL S.p.A.

Via dell'Artigianato, 9

41049 Sassuolo (MODENA) - ITALY

Tel. +39 0536 816511 Fax. +39 0536816581

safety@kerakoll.com

1.4. Emergency telephone number

European emergency phone number 112

Ireland Emergency medical information: (seven days) contact National Poisons Information Centre, Beaumont Hospital, Dublin 9 DOV2NO, Ireland.

Members of the public Number (8 am-10 pm): +353 (0)1 809 2166

Healthcare professional telephone Number (24hrs): +353 (0)1 809 2566

Malta In case of emergency call: +356 2395 2000 (24h)

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.
Acute Tox. 4	Harmful if inhaled.
Skin Sens. 1	May cause an allergic skin reaction.
STOT SE 3	May cause respiratory irritation.

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.
H317	May cause an allergic skin reaction.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.

Precautionary statements

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
------	--

P260	Do not breathe vapours.
P280	Wear protective gloves and eye/face protection.
P302+P352	IF ON SKIN: Wash with plenty of water.
P370+P378	In case of fire, use a dry powder fire extinguisher to extinguish.
P501	Dispose of contents/container in accordance with applicable regulations.

Special Provisions:

EUH208	Contains 4-isocyanatosulphonyltoluene. May produce an allergic reaction.
--------	--

Contains

Hexamethylene diisocyanate, oligomers

Dir. 2004/42/EC (VOC directive)

- Two-pack reactive performance coatings for specific end use such as floors
- EU limit value for this product (cat. A/j): 500 g/l
- This product contains max 321.47 g/l VOC.

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

As from 24 August 2023 adequate training is required before industrial or professional use.

2.3. Other hazards

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

Other Hazards: No other hazards

SECTION 3: Composition/information on ingredients

3.1. Substances

N.A.

3.2. Mixtures

Mixture identification: FACTORY COLOR PU-S (B)

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

Qty	Name	Ident. Numb.	Classification	Registration Number
≥50-<70 %	Hexamethylene diisocyanate, oligomers	CAS:28182-81-2 EC:500-060-2	Acute Tox. 4, H332; Skin Sens. 1, H317; STOT SE 3, H335	01-2119485796-17
≥10-<20 %	2-methoxy-1-methylethyl acetate	CAS:108-65-6 EC:203-603-9	Flam. Liq. 3, H226; STOT SE 3, H336	01-2119475791-29
≥0.5-<1 %	4-isocyanatosulphonyltoluene	CAS:4083-64-1 EC:223-810-8 Index:615-012-00-7	Eye Irrit. 2, H319; STOT SE 3, H335; Skin Irrit. 2, H315; Resp. Sens. 1, H334, EUH014	01-2119980050-47
Specific Concentration Limits: C ≥ 5%: Eye Irrit. 2 H319 C ≥ 5%: STOT SE 3 H335 C ≥ 5%: Skin Irrit. 2 H315				
≥0.05-<0.1 %	Hexamethylene Diisocynate	CAS:822-06-0 EC:212-485-8	Acute Tox. 1, H330; Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Resp. Sens. 1, H334; Skin Sens. 1, H317; STOT SE 3, H335	01-2119457571-37

SECTION 4: First aid measures

4.1. Description of first aid measures

In case of skin contact:

- Immediately take off all contaminated clothing.
- Remove contaminated clothing immediatley and dispose off safely.

In case of eyes contact:

- Wash immediately with water.

In case of Ingestion:

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

In case of Inhalation:

- If breathing is irregular or stopped, administer artificial respiration.
- In case of inhalation, consult a doctor immediately and show him packing or label.

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

N.A.

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 a dry powder fire extinguisher 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

For non emergency personnel:

Wear personal protection equipment.

Remove all sources of ignition.

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

Provide adequate ventilation.

Use appropriate respiratory protection.

See protective measures under point 7 and 8.

For emergency responders:

Wear personal protection equipment.

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.

Use localized ventilation system.

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.

Contaminated clothing should be changed before entering eating areas.

Do not eat or drink while working.

See also section 8 for recommended protective equipment.

Advice on general occupational hygiene:

7.2. Conditions for safe storage, including any incompatibilities

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

Incompatible materials:

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)

2-methoxy-1-methylethyl acetate

CAS: 108-65-6	EU	Long Term: 275 mg/m ³ - 50 ppm (8h); Short Term: 550 mg/m ³ - 100 ppm Notes: Skin
	NATION AUSTRIA AL	Long Term: 275 mg/m ³ - 50 ppm; Short Term: Ceiling - 550 mg/m ³ - 100 ppm Notes: 5(Mow), 8x, MAK, H Source: BGBl. II Nr. 156/2021
	NATION BELGIUM AL	Long Term: 275 mg/m ³ - 50 ppm; Short Term: 550 mg/m ³ - 100 ppm Notes: D Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
	NATION BULGARIA AL	Long Term: 275 mg/m ³ - 50 ppm; Short Term: 550 mg/m ³ - 100 ppm Notes: Кожа Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
	NATION CYPRUS AL	Long Term: 275 mg/m ³ - 50 ppm; Short Term: 550 mg/m ³ - 100 ppm Notes: δέρμα Source: Οι περί Ασφάλειας και Υγείας στην Εργασία (Χημικοί Παράγοντες) Κανονισμοί του 2001 έως 2021
	NATION CZECHIA AL	Long Term: 270 mg/m ³ ; Short Term: Ceiling - 550 mg/m ³ Notes: D, I Source: Nařízení vlády č. 361-2007 Sb
	NATION GERMANY AL	Long Term: 270 mg/m ³ - 50 ppm Notes: DFG, EU, Y, 1(I) Source: TRGS 900
	NATION DENMARK AL	Long Term: 275 mg/m ³ - 50 ppm Notes: EH Source: BEK nr 2203 af 29/11/2021
	NATION SPAIN AL	Long Term: 275 mg/m ³ - 50 ppm; Short Term: 550 mg/m ³ - 100 ppm Notes: vía dérmica, VLI Source: LEP 2022
	NATION ESTONIA AL	Long Term: 275 mg/m ³ - 50 ppm; Short Term: 550 mg/m ³ - 100 ppm Notes: A, S Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
	NATION FINLAND AL	Long Term: 270 mg/m ³ - 50 ppm; Short Term: 550 mg/m ³ - 100 ppm Notes: iho Source: HTP-ARVOT 2020
	NATION FRANCE AL	Long Term: 275 mg/m ³ - 50 ppm; Short Term: 550 mg/m ³ - 100 ppm Notes: Risque de pénétration percutanée Source: INRS outil65, article R. 4412-149 du Code du travail
	NATION GREECE AL	Long Term: 275 mg/m ³ - 50 ppm; Short Term: 550 mg/m ³ - 100 ppm Notes: Δ Source: ΦΕΚ 94/Α` 13.5.1999
	NATION CROATIA AL	Long Term: 275 mg/m ³ - 50 ppm; Short Term: 550 mg/m ³ - 100 ppm Notes: koža Source: 2000/39/EZ
	NATION HUNGARY AL	Long Term: 275 mg/m ³ ; Short Term: 550 mg/m ³ Notes: EU1, N Source: 5/2020. (II. 6.) ITM rendelet
	NATION IRELAND AL	Long Term: 275 mg/m ³ - 50 ppm; Short Term: 550 mg/m ³ - 100 ppm Notes: Sk, IOELV Source: 2021 Code of Practice
	NATION ITALY AL	Long Term: 275 mg/m ³ - 50 ppm; Short Term: 550 mg/m ³ - 100 ppm Notes: Cute Source: D.lgs. 81/2008, Allegato XXXVIII
	NATION LITHUANIA AL	Long Term: 250 mg/m ³ - 50 ppm; Short Term: 400 mg/m ³ - 75 ppm Notes: O Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389

NATION AL	LUXEMBOURG	Long Term: 275 mg/m3 - 50 ppm; Short Term: 550 mg/m3 - 100 ppm Notes: Peau Source: Mémorial A n.226 du 22 mars 2021
NATION AL	LATVIA	Long Term: 275 mg/m3 - 50 ppm; Short Term: 550 mg/m3 - 100 ppm Notes: Āda Source: KN325P1
NATION AL	MALTA	Long Term: 275 mg/m3 - 50 ppm; Short Term: 550 mg/m3 - 100 ppm Notes: skin Source: S.L.424.24
NATION AL	NETHERLANDS	Long Term: 550 mg/m3 Source: Arbeidsomstandighedenregeling - Lijst A
NATION AL	NORWAY	Long Term: 270 mg/m3 - 50 ppm Notes: H E Source: FOR-2021-06-28-2248
NATION AL	POLAND	Long Term: 260 mg/m3; Short Term: 520 mg/m3 Notes: skóra Source: Dz.U. 2018 poz. 1286
NATION AL	PORTUGAL	Long Term: 275 mg/m3 - 50 ppm; Short Term: 550 mg/m3 - 100 ppm Notes: Cutânea Source: Decreto-Lei n.º 1/2021
NATION AL	ROMANIA	Long Term: 275 mg/m3 - 50 ppm; Short Term: 550 mg/m3 - 100 ppm Notes: P, Dir. 2000/39 Source: Republicarea 1 - nr. 743 din 29 iulie 2021
NATION AL	SLOVAKIA	Long Term: 275 mg/m3 - 50 ppm; Short Term: 550 mg/m3 - 100 ppm Notes: K Source: 355 NARIADENIE VLÁDY z 10. mája 2006
NATION AL	SLOVENIA	Long Term: 275 mg/m3 - 50 ppm; Short Term: 550 mg/m3 - 100 ppm Notes: K, Y, EU1 Source: UL št. 72, 11. 5. 2021
NATION AL	SWEDEN	Long Term: 275 mg/m3 - 50 ppm; Short Term: 550 mg/m3 - 100 ppm Notes: H Source: AFS 2021:3
WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 274 mg/m3 - 50 ppm; Short Term: 548 mg/m3 - 100 ppm Notes: Sk Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
SUVA	SWITZERLAND	Long Term: 275 mg/m3 - 50 ppm; Short Term: 275 mg/m3 - 50 ppm Notes: SSC, VRS / OAW Source: suva.ch/valeurs-limites

Hexamethylene Diisocyanate

CAS: 822-06-0	ACGIH	Long Term: 0.005 ppm (8h) Notes: URT irr, resp sens
	EU	Long Term: 0.006 mg/m3 (8h); Short Term: 0.012 mg/m3 Notes: Skin; Dermal and respiratory sensitisation
NATION AL	AUSTRIA	Long Term: 0.035 mg/m3 - 0.005 ppm; Short Term: Ceiling - 0.035 mg/m3 - 0.005 ppm Notes: Mow, MAK, Sah Source: BGBl. II Nr. 156/2021
NATION AL	BELGIUM	Long Term: 0.034 mg/m3 - 0.005 ppm Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
NATION AL	BULGARIA	Long Term: 0.1 mg/m3 Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
NATION AL	CZECHIA	Long Term: 0.035 mg/m3; Short Term: Ceiling - 0.07 mg/m3 Notes: I, S Source: Nařízení vlády č. 361-2007 Sb
NATION AL	GERMANY	Long Term: 0.035 mg/m3 - 0.005 ppm Notes: DFG, 11, 12, Sa, 1;=2=(I) Source: TRGS 900

NATION DENMARK AL	Long Term: 0.035 mg/m ³ - 0.005 ppm Source: BEK nr 2203 af 29/11/2021
NATION SPAIN AL	Long Term: 0.035 mg/m ³ - 0.005 ppm Notes: Sen Source: LEP 2022
NATION ESTONIA AL	Long Term: 0.03 mg/m ³ - 0.005 ppm; Short Term: 0.07 mg/m ³ - 0.01 ppm Notes: S, * Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
NATION FRANCE AL	Long Term: 0.075 mg/m ³ - 0.01 ppm; Short Term: 0.15 mg/m ³ - 0.02 ppm Notes: Risques d'allergie respiratoire. La VLEP CT est définie sur une période de référence de 5 minute. Source: INRS outil65
NATION HUNGARY AL	Long Term: 0.035 mg/m ³ ; Short Term: 0.035 mg/m ³ Notes: i, sz, T Source: 5/2020. (II. 6.) ITM rendelet
NATION IRELAND AL	Long Term: 0.005 ppm Notes: Sens. Source: 2021 Code of Practice
NATION ITALY AL	Long Term: 1 mg/m ³ (8h) Source: D.Lgs81/2008
NATION LITHUANIA AL	Long Term: 0.03 mg/m ³ - 0.005 ppm; Short Term: Ceiling - 0.07 mg/m ³ - 0.01 ppm Notes: Ū J, Nustatytas 5 min. poveikio trukmės NRD. Tas pats RD, išreikštas ppm, taikomas izocianatams, kurių RD nenustatytas. Ši nuostata taikoma ir dulkių ar lašelių (aerozolių) pavidalo izocianatams, įskaitant prepolimerizuotus izocianatus (aduktus). Tačiau skirtingų medžiagų RD, išreikšti mg/m ³ , yra skirtingi. Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
NATION LATVIA AL	Long Term: 0.05 mg/m ³ Source: KN325P1
NATION NORWAY AL	Long Term: 0.035 mg/m ³ - 0.005 ppm Notes: A 4 Source: FOR-2021-06-28-2248
NATION POLAND AL	Long Term: 0.04 mg/m ³ ; Short Term: 0.08 mg/m ³ Notes: skóra Source: Dz.U. 2018 poz. 1286
NATION ROMANIA AL	Long Term: 0.05 mg/m ³ - 0.007 ppm; Short Term: 1 mg/m ³ - 0.14 ppm Source: Republicarea 1 - nr. 743 din 29 iulie 2021
NATION SLOVAKIA AL	Long Term: 0.035 mg/m ³ - 0.005 ppm Notes: S Source: 355 NARIADENIE VLÁDY z 10. mája 2006
NATION SLOVENIA AL	Long Term: 0.035 mg/m ³ - 0.005 ppm; Short Term: 0.035 mg/m ³ - 0.005 ppm Notes: BAT Source: UL št. 72, 11. 5. 2021
NATION SWEDEN AL	Long Term: 0.02 mg/m ³ - 0.002 ppm; Short Term: 0.03 mg/m ³ - 0.005 ppm Notes: M, S, 2 Source: AFS 2021:3
SUVA SWITZERLAND	Notes: B, La substance peut être présente sous forme de vapeur et d'aérosol en même temps / Der Stoff kann gleichzeitig als Dampf und Aerosol vorliegen Source: suva.ch/valeurs-limites

Predicted No Effect Concentration (PNEC) values

2-methoxy-1-methylethyl acetate

CAS: 108-65-6

Exposure Route: Fresh Water; PNEC Limit: 635 mg/m³

Exposure Route: Intermittent releases (fresh water); PNEC Limit: 6.35 mg/l

Exposure Route: Marine water; PNEC Limit: 63.5 mg/m³

Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 100 mg/l

Exposure Route: Freshwater sediments; PNEC Limit: 3.29 mg/kg

Exposure Route: Marine water sediments; PNEC Limit: 329 µg/kg

Exposure Route: Soil; PNEC Limit: 290 µg/kg

4-isocyanatosulphonyltoluene

CAS: 4083-64-1 Exposure Route: Fresh Water; PNEC Limit: 30 mg/m³
Exposure Route: Intermittent releases (fresh water); PNEC Limit: 300 mg/m³
Exposure Route: Marine water; PNEC Limit: 3 mg/m³
Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 400 mg/m³
Exposure Route: Freshwater sediments; PNEC Limit: 172 µg/kg
Exposure Route: Marine water sediments; PNEC Limit: 17.2 µg/kg
Exposure Route: Soil; PNEC Limit: 16.8 µg/kg

Hexamethylene Diisocyanate

CAS: 822-06-0 Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 8.42 mg/l
Exposure Route: Marine water; PNEC Limit: 7.74 mg/m³
Exposure Route: Fresh Water; PNEC Limit: 77.4 mg/m³
Exposure Route: Marine water sediments; PNEC Limit: 1.334 µg/kg
Exposure Route: Freshwater sediments; PNEC Limit: 13.34 µg/kg
Exposure Route: Soil; PNEC Limit: 2.6 µg/kg
Exposure Route: Intermittent releases (fresh water); PNEC Limit: 0.774 mg/l

Derived No Effect Level (DNEL) values

2-methoxy-1-methylethyl acetate

CAS: 108-65-6 Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects
Worker Professional: 275 mg/kg/day; Consumer: 33 mg/kg/day

Exposure Route: Human Inhalation; Exposure Frequency: Short Term, systemic effects
Worker Professional: 550 mg/kg/day

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects
Consumer: 33 mg/kg/day

Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects
Worker Professional: 796 mg/kg; Consumer: 320 mg/kg

Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects
Consumer: 36 mg/kg

4-isocyanatosulphonyltoluene

CAS: 4083-64-1 Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects
Worker Professional: 3.24 mg/kg/day; Consumer: 800 µg/m³

Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects
Worker Professional: 920 µg/kg; Consumer: 460 µg/kg

Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects
Consumer: 460 µg/kg

Hexamethylene Diisocyanate

CAS: 822-06-0 Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects
Worker Professional: 35 µg/m³

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects
Worker Professional: 35 µg/m³

Exposure Route: Human Inhalation; Exposure Frequency: Short Term, local effects
Worker Professional: 70 µg/m³

Exposure Route: Human Inhalation; Exposure Frequency: Short Term, systemic effects
Worker Professional: 70 µg/m³

8.2. Exposure controls

Eye protection:

Eye glasses with side protection.(EN166)

Protection for skin:

Chemical protection clothing. Safety shoes.

Protection for hands:

Protection for hands:

Suitable materials for safety gloves; BS EN 16523-1:2015+A1:2018: Level 6.

Butyl rubber - BR: thickness ≥0.40mm; breakthrough time ≥480min.

Nitrile rubber - NBR: thickness ≥0.40mm; breakthrough time ≥480min.

Respiratory protection:

Gas filter type A .

Thermal Hazards:

Wear appropriate thermal protective clothing, when necessary.

Environmental exposure controls:

Prevent the product from entering sewers or surface and underground water.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	Liquid
Colour:	Light yellow
Odour:	Characteristic
pH:	Not Relevant Notes: Not applicable, non-aqueous mixture
Kinematic viscosity:	N.A.
Melting point/freezing point:	N.A.
Boiling point or initial boiling point and boiling range:	N.A.
Flash point:	24 °C (75 °F)
Lower and upper explosion limit:	N.A.
Relative vapour density:	N.A.
Vapour pressure:	N.A.
Density and/or relative density:	1.11 g/cm ³
Solubility in water:	N.A.
Solubility in oil:	N.A.
Partition coefficient n-octanol/water (log value):	N.A.
Auto-ignition temperature:	N.A.
Decomposition temperature:	N.A.
Flammability:	The product is classified Flam. Liq. 3
Volatile Organic compounds - VOCs =	30.07%; 332.26g/L
Particle characteristics:	
Particle size:	N.A.

9.2. Other information

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 oxidizing 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	The product is classified: Acute Tox. 4(H332)
b) skin corrosion/irritation	Not classified Based on available data, the classification criteria are not met
c) serious eye damage/irritation	Not classified Based on available data, the classification criteria are not met
d) respiratory or skin sensitisation	The product is classified: Skin Sens. 1(H317)
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(H335)
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:

2-methoxy-1-methylethyl acetate

CAS: 108-65-6	a) acute toxicity	LD50 Oral Rat = 6190 mg/kg LD50 Skin Rabbit > 5000 mg/kg 24h
	b) skin corrosion/irritation	Skin Irritant Rabbit Negative 4h
	c) serious eye damage/irritation	Eye Irritant Rabbit No
	d) respiratory or skin sensitisation	Skin Sensitization Guinea pig Negative
	g) reproductive toxicity	No Observed Effect Level Rat = 3.69 mg/l

4-isocyanatosulphonyltoluene

CAS: 4083-64-1	a) acute toxicity	LD50 Oral Rat = 2330 mg/kg LD50 Skin Rat > 2000 mg/kg 24h
	b) skin corrosion/irritation	Skin Irritant Rabbit Negative 24h
	c) serious eye damage/irritation	Eye Irritant Rabbit No
	d) respiratory or skin sensitisation	Skin Sensitization Negative
	f) carcinogenicity	Genotoxicity Negative 48h
	g) reproductive toxicity	No Observed Adverse Effect Level Oral Rat = 52 mg/kg

Hexamethylene Diisocyanate

CAS: 822-06-0	a) acute toxicity	LD50 Oral Rat = 959 mg/kg LC50 Inhalation Vapour Rat = 124 mg/m ³ 4h LD50 Skin Rat > 7000 mg/kg 24h
	b) skin corrosion/irritation	Skin Corrosive Rabbit Positive
	c) serious eye damage/irritation	Eye Corrosive Rabbit Positive
	d) respiratory or skin sensitisation	Skin Sensitization Guinea pig Positive Respiratory Sensitization Guinea pig Positive
	f) carcinogenicity	Genotoxicity Negative Carcinogenicity Inhalation Rat = 1.15 mg/m ³
	g) reproductive toxicity	No Observed Effect Level Rat = 0.3 Ppm

11.2. Information on other hazards

Endocrine disrupting properties:

No endocrine disruptor substances present in concentration $\geq 0.1\%$

SECTION 12: Ecological information**12.1. Toxicity**

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

Eco-Toxicological Information:

List of Eco-Toxicological properties of the product

Not classified for environmental hazards.

No data available for the product

List of Eco-Toxicological properties of the components

2-methoxy-1-methylethyl acetate

- CAS: 108-65-6
- a) Aquatic acute toxicity: LC50 Fish *Oncorhynchus mykiss* = 130 mg/L 96h
 - b) Aquatic chronic toxicity: NOEC Fish *Oryzias latipes* = 47.5 mg/L
 - a) Aquatic acute toxicity: LC50 *Daphnia magna* = 408 mg/L 48h
 - b) Aquatic chronic toxicity: NOEC *Daphnia magna* > 100 mg/L
 - a) Aquatic acute toxicity: NOEC Algae *Selenastrum capricornutum* ≥ 1000 mg/L

4-isocyanatosulphonyltoluene

- CAS: 4083-64-1
- a) Aquatic acute toxicity: LC50 Fish *Oncorhynchus mykiss* > 45 mg/L 96h
 - a) Aquatic acute toxicity: EC50 *Daphnia magna* = 100 mg/L 48h
 - a) Aquatic acute toxicity: EC50 Algae *Pseudokirchnerella subcapitata* = 30 mg/L 72h

Hexamethylene Diisocyanate

- CAS: 822-06-0
- a) Aquatic acute toxicity: LC0 Fish *Brachydanio rerio* = 82.8 mg/L 96h
 - a) Aquatic acute toxicity: EC0 *Daphnia magna* ≥ 89.1 mg/L 48h
 - c) Bacteria toxicity: EC50 = 842 mg/L
 - a) Aquatic acute toxicity: EC50 Algae *Desmodesmus subspicatus* = 77.4 mg/L 72h
 - a) Aquatic acute toxicity: EC10 Algae freshwater algae = 48 mg/L 72h
 - c) Bacteria toxicity: EC50 Sludge activated sludge = 842 mg/L 3h

12.2. Persistence and degradability

2-methoxy-1-methylethyl acetate

- | | | |
|---------------|-----------------------|---|
| CAS: 108-65-6 | Readily biodegradable | Test: Dissolved organic carbon
Notes: OECD GL 301E |
|---------------|-----------------------|---|

4-isocyanatosulphonyltoluene

- | | | |
|----------------|-----------------------|--|
| CAS: 4083-64-1 | Readily biodegradable | Test: Oxygen consumption; Value: 83
Notes: %; OECD 301D |
|----------------|-----------------------|--|

Hexamethylene Diisocyanate

- | | | |
|---------------|---------------------------|---|
| CAS: 822-06-0 | Non-readily biodegradable | Test: Oxygen consumption
Notes: OECD Guideline 302 C |
|---------------|---------------------------|---|

12.3. Bioaccumulative potential

Hexamethylene Diisocyanate

- | | | |
|---------------|-----------------|---|
| CAS: 822-06-0 | Bioaccumulative | Test: BCF - Bioconcentration factor; Value: 57.63 |
|---------------|-----------------|---|

12.4. Mobility in soil

N.A.

12.5. Results of PBT and vPvB assessment

No PBT or vPvB substances present in concentration $\geq 0.1\%$

12.6. Endocrine disrupting properties

No endocrine disruptor substances present in concentration $\geq 0.1\%$

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.

The product disposed of as such, pursuant to Regulation (EU) 1357/2014, must be classified as hazardous waste

A waste code according to the European List of Wastes (LoW) cannot be specified, due to dependence on the usage. Contact an authorized waste disposal service.

Properties of waste which render it hazardous (Annex III, Directive 2008/98/EC):

N.A.

SECTION 14: Transport information

14.1. UN number or ID number

1263

14.2. UN proper shipping name

ADR-Shipping Name: PAINT RELATED MATERIAL

IATA-Shipping Name: PAINT RELATED MATERIAL

IMDG-Shipping Name: PAINT RELATED MATERIAL

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

Marine pollutant: No

Environmental Pollutant: No

IMDG-EMS: F-E, S-E

14.6. Special precautions for user

Road and Rail (ADR-RID):

ADR-Label: 3

ADR - Hazard identification number: -

ADR-Special Provisions: 163 367 650

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

ADR Limited Quantities: 5 L

ADR Excepted Quantities: E1

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 and handling: Category A

IMDG-Segregation: -

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 (EU) n. 2020/878

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

Regulation (EU) n. 286/2011 (ATP 2 CLP)

Regulation (EU) n. 487/2013 (ATP 4 CLP)

Regulation (EU) n. 605/2014 (ATP 6 CLP)

Regulation (EU) n. 2016/918 (ATP 8 CLP)

Regulation (EC) n. 790/2009 (ATP 1 CLP) and (EU) n. 758/2013

Regulation (EU) n. 618/2012 (ATP 3 CLP)

Regulation (EU) n. 944/2013 (ATP 5 CLP)

Regulation (EU) n. 2015/1221 (ATP 7 CLP)

Regulation (EU) n. 2016/1179 (ATP 9 CLP)

- Regulation (EU) n. 2017/776 (ATP 10 CLP)

Regulation (EU) n. 2018/1480 (ATP 13 CLP)

Regulation (EU) n. 2020/217 (ATP 14 CLP)

Regulation (EU) n. 2021/643 (ATP 16 CLP)

Regulation (EU) n. 2022/692 (ATP 18 CLP)

Regulation (EU) n. 2023/1434 (ATP 19 CLP)

Regulation (EU) n. 2024/197 (ATP 21 CLP)

Regulation (EU) n. 2024/2865
- Regulation (EU) n. 2018/669 (ATP 11 CLP)

Regulation (EU) n. 2019/521 (ATP 12 CLP)

Regulation (EU) n. 2020/1182 (ATP 15 CLP)

Regulation (EU) n. 2021/849 (ATP 17 CLP)

Regulation (EU) n. 2023/707

Regulation (EU) n. 2023/1435 (ATP 20 CLP)

Regulation (EU) n. 2024/2564 (ATP 22 CLP)

Regulation (EU) n. 2025/1222 (ATP 23 CLP)

Regulation (EC) nr 648/2004 (Detergents).

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: 74, 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

Explosives precursors – Regulation 2019/1148

No substances listed

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

No substances listed

German Water Hazard Class.

NWG: Not hazardous for water

German Lagerklasse according to TRGS 510:

LGK 3

SVHC Substances:

No SVHC substances present in concentration >= 0.1%

Dir. 2004/42/EC (VOC directive)

(ready to use)

- Volatile Organic compounds - VOCs = 23.81 %
- Volatile Organic compounds - VOCs = 321.47 g/L

FACTORY COLOR PU-S (B) (not ready to use)

- Volatile Organic compounds - VOCs = 30.07 %
- Volatile Organic compounds - VOCs = 332.26 g/L

15.2. Chemical safety assessment

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

Substances for which a Chemical Safety Assessment has been carried out:

- Hexamethylene diisocyanate, oligomers
- 2-methoxy-1-methylethyl acetate
- 4-isocyanatosulphonyltoluene

SECTION 16: Other information

Code	Description
EUH014	Reacts violently with water.
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.

Code	Hazard class and hazard category	Description
2.6/3	Flam. Liq. 3	Flammable liquid, Category 3
3.1/1/Inhal	Acute Tox. 1	Acute toxicity (inhalation), Category 1
3.1/4/Inhal	Acute Tox. 4	Acute toxicity (inhalation), Category 4
3.1/4/Oral	Acute Tox. 4	Acute toxicity (oral), Category 4
3.2/2	Skin Irrit. 2	Skin irritation, Category 2
3.3/2	Eye Irrit. 2	Eye irritation, Category 2
3.4.1/1	Resp. Sens. 1	Respiratory Sensitisation, Category 1
3.4.2/1	Skin Sens. 1	Skin Sensitisation, Category 1
3.8/3	STOT SE 3	Specific target organ toxicity — single exposure, 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
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Flam. Liq. 3, H226	On basis of test data
Acute Tox. 4, H332	Calculation method
Skin Sens. 1, H317	Calculation method
STOT SE 3, H335	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).

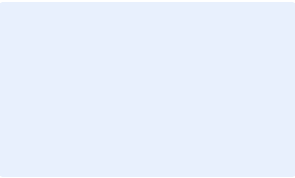
IC50: half maximal inhibitory concentration

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: Keep Away From Heat
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:

- Safety Data Sheet
- SECTION 1: Identification of the substance/mixture and of the company/undertaking
- SECTION 2: Hazards identification
- SECTION 3: Composition/information on ingredients
- SECTION 7: Handling and storage
- SECTION 8: Exposure controls/personal protection
- SECTION 9: Physical and chemical properties
- SECTION 11: Toxicological information
- SECTION 12: Ecological information
- SECTION 13: Disposal considerations
- SECTION 14: Transport information
- SECTION 15: Regulatory information
- SECTION 16: Other information



Exposure Scenario

2-methoxy-1-methylethyl acetate

Exposure Scenario, 08/06/2021

Substance identity	
	2-methoxy-1-methylethyl acetate
CAS No.	108-65-6
INDEX No.	607-195-00-7
EINECS No.	203-603-9
Registration number	01-2119475791-29

Table of contents

1. ES 1

1. ES 1

1.1 TITLE SECTION

Exposure Scenario name	Professional application of coatings and inks by brush or roller
Date - Version	29/04/2021 - 1.0
Main user group	Professional uses
Sector(s) of use	Professional uses (SU22)
Product Categories	Coatings and paints, thinners, paint removers (PC9a)

Environment Contributing Scenario

CS1	ERC8a - ERC8d
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Worker Contributing Scenario

CS2 Large surfaces - Rolling, Brushing	PROC10
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1.2 Conditions of use affecting exposure

1.2. CS1: Environment Contributing Scenario (ERC8a, ERC8d)

Environmental release categories	Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) - Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) (ERC8a, ERC8d)
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Product (article) characteristics

Physical form of product:

Liquid

Concentration of substance in product:

Covers concentrations up to 100 %

Amount used, frequency and duration of use (or from service life)

Amounts used:

Daily amount per site = 5000 kg

Release type: Continuous release

Emission days: 365 days per year

Conditions and measures related to sewage treatment plant

STP type:

Municipal Sewage Treatment Plant

Water - minimum efficiency of: = 87.3 %

Conditions and measures related to treatment of waste (including article waste)

Waste treatment

Contain and dispose of waste according to local regulations.

Other conditions affecting environmental exposure

Local marine water dilution factor: 100

Local freshwater dilution factor: 10

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.

Additional Good Practice Advice:

Site should have a spill plan to ensure that adequate safeguards are in place to minimize the impact of episodic releases.

1.2. CS2: Worker Contributing Scenario: Large surfaces - Rolling, Brushing (PROC10)

Process Categories	Roller application or brushing (PROC10)
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Product (article) characteristics

Physical form of product:

Liquid

Concentration of substance in product:

Covers concentrations up to 100 %

Amount used, frequency and duration of use/exposure**Amounts used:**

Daily amount per site = 5000 kg

Duration:

Exposure duration = 8 h/day

Frequency:

Use frequency = 365 days per year

Technical and organisational conditions and measures**Technical and organisational measures**

Ensure control measures are regularly inspected and maintained.

Carry out in a vented booth or extracted enclosure.

Conditions and measures related to personal protection, hygiene and health evaluation**Personal protection**

Wear a respirator conforming to EN140.

Other conditions affecting worker exposure

Covers indoor and outdoor use

Temperature: Assumes use at not more than 20 °C above ambient temperature.

1.3 Exposure estimation and reference to its source

1.3. CS1: Environment Contributing Scenario (ERC8a, ERC8d)

protection target	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
freshwater	= 0.003 mg/L	ECETOC TRA environment v3	= 0.004
freshwater sediment	= 0.014 mg/kg KW	ECETOC TRA environment v3	= 0.004
marine water	= 0.0004 mg/L	ECETOC TRA environment v3	= 0.007
marine sediment	= 0.002 mg/kg KW	ECETOC TRA environment v3	= 0.007
soil	= 0.001 mg/kg KW	ECETOC TRA environment v3	= 0.004

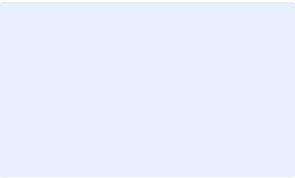
1.3. CS2: Worker Contributing Scenario: Large surfaces - Rolling, Brushing (PROC10)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	= 137.71 mg/m ³	ECETOC TRA worker v3	= 0.5
dermal, systemic, long-term	= 13.71 mg/kg bw/day	ECETOC TRA worker v3	0.18

1.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Guidance to check compliance with the exposure scenario:

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.



Exposure Scenario

Hexamethylene diisocyanate, oligomers

Exposure Scenario, 08/06/2021

Substance identity	
	Hexamethylene diisocyanate, oligomers
CAS No.	28182-81-2
EINECS No.	500-060-2
Registration number	01-2119485796-17

Table of contents

1. **ES 1** Widespread use by professional workers; Coatings and paints, thinners, paint removers (PC9a)

1. ES 1		Widespread use by professional workers; Coatings and paints, thinners, paint removers (PC9a)	
1.1 TITLE SECTION			
Exposure Scenario name	Dye - Professional application of coatings and inks by brush or roller - Professional application of coatings and inks		
Date - Version	08/06/2021 - 1.0		
Life Cycle Stage	Widespread use by professional workers		
Main user group	Professional uses		
Sector(s) of use	Professional uses (SU22)		
Product Categories	Coatings and paints, thinners, paint removers (PC9a)		
Article Category(ies)	Stone, plaster, cement, glass and ceramic articles: Large surface area articles (AC4a) - Other articles made of stone, plaster, cement, glass or ceramic (AC4g)		
Environment Contributing Scenario			
CS1	ERC8c - ERC8f		
Worker Contributing Scenario			
CS2 Mixing operations - Material transfers	PROC8a		
CS3 Surfaces - Rolling, Brushing	PROC10		
CS4 Surfaces - Roller, spreader, flow application	PROC11		
1.2 Conditions of use affecting exposure			
1.2. CS1: Environment Contributing Scenario (ERC8c, ERC8f)			
Environmental release categories	Widespread use leading to inclusion into/onto article (indoor) - Widespread use leading to inclusion into/onto article (outdoor) (ERC8c, ERC8f)		
<i>Product (article) characteristics</i>			
Physical form of product: Liquid, vapour pressure < 0,5 kPa at STP			
Vapour pressure: = 0.00246 Pa			
<i>Amount used, frequency and duration of use (or from service life)</i>			
Amounts used: Daily amount per site 50 tonnes/day			
Release type: Intermittent release			
<i>Technical and organisational conditions and measures</i>			
Control measures to prevent releases No discharge of substance into waste water			
<i>Conditions and measures related to sewage treatment plant</i>			
STP type: Municipal Sewage Treatment Plant Water - minimum efficiency of: = 100 % STP effluent (m³/day): 2000			
<i>Conditions and measures related to treatment of waste (including article waste)</i>			
Waste treatment External treatment and disposal of waste should comply with applicable local and/or national regulations.			
<i>Other conditions affecting environmental exposure</i>			
Receiving surface water flow: 18000 m³/day			

1.2. CS2: Worker Contributing Scenario: Mixing operations - Material transfers (PROC8a)

Process Categories	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities (PROC8a)
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Product (article) characteristics

Physical form of product:

Liquid, vapour pressure < 0,5 kPa at STP

Vapour pressure:

Vapour pressure < 0.01 Pa at standard temperature and pressure = 0.00246 Pa

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Technical and organisational conditions and measures

Technical and organisational measures

Ensure operatives are trained to minimise exposures.

Use of an integrated local exhaust ventilation is required.

Provide a basic standard of general ventilation (1 to 3 air changes per hour).

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Wear suitable gloves tested to EN374.

Wear suitable respiratory protection.

Inhalation - minimum efficiency of: = 90 %

Other conditions affecting worker exposure

Indoor use

Professional use

Room size: = 300 m³

Temperature: Covers use at ambient temperatures. 40°C

1.2. CS3: Worker Contributing Scenario: Surfaces - Rolling, Brushing (PROC10)

Process Categories	Roller application or brushing (PROC10)
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Product (article) characteristics

Physical form of product:

Liquid, vapour pressure < 0,5 kPa at STP

Vapour pressure:

Vapour pressure < 0.01 Pa at standard temperature and pressure = 0.00246 Pa

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Technical and organisational conditions and measures

Technical and organisational measures

Ensure operatives are trained to minimise exposures.

Use of an integrated local exhaust ventilation is required.

Provide a basic standard of general ventilation (1 to 3 air changes per hour).

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Wear suitable gloves tested to EN374.
Wear suitable respiratory protection.

Inhalation - minimum efficiency of: = 90 %

Other conditions affecting worker exposure

Indoor use

Professional use

Room size: = 300 m³

Temperature: Covers use at ambient temperatures. 40°C

1.2. CS4: Worker Contributing Scenario: Surfaces - Roller, spreader, flow application (PROC11)

Process Categories

Non industrial spraying (PROC11)

Product (article) characteristics

Physical form of product:

Liquid, vapour pressure < 0,5 kPa at STP

Vapour pressure:

Vapour pressure < 0.01 Pa at standard temperature and pressure = 0.00246 Pa

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Technical and organisational conditions and measures

Technical and organisational measures

Ensure operatives are trained to minimise exposures.

Use of an integrated local exhaust ventilation is required.

Provide a basic standard of general ventilation (1 to 3 air changes per hour).

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Wear suitable gloves tested to EN374.
Wear suitable respiratory protection.
Wear a full face respirator conforming to EN136.

Inhalation - minimum efficiency of: = 98 %

Other conditions affecting worker exposure

Covers indoor and outdoor use

Professional use

Room size: < 300 m³

Temperature: Assumes use at not more than 20 °C above ambient temperature.

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.

Additional Good Practice Advice:

Ensure that direction of application is only horizontal or downward.

1.3 Exposure estimation and reference to its source

1.3. CS2: Worker Contributing Scenario: Mixing operations - Material transfers (PROC8a)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, local, short-term	= 0.07 mg/m ³	ECETOC TRA worker v3	= 0.07

1.3. CS3: Worker Contributing Scenario: Surfaces - Rolling, Brushing (PROC10)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, local, short-term	= 0.18 mg/m ³	ECETOC TRA worker v3	= 0.18

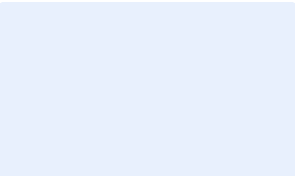
1.3. CS4: Worker Contributing Scenario: Surfaces - Roller, spreader, flow application (PROC11)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, local, short-term	= 0.4 mg/m ³	ECETOC TRA worker v3	= 0.4

1.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Guidance to check compliance with the exposure scenario:

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.



Exposure Scenario

4-isocyanatosulphonyltoluene

Exposure Scenario, 08/06/2023

Substance identity	
	4-isocyanatosulphonyltoluene
CAS No.	4083-64-1
INDEX No.	615-012-00-7
EINECS No.	223-810-8
Registration number	01-2119980050-47

Table of contents

1. **ES 1** Widespread use by professional workers; Various products (PC9a, PC1); Building and construction work (SU19)

1. ES 1		Widespread use by professional workers; Various products (PC9a, PC1); Building and construction work (SU19)	
1.1 TITLE SECTION			
Exposure Scenario name	Professional application of coatings and inks - Use in rigid foams, coatings, adhesives and sealants		
Date - Version	08/06/2023 - 1.0		
Life Cycle Stage	Widespread use by professional workers		
Main user group	Professional uses		
Sector(s) of use	Building and construction work (SU19)		
Product Categories	Coatings and paints, thinners, paint removers (PC9a) - Adhesives, sealants (PC1)		
Environment Contributing Scenario			
CS1	ERC8c - ERC8f		
Worker Contributing Scenario			
CS2 Material transfers	PROC8a		
CS3 Rolling, Brushing	PROC10		
1.2 Conditions of use affecting exposure			
1.2. CS1: Environment Contributing Scenario (ERC8c, ERC8f)			
Environmental release categories	Widespread use leading to inclusion into/onto article (indoor) - Widespread use leading to inclusion into/onto article (outdoor) (ERC8c, ERC8f)		
<i>Amount used, frequency and duration of use (or from service life)</i>			
Amounts used: Daily amount per site <= 8.922E-05			
Emission days: 225 days per year			
<i>Technical and organisational conditions and measures</i>			
Control measures to prevent releases			
		Soil - minimum efficiency of: 0.5 % Water - minimum efficiency of: 1 %	
<i>Conditions and measures related to sewage treatment plant</i>			
STP type: Municipal Sewage Treatment Plant Water - minimum efficiency of: = 87.36 %			
STP effluent (m³/day): 2000			
<i>Conditions and measures related to treatment of waste (including article waste)</i>			
Waste treatment External treatment and disposal of waste should comply with applicable local and/or national regulations.			
1.2. CS2: Worker Contributing Scenario: Material transfers (PROC8a)			
Process Categories	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities (PROC8a)		
<i>Product (article) characteristics</i>			
Concentration of substance in product: Covers percentage substance in the product up to 1 %.			
<i>Amount used, frequency and duration of use/exposure</i>			

Duration: Covers use up to < 8 h			
<i>Technical and organisational conditions and measures</i>			
Technical and organisational measures Provide a basic standard of general ventilation (1 to 3 air changes per hour).			
<i>Conditions and measures related to personal protection, hygiene and health evaluation</i>			
Personal protection			
Wear chemically resistant gloves (tested to EN374) in combination with "basic" employee training.		Dermal - minimum efficiency of: = 90 %	
Wear a full face respirator conforming to EN136.		Inhalation - minimum efficiency of: = 90 %	
<i>Other conditions affecting worker exposure</i>			
Indoor use Professional use Temperature: Assumes process temperature up to 40°C Body parts exposed: Assumes that potential dermal contact is limited to hands.			
1.2. CS3: Worker Contributing Scenario: Rolling, Brushing (PROC10)			
Process Categories		Roller application or brushing (PROC10)	
<i>Product (article) characteristics</i>			
Concentration of substance in product: Covers percentage substance in the product up to 1 %.			
<i>Amount used, frequency and duration of use/exposure</i>			
Duration: Covers use up to < 8 h			
<i>Technical and organisational conditions and measures</i>			
Technical and organisational measures Provide a basic standard of general ventilation (1 to 3 air changes per hour).			
<i>Conditions and measures related to personal protection, hygiene and health evaluation</i>			
Personal protection			
Wear chemically resistant gloves (tested to EN374) in combination with "basic" employee training.		Dermal - minimum efficiency of: = 90 %	
Wear a full face respirator conforming to EN136.		Inhalation - minimum efficiency of: = 90 %	
<i>Other conditions affecting worker exposure</i>			
Indoor use Professional use Temperature: Assumes process temperature up to 40°C Body parts exposed: Assumes that potential dermal contact is limited to hands.			
1.3 Exposure estimation and reference to its source			
1.3. CS1: Environment Contributing Scenario (ERC8c, ERC8f)			
protection target	Exposure level	Calculation method	Risk Characterization Ratio (RCR)

freshwater	= 0.0001655 mg/L	N/A	< 0.01
marine water	= 1.544E-05 mg/L	N/A	< 0.01
freshwater sediment	= 0.0009514 mg/kg dry weight	N/A	< 0.01
marine sediment	= 8.873E-05 mg/kg dry weight	N/A	< 0.01
Sewage treatment plant	= 5.637E-05 mg/L	N/A	< 0.01
Agricultural soil	= 0.0002528 mg/kg dry weight	N/A	< 0.015

1.3. CS2: Worker Contributing Scenario: Material transfers (PROC8a)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	= 2.054 mg/m ³	N/A	= 0.634
dermal, systemic, long-term	= 0.137 mg/kg dry weight	N/A	= 0.149
combined routes, systemic, long-term	N/A	N/A	= 0.783

1.3. CS3: Worker Contributing Scenario: Rolling, Brushing (PROC10)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	= 2.054 mg/m ³	N/A	= 0.634
dermal, systemic, long-term	= 0.274 mg/kg dry weight	N/A	= 0.298
combined routes, systemic, long-term	N/A	N/A	= 0.932

1.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Guidance to check compliance with the exposure scenario:

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.