

Safety Data Sheet



RAXON HARDENER FOR 2K ACRYLIC

Safety Data Sheet dated 17/09/1997 version 15.0 dated 10/5/2024

This safety data sheet has been completely updated in compliance to Regulation 2020/878.

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

1.1. Product identifier

Mixture identification:

Trade name: RAXON HARDENER FOR 2K ACRYLIC

Trade code: RAX8100

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

Recommended use:

Catalyst

IS - Industrial uses

PW - Professional uses

1.3. Details of the supplier of the safety data sheet

Company:

Shop Bodyshop Direct

Unit 17a, Mullaghboy ind. est, Navan, Co. Meath C15 DX8A

Tel: 046-9093800

Competent person responsible for the safety data sheet:

serviziosds@estalia.it

1.4. Emergency telephone number

Shop Bodyshop Direct

Tel: 046-9093800

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

EC regulation criteria 1272/2008 (CLP)

Flam. Liq. 3, H226 Flammable liquid and vapour.

Acute Tox. 4, H332 Harmful if inhaled.

Skin Irrit. 2, H315 Causes skin irritation.

Eye Irrit. 2, H319 Causes serious eye irritation.

Skin Sens. 1, H317 May cause an allergic skin reaction.

STOT SE 3, H335 May cause respiratory irritation.

STOT SE 3, H336 May cause drowsiness or dizziness.

STOT RE 2, H373 May cause damage to organs through prolonged or repeated exposure.

Asp. Tox. 1, H304 May be fatal if swallowed and enters airways.

Aquatic Chronic 3, H412 Harmful to aquatic life with long lasting effects.

Adverse physicochemical, human health and environmental effects:

No other hazards

2.2. Label elements

Hazard pictograms:



Danger

Hazard statements:

H226 Flammable liquid and vapour.

H332 Harmful if inhaled.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H317 May cause an allergic skin reaction.

H335 May cause respiratory irritation.



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H336 May cause drowsiness or dizziness.

H373 May cause damage to organs through prolonged or repeated exposure.

H304 May be fatal if swallowed and enters airways.

H412 Harmful to aquatic life with long lasting effects.

Precautionary statements:

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

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P280 Wear protective gloves/clothing and eye/face protection.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER.

P331 Do NOT induce vomiting.

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

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

Special Provisions:

EUH204 Contains isocyanates. May produce an allergic reaction.

Contains

xylene (mixed isomers)

Hexamethylene diisocyanate, oligomerisation product (isocyanurate type)

n-butyl acetate

2-methoxy-1-methylethyl acetate

4-isocyanatosulphonyltoluene; tosyl isocyanate: May produce an allergic reaction.

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

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

$\geq 30\%$ - $< 40\%$ xylene (mixed isomers)

REACH No.: 01-2119488216-32-XXXX, Index number: 601-022-00-9, CAS: 1330-20-7, EC: 215-535-7

Flam. Liq. 3 H226 Flammable liquid and vapour.

Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.

Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.

Eye Irrit. 2 H319 Causes serious eye irritation.

STOT SE 3 H335 May cause respiratory irritation.

STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.

Skin Irrit. 2 H315 Causes skin irritation.

Acute Tox. 4 H312 Harmful in contact with skin.

Acute Tox. 4 H332 Harmful if inhaled.

$\geq 30\%$ - $< 40\%$ Hexamethylene diisocyanate, oligomerisation product (isocyanurate type)

REACH No.: 01-2119485796-17-XXXX, CAS: 28182-81-2, EC: 931-274-8

Acute Tox. 4 H332 Harmful if inhaled.

STOT SE 3 H335 May cause respiratory irritation.

Skin Sens. 1 H317 May cause an allergic skin reaction.

$\geq 20\%$ - $< 25\%$ n-butyl acetate

REACH No.: 01-2119485493-29-XXXX, Index number: 607-025-00-1, CAS: 123-86-4, EC: 204-658-1

Flam. Liq. 3 H226 Flammable liquid and vapour.



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STOT SE 3 H336 May cause drowsiness or dizziness.
EUH066 Repeated exposure may cause skin dryness or cracking.

>= 3% - < 5% 2-methoxy-1-methylethyl acetate

REACH No.: 01-2119475791-29-XXXX, Index number: 607-195-00-7, CAS: 108-65-6, EC: 203-603-9

Flam. Liq. 3 H226 Flammable liquid and vapour.

STOT SE 3 H336 May cause drowsiness or dizziness.

>= 0.1% - < 0.25% 4-isocyanatosulphonyltoluene; tosyl isocyanate

REACH No.: 01-2119980050-47-XXXX, Index number: 615-012-00-7, CAS: 4083-64-1, EC: 223-810-8

Eye Irrit. 2 H319 Causes serious eye irritation.

STOT SE 3 H335 May cause respiratory irritation.

Skin Irrit. 2 H315 Causes skin irritation.

Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

EUH014 Reacts violently with water.

Specific Concentration Limits:

C >= 5%: Eye Irrit. 2 H319

C >= 5%: STOT SE 3 H335

C >= 5%: Skin Irrit. 2 H315

Other information

N.A.

SECTION 4: First aid measures

4.1. Description of first aid measures

In case of skin contact:

Immediately take off all contaminated clothing.

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

Wash thoroughly the body (shower or bath).

Remove contaminated clothing immediately and dispose off safely.

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

In case of eyes contact:

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

Protect uninjured eye.

In case of Ingestion:

Do NOT induce vomiting.

In case of Inhalation:

If breathing is irregular or stopped, administer artificial respiration.

In case of inhalation, consult a doctor immediately and show the packing or label.

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

None

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).

Treatment:

None



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SECTION 5: Firefighting measures

- 5.1. Extinguishing media
Suitable extinguishing media:
In case of fire, use a foam 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
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.
 - 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
Wash with plenty of water.
 - 6.4. Reference to other sections
See also section 8 and 13
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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.
See also section 8 for recommended protective equipment.
Advice on general occupational hygiene:
Contaminated clothing should be changed before entering eating areas.
Do not eat or drink while working.
- 7.2. Conditions for safe storage, including any incompatibilities
Always keep in a well ventilated place.
Store at temperatures close to 20 °C.
Keep away from unguarded flame, sparks, and heat sources. Avoid direct exposure to sunlight.
Keep away from food, drink and feed.
Incompatible materials:
None in particular.
Instructions as regards storage premises:
Cool and adequately ventilated.
Provisions related to directive EU 2012/18 (Seveso III):
Seveso III category according to Annex 1, part 1



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Product belongs to category:	Lower-tier threshold (tonnes)	Upper-tier threshold (tonnes)
P5c	5000	50000

- 7.3. Specific end use(s)
None in particular

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

xylene (mixed isomers) - CAS: 1330-20-7

EU - TWA(8h): 221 mg/m³, 50 ppm - STEL(15min): 442 mg/m³, 100 ppm - Notes: Skin

OSHA PEL - TWA(8h): 435 mg/m³, 100 ppm - Notes: USA - UNITED STATES

National - TWA(8h): 220 mg/m³, 50 ppm - STEL(15min): 440 mg/m³, 100 ppm - Notes:

CH - SVIZZERA

National - TWA(8h): 221 mg/m³, 50 ppm - STEL(15min): 442 mg/m³, 100 ppm - Notes:

IT - ITALIA (Skin)

NIOSH - TWA(8h): 435 mg/m³, 100 ppm - STEL(15min): 655 mg/m³, 150 ppm - Notes:

USA - UNITED STATES

ACGIH - TWA(8h): 20 ppm

National - TWA(8h): 221 mg/m³, 50 ppm - STEL(15min): 442 mg/m³, 100 ppm - Notes:

ES - SPAIN

National - TWA(8h): 221 mg/m³, 50 ppm - STEL(15min): 442 mg/m³, 100 ppm - Notes:

FR - FRANCE (Skin)

National - TWA(8h): 100 mg/m³ - STEL(15min): 200 mg/m³ - Notes: PL - POLONIA

(Skin)

National - TWA(8h): 221 mg/m³, 50 ppm - STEL(15min): 442 mg/m³, 100 ppm - Notes:

RO - ROMANIA

Hexamethylene diisocyanate, oligomerisation product (isocyanurate type) - CAS: 28182-81-2

TLV - STEL: 1 mg/m³

n-butyl acetate - CAS: 123-86-4

ACGIH - TWA(8h): 241 mg/m³, 50 ppm - STEL(15min): 723 mg/m³, 150 ppm - Notes:

Eye and URT irr

GVI - TWA(8h): 724 mg/m³, 150 ppm - STEL(15min): 966 mg/m³, 200 ppm - Notes: HR

- CROAZIA

OSHA PEL - TWA(8h): 710 mg/m³, 150 ppm - Notes: USA - UNITED STATES

NIOSH REL - TWA(Up to 10h): 710 mg/m³, 150 ppm - STEL(15min): 950 mg/m³, 200

ppm - Notes: USA - UNITED STATES

VLA - TWA(8h): 724 mg/m³, 150 ppm - STEL(15min): 965 mg/m³, 200 ppm - Notes: ES

- SPAGNA

MAK - TWA(8h): 480 mg/m³, 100 ppm - STEL(15min): 960 mg/m³, 200 ppm - Notes: CH

- SUVA (Svizzera), SSc

2-methoxy-1-methylethyl acetate - CAS: 108-65-6

EU - TWA(8h): 275 mg/m³, 50 ppm - STEL(15min): 550 mg/m³, 100 ppm - Notes:

(IOELV)

National - TWA(8h): 275 mg/m³, 50 ppm - STEL(15min): 550 mg/m³, 100 ppm - Notes:

IT - ITALIA (Skin)

National - TWA(8h): 275 mg/m³, 50 ppm - STEL(15min): 550 mg/m³, 100 ppm - Notes:

ES - SPAIN (Skin)

National - TWA(8h): 275 mg/m³, 50 ppm - STEL(15min): 550 mg/m³, 100 ppm - Notes:

FR - FRANCE (Skin)

National - TWA(8h): 270 mg/m³, 50 ppm - STEL(15min): 270 mg/m³, 50 ppm - Notes:

DE - GERMANIA (AGS)

National - TWA(8h): 275 mg/m³, 50 ppm - STEL(15min): 550 mg/m³, 100 ppm - Notes:

RO - ROMANIA



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National - TWA(8h): 260 mg/m³ - STEL(15min): 520 mg/m³ - Notes: PL - POLONIA (Skin)

National - TWA(8h): 274 mg/m³, 50 ppm - STEL(15min): 548 mg/m³, 100 ppm - Notes: GBR - REGNO UNITO (Skin)

National - TWA(8h): 275 mg/m³, 50 ppm - STEL(15min): 275 mg/m³, 50 ppm - Notes: CH - SVIZZERA

DNEL Exposure Limit Values

xylene (mixed isomers) - CAS: 1330-20-7

Worker Industry: 442 mg/m³ - Worker Professional: 442 mg/m³ - Consumer: 260 mg/m³ - Exposure: Human Inhalation - Frequency: Short Term, systemic effects

Worker Industry: 221 mg/m³ - Worker Professional: 221 mg/m³ - Consumer: 65.3 mg/m³ - Exposure: Human Inhalation - Frequency: Long Term, systemic effects

Worker Industry: 212 mg/kg bw/d - Worker Professional: 212 mg/kg bw/d - Consumer: 125 mg/kg bw/d - Exposure: Human Dermal - Frequency: Long Term, systemic effects
Consumer: 12.5 mg/kg bw/d - Exposure: Human Oral - Frequency: Long Term, systemic effects

Hexamethylene diisocyanate, oligomerisation product (isocyanurate type) - CAS: 28182-81-2

Worker Industry: 1 mg/m³ - Worker Professional: 1 mg/m³ - Exposure: Human Inhalation - Frequency: Short Term, local effects

Worker Industry: 0.5 mg/m³ - Worker Professional: 0.5 mg/m³ - Exposure: Human Inhalation - Frequency: Long Term, local effects

n-butyl acetate - CAS: 123-86-4

Worker Industry: 600 mg/m³ - Worker Professional: 600 mg/m³ - Consumer: 300 mg/m³ - Exposure: Human Inhalation - Frequency: Short Term, systemic effects

Worker Industry: 300 mg/m³ - Worker Professional: 300 mg/m³ - Consumer: 35.7 mg/m³ - Exposure: Human Inhalation - Frequency: Long Term, systemic effects

Worker Industry: 11 mg/kg bw/d - Worker Professional: 11 mg/kg bw/d - Consumer: 6 mg/kg bw/d - Exposure: Human Dermal - Frequency: Long Term, systemic effects
Consumer: 2 mg/kg bw/d - Exposure: Human Oral - Frequency: Long Term, systemic effects

2-methoxy-1-methylethyl acetate - CAS: 108-65-6

Consumer: 36 mg/kg bw/d - Exposure: Human Oral - Frequency: Long Term, systemic effects

Worker Industry: 275 mg/m³ - Worker Professional: 275 mg/m³ - Consumer: 33 mg/m³ - Exposure: Human Inhalation - Frequency: Long Term, systemic effects

Worker Industry: 796 mg/kg bw/d - Worker Professional: 796 mg/kg bw/d - Consumer: 320 mg/kg bw/d - Exposure: Human Dermal - Frequency: Long Term, systemic effects

Worker Industry: 550 mg/m³ - Worker Professional: 550 mg/m³ - Exposure: Human Inhalation - Frequency: Short Term, local effects

Consumer: 500 mg/kg bw/d - Exposure: Human Oral - Frequency: Short Term, systemic effects

PNEC Exposure Limit Values

xylene (mixed isomers) - CAS: 1330-20-7

Target: Fresh Water - Value: 0.327 mg/l

Target: Marine water - Value: 0.327 mg/l

Target: Freshwater sediments - Value: 12.46 mg/kg

Target: Marine water sediments - Value: 12.46 mg/kg

Target: Soil (agricultural) - Value: 2.31 mg/kg

Hexamethylene diisocyanate, oligomerisation product (isocyanurate type) - CAS: 28182-81-2

Target: Fresh Water - Value: 0.127 mg/l

Target: Marine water - Value: 0.0127 mg/l

Target: Freshwater sediments - Value: 266701 mg/kg

Target: Marine water sediments - Value: 26670 mg/kg

Target: Soil (agricultural) - Value: 53183 mg/kg

n-butyl acetate - CAS: 123-86-4

Target: Soil (agricultural) - Value: 0.09 mg/kg

Target: Fresh Water - Value: 0.18 mg/l

Target: Marine water - Value: 0.018 mg/l



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Target: Freshwater sediments - Value: 0.981 mg/kg

Target: Marine water sediments - Value: 0.098 mg/kg

2-methoxy-1-methylethyl acetate - CAS: 108-65-6

Target: Fresh Water - Value: 0.635 mg/l

Target: Marine water - Value: 0.064 mg/l

Target: Freshwater sediments - Value: 3.29 mg/kg

Target: Marine water sediments - Value: 0.329 mg/kg

Target: Microorganisms in sewage treatments - Value: 100 mg/l

8.2. Exposure controls

Eye protection:

Eye glasses with side protection.

Protection for skin:

Use clothing that provides comprehensive protection to the skin, e.g. cotton, rubber, PVC or viton.

Protection for hands:

Use chemical resistant protective gloves (for chemicals and micro-organisms) complying with EN 374 regulation, which guarantee total protection.

For the definitive choice of material for work gloves, consider compatibility, degradation, breaking time and permeation.

The gloves have a wear time that depends on the length and on the use.

There is no material or combination of gloves materials that guarantees unlimited resistance to any single chemical or chemical compound.

Observe the instructions and information provided by the gloves manufacturer regarding use, storage, maintenance and replacement.

Gloves should be replaced regularly and whenever there are signs of damage.

Always make sure that the gloves are free from defects and that they are properly preserved and used.

Performance or effectiveness of glove can be reduced by physical/chemical damage and by poor maintenance.

Protective creams can increase the protective screen on the exposed areas of the skin, but should not be applied once the skin has already been exposed. After contact, rinse the skin thoroughly.

When frequent or prolonged contact is to be expected, the use of class 6 protective gloves (permeation time > 480 minutes according to EN3740-3) is recommended.

In case of occasional contact it is recommend the use of class 2 protective gloves (permeation time > 30 minutes according to EN 3740-3).

The user is required to evaluate which type of gloves best suits, basing on their use conditions and on the corresponding combination of risks.

NB: The choice of gloves must also take into account other specific job-related work, such as the presence of other chemicals, physical hazards and possible allergic reactions to the material used to manufacture the glove, so consult your supplier.

Respiratory protection:

Use an adequate respiratory device.

The choice of respirator must be based on known or expected exposure levels, on product risks and on safe operating limits of the selected respirator.

If the employees are exposed to concentrations above the exposure limit, we recommend wearing a Type A filter mask, whose class (1, 2 or 3) should be chosen in relation to the limit concentration of use (standard EN 14387).

In the case of gases or vapors of different nature, combine type filters (DIN EN 141) should be provided.

The use of respiratory protection means is necessary if the technical measures taken are not sufficient to limit the exposure of workers to the threshold values taken into account.

Thermal Hazards:

None

Environmental exposure controls:

Emissions from production processes, including those from ventilation equipment, should be checked for compliance with environmental protection regulations.

Appropriate engineering controls:

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None

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Properties	Value	Method:	Notes
Physical state:	Liquid	--	--
Colour:	Transparent	--	--
Odour:	Characteristic	--	--
Melting point/freezing point:	N.A.	--	--
Boiling point or initial boiling point and boiling range:	110°C / 230°F	--	--
Flammability:	Flammable	--	--
Lower and upper explosion limit:	LEL 1.1% - UEL 7% v/v (Xylene)	Extrapolation from Raw Material SDS	--
Flash point:	26 °C	EN ISO 3679	--
Auto-ignition temperature:	N.A.	--	--
Decomposition temperature:	N.A.	--	--
pH:	Not Relevant	--	--
Kinematic viscosity:	14 mm ² /s (40°C) ISO 4	ISO 2431	--
Solubility in water:	insoluble	--	--
Solubility in oil:	N.A.	--	--
Partition coefficient n-octanol/water (log value):	N.A.	--	--
Vapour pressure:	N.A.	--	--
Density and/or relative density:	0.960 g/cm ³ - 20°C / 68°F	ISO 2811	--
Relative vapour density:	N.A.	--	--
Particle characteristics:			
Particle size:	N.A.	--	--

9.2. Other information

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Properties	Value	Method:	Notes
Viscosity:	25-35" FC 2	ASTM D 1200	--

SECTION 10: Stability and reactivity

- 10.1. Reactivity
Stable under normal conditions
- 10.2. Chemical stability
Stable under normal conditions
- 10.3. Possibility of hazardous reactions
It may generate flammable gases on contact with elementary metals (alkalis and alkaline earth, alloys in powder or vapours) and powerful reducing agents.
It may generate toxic gases on contact with oxidising mineral acids, and powerful oxidising agents.
It may catch fire on contact with oxidising mineral acids, and powerful oxidising agents.
- 10.4. Conditions to avoid
Stable under normal conditions.
- 10.5. Incompatible materials
Avoid contact with combustible materials. The product could catch fire.
- 10.6. Hazardous decomposition products
None.

SECTION 11: Toxicological information

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

Toxicological information of the product:

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- a) acute toxicity
The product is classified: Acute Tox. 4 H332
- b) skin corrosion/irritation
The product is classified: Skin Irrit. 2 H315
- c) serious eye damage/irritation
The product is classified: Eye Irrit. 2 H319
- 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; STOT SE 3 H336
- i) STOT-repeated exposure
The product is classified: STOT RE 2 H373
- j) aspiration hazard
The product is classified: Asp. Tox. 1 H304

Toxicological information of the main substances found in the product:

xylene (mixed isomers) - CAS: 1330-20-7

a) acute toxicity:

Test: LC50 - Route: Inhalation Vapour - Species: Rat = 6700 ppm - Duration: 4h

Test: LD50 - Route: Skin - Species: Rabbit > 5000 ml/kg



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- Test: LD50 - Route: Oral - Species: Rat = 5627 mg/kg
Hexamethylene diisocyanate, oligomerisation product (isocyanurate type) - CAS: 28182-81-2
- a) acute toxicity:
Test: LC50 - Route: Inhalation - Species: Rat > 0.390 mg/l - Duration: 4h - Source: OECD 403 (female)
Test: LD50 - Route: Skin - Species: Rat > 2000 mg/kg
Test: LD50 - Route: Oral - Species: Rat > 2000 mg/kg
- n-butyl acetate - CAS: 123-86-4
- a) acute toxicity:
Test: LC50 - Route: Inhalation Vapour - Species: Rat > 21 mg/l - Duration: 4h
Test: LD50 - Route: Oral - Species: Rat = 10760 mg/kg bw
Test: LD50 - Route: Skin - Species: Rabbit = 14112 mg/kg bw
- 2-methoxy-1-methylethyl acetate - CAS: 108-65-6
- a) acute toxicity:
Test: LD50 - Route: Oral - Species: Rat > 5000 mg/kg
Test: LD50 - Route: Skin - Species: Rabbit > 5000 mg/kg
Test: LC50 - Route: Inhalation Vapour - Species: Rat > 23.5 mg/l

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.

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The product is classified: Aquatic Chronic 3 - H412

xylene (mixed isomers) - CAS: 1330-20-7

a) Aquatic acute toxicity:

Endpoint: LC50 - Species: Fish = 2.6 mg/l - Duration h: 96

Endpoint: EC50 - Species: Daphnia = 1 mg/l - Duration h: 24

Endpoint: EC50 - Species: Algae = 1.3 mg/l - Duration h: 72

Hexamethylene diisocyanate, oligomerisation product (isocyanurate type) - CAS: 28182-81-2

a) Aquatic acute toxicity:

Endpoint: LC50 - Species: Fish > 100 mg/l - Duration h: 96

Endpoint: EC50 - Species: Daphnia > 100 mg/l - Duration h: 48

Endpoint: EC50 - Species: Algae > 1000 mg/l - Duration h: 72

n-butyl acetate - CAS: 123-86-4

a) Aquatic acute toxicity:

Endpoint: LC50 - Species: Fish = 18 mg/l - Duration h: 96 - Notes: Metodo: OECD 203

Endpoint: EC50 - Species: Algae = 675 mg/l - Duration h: 72

Endpoint: EC50 - Species: Daphnia = 44 mg/l - Duration h: 48

b) Aquatic chronic toxicity:

Endpoint: NOEC - Species: Algae = 200 mg/l - Duration h: 72 - Notes: Acqua dolce (non salina) Valore sperimentale

2-methoxy-1-methylethyl acetate - CAS: 108-65-6

a) Aquatic acute toxicity:

Endpoint: LC50 - Species: Fish = 134 mg/l - Duration h: 96

Endpoint: EC50 - Species: Algae > 1000 mg/l - Duration h: 72

Endpoint: EC50 - Species: Daphnia > 500 mg/l - Duration h: 48

b) Aquatic chronic toxicity:

Endpoint: NOEC - Species: Fish = 47.5 mg/l - Notes: 14 d

Endpoint: NOEC - Species: Daphnia > 100 mg/l - Notes: 21 d

12.2. Persistence and degradability

None

n-butyl acetate - CAS: 123-86-4

Biodegradability: Readily biodegradable

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- 2-methoxy-1-methylethyl acetate - CAS: 108-65-6
Biodegradability: Readily biodegradable
- 12.3. Bioaccumulative potential
n-butyl acetate - CAS: 123-86-4
Test: BCF - Bioconcentration factor 15.3
Test: Kow - Partition coefficient 2.3 - Notes: n-ottanolo/acqua
- 12.4. Mobility in soil
2-methoxy-1-methylethyl acetate - CAS: 108-65-6
Mobility in soil: Mobile
- 12.5. Results of PBT and vPvB assessment
vPvB Substances: None - PBT Substances: None
- 12.6. Endocrine disrupting properties
No endocrine disruptor substances present in concentration $\geq 0.1\%$
- 12.7. Other adverse effects
None

SECTION 13: Disposal considerations

- 13.1. Waste treatment methods
Recycle/Recover if possible. Send to authorized disposal or recovery facilities. Operate according to local and national regulations.

PRODUCT DISPOSAL: If recycling or reuse is not possible, send for recovery or disposal in authorized facilities. Comply with all local and national regulations.

DISPOSAL OF PACKAGING: Dispose the contaminated packaging in the same way as the product. Send empty and cleaned packaging for disposal or recovery in compliance with applicable local and national regulations.

DISPOSAL INFORMATION: Do not pour directly or indirectly into bodies of water, groundwater, soil or public treatment plant.

SECTION 14: Transport information



- 14.1. UN number or ID number
ADR-UN Number: 1263
IATA-UN Number: 1263
IMDG-UN 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
ADR - Hazard identification number: 30
IATA-Class: 3
IATA-Label: 3
IMDG-Class: 3
- 14.4. Packing group
ADR-Packing Group: III
IATA-Packing group: III
IMDG-Packing group: III
- 14.5. Environmental hazards



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ADR-Environmental Pollutant:	No
IMDG-Marine pollutant:	No
IMDG-EmS:	F-E , <u>S-E</u>
14.6. Special precautions for user	
ADR-Subsidiary hazards:	-
ADR-S.P.:	163 367 650
ADR-Transport category (Tunnel restriction code):	3 (D/E)
IATA-Passenger Aircraft:	355
IATA-Subsidiary hazards:	-
IATA-Cargo Aircraft:	366
IATA-S.P.:	A3 A72 A192
IATA-ERG:	3L
IMDG-Subsidiary hazards:	-
IMDG-Stowage and handling:	Category A
IMDG-Segregation:	-
14.7. Maritime transport in bulk according to IMO instruments	
N.A.	

SECTION 15: Regulatory information

- 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
- Dir. 98/24/EC (Risks related to chemical agents at work)
 - Dir. 2000/39/EC (Occupational exposure limit values)
 - Regulation (EC) n. 1907/2006 (REACH)
 - Regulation (EC) n. 1272/2008 (CLP)
 - Regulation (EC) n. 790/2009 (ATP 1 CLP) and (EU) n. 758/2013
 - Regulation (EU) n. 2020/878
 - Regulation (EU) n. 286/2011 (ATP 2 CLP)
 - Regulation (EU) n. 618/2012 (ATP 3 CLP)
 - Regulation (EU) n. 487/2013 (ATP 4 CLP)
 - Regulation (EU) n. 944/2013 (ATP 5 CLP)
 - Regulation (EU) n. 605/2014 (ATP 6 CLP)
 - Regulation (EU) n. 2015/1221 (ATP 7 CLP)
 - Regulation (EU) n. 2016/918 (ATP 8 CLP)
 - Regulation (EU) n. 2016/1179 (ATP 9 CLP)
 - Regulation (EU) n. 2017/776 (ATP 10 CLP)
 - Regulation (EU) n. 2018/669 (ATP 11 CLP)
 - Regulation (EU) n. 2018/1480 (ATP 13 CLP)
 - Regulation (EU) n. 2019/521 (ATP 12 CLP)
 - Regulation (EU) n. 2020/217 (ATP 14 CLP)
 - Regulation (EU) n. 2020/1182 (ATP 15 CLP)
 - Regulation (EU) n. 2021/643 (ATP 16 CLP)
 - Regulation (EU) n. 2021/849 (ATP 17 CLP)
 - Regulation (EU) n. 2022/692 (ATP 18 CLP)

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:

Restriction 3

Restriction 40

Restrictions related to the substances contained:

Restriction 30

Restriction 74

Restriction 75

Volatile Organic compounds - VOCs = 63.25 %

Volatile Organic compounds - VOCs = 609.03 g/l

Volatile CMR substances = 0.00 %

Halogenated VOCs which are assigned the risk phrase R40 = 0.00 %



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Organic Carbon - C = 0.50

Where applicable, refer to the following regulatory provisions :

Regulation (EU) 2019/1148 on the marketing and use of explosives precursors

Directive 2012/18/EU (Seveso III)

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

Dir. 2004/42/EC (VOC directive)

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

Seveso III category according to Annex 1, part 1

Product belongs to category: P5c

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:

xylene (mixed isomers)

SECTION 16: Other information

Full text of phrases referred to in Section 3:

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

H315 Causes skin irritation.

Hazard class and hazard category	Code	Description
Flam. Liq. 3	2.6/3	Flammable liquid, Category 3
Acute Tox. 4	3.1/4/Dermal	Acute toxicity (dermal), Category 4
Acute Tox. 4	3.1/4/Inhal	Acute toxicity (inhalation), Category 4
Asp. Tox. 1	3.10/1	Aspiration hazard, Category 1
Skin Irrit. 2	3.2/2	Skin irritation, Category 2
Eye Irrit. 2	3.3/2	Eye irritation, Category 2
Resp. Sens. 1	3.4.1/1	Respiratory Sensitisation, Category 1
Skin Sens. 1	3.4.2/1	Skin Sensitisation, Category 1
STOT SE 3	3.8/3	Specific target organ toxicity - single exposure, Category 3
STOT RE 2	3.9/2	Specific target organ toxicity - repeated exposure, Category 2
Aquatic Chronic 3	4.1/C3	Chronic (long term) aquatic hazard, category 3

This safety data sheet has been completely updated in compliance to Regulation 2020/878.
Paragraphs modified from the previous revision:

SECTION 2: Hazards identification

SECTION 3: Composition/information on ingredients

SECTION 8: Exposure controls/personal protection

SECTION 9: Physical and chemical properties



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SECTION 11: Toxicological information
SECTION 12: Ecological information
SECTION 15: Regulatory information
SECTION 16: Other information

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
Flam. Liq. 3, H226	On basis of test data
Acute Tox. 4, H332	Calculation method
Skin Irrit. 2, H315	Calculation method
Eye Irrit. 2, H319	Calculation method
Skin Sens. 1, H317	Calculation method
STOT SE 3, H335	Calculation method
STOT SE 3, H336	Calculation method
STOT RE 2, H373	Calculation method
Asp. Tox. 1, H304	Calculation method
Aquatic Chronic 3, H412	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.

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
ATE: Acute Toxicity Estimate
ATEmix: Acute toxicity Estimate (Mixtures)
CAS: Chemical Abstracts Service (division of the American Chemical Society).
CLP: Classification, Labeling, Packaging.
DNEL: Derived No Effect Level.
EINECS: European Inventory of Existing Commercial Chemical Substances.
GefStoffVO: Ordinance on Hazardous Substances, Germany.
GHS: Globally Harmonized System of Classification and Labeling of Chemicals.
IATA: International Air Transport Association.
IATA-DGR: Dangerous Goods Regulation by the "International Air Transport



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ICAO:	Association" (IATA). 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.
KSt:	Explosion coefficient.
LC50:	Lethal concentration, for 50 percent of test population.
LD50:	Lethal dose, for 50 percent of test population.
PNEC:	Predicted No Effect Concentration.
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.
TWA:	Time-weighted average
WGK:	German Water Hazard Class.

Exposure Scenario, 24/10/2019

Substance identity	
Chemical name	xilene (miscela di o-,m-,p-xilene e Etilbenzene)
CAS No.	1330-20-7
INDEX No.	601-022-00-9
EINECS No.	215-535-7

Table of contents

1. **ES 1** Use at industrial site; Coatings and paints, thinners, paint removers (PC9a); Solvent-based process
2. **ES 2** Widespread use by professional workers; Coatings and paints, thinners, paint removers (PC9a); Solvent-based process
3. **ES 3** Consumer use; Coatings and paints, thinners, paint removers (PC9a); Solvent-based process

1. ES 1

Use at industrial site; Coatings and paints, thinners, paint removers (PC9a); Solvent-based process

1.1 TITLE SECTION

Exposure Scenario name	Use in coatings
Date - Version	01/07/2019 - 1.0
Life Cycle Stage	Use at industrial site
Main user group	Industrial uses
Sector(s) of use	Industrial uses (SU3)
Product Categories	Coatings and paints, thinners, paint removers (PC9a)

Environment Contributing Scenario

CS1 Solvent-based process	ERC4
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Worker Contributing Scenario

CS2 Film formation - air drying	PROC4
CS3 Preparation of material for application - Mixing operations - Open systems	PROC5
CS4 Spraying	PROC7
CS5 Hand held spraying	PROC7
CS6 Material transfers	PROC9
CS7 Roller, spreader, flow application	PROC10
CS8 Dipping, immersion and pouring	PROC13

1.2 Conditions of use affecting exposure

1.2. CS1: Environment Contributing Scenario: Solvent-based process (ERC4)

Environmental release categories	Use of non-reactive processing aid at industrial site (no inclusion into or onto article) (ERC4)
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Amount used, frequency and duration of use (or from service life)

Amounts used:

Annual site tonnage = 5000 t(tonnes)/year

Maximum allowable site tonnage (MSafe): 17000 kg/day

Critical compartment for Msafe: soil

Release type: Continuous release

Emission days: 300 days per year

Technical and organisational conditions and measures

Control measures to prevent releases

Treat air emission to provide the required removal efficiency of (%):	Air - minimum efficiency of: = 90 %
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Prevent discharge of undissolved substance to or recover from onsite wastewater.
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Conditions and measures related to sewage treatment plant

STP type:

Onsite Sewage Treatment Plant

Water - minimum efficiency of: = 93.6 %

STP effluent (m³/day): 2000***Conditions and measures related to treatment of waste (including article waste)*****Waste treatment**

External treatment and disposal of waste should comply with applicable local and/or national regulations.

External recovery and recycling of waste should comply with applicable local and/or national 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:**

For further specification, refer to section 8 of the SDS.

Additional conditions human health

Volatile compounds subject to air emission controls.

1.2. CS2: Worker Contributing Scenario: Film formation - air drying (PROC4)**Process Categories**

Chemical production where opportunity for exposure arises (PROC4)

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 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**

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Ensure operatives are trained to minimise exposures.

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

Wear suitable face shield.

Wear an impervious suit.

Wear suitable gloves tested to EN374.

For further specification, refer to section 8 of the SDS.

Additional conditions human health

Assumes a good basic standard of occupational hygiene is implemented.

Other conditions affecting worker exposure

Covers indoor and outdoor use

Temperature: Assumes process temperature up to 40°C***Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.*****Additional Good Practice Advice:**

Supervision in place to check that the risk management measures in place are being used correctly and operation conditions followed.

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

Ensure control measures are regularly inspected and maintained.

1.2. CS3: Worker Contributing Scenario: Preparation of material for application - Mixing operations - Open systems (PROC5)

Process Categories Mixing or blending in batch processes (PROC5)

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 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

Provide a good standard of controlled ventilation (10 to 15 air changes per hour).

Ensure operatives are trained to minimise exposures.

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

Personal protection

Wear suitable face shield.

Wear an impervious suit.

Wear suitable gloves tested to EN374.

For further specification, refer to section 8 of the SDS.

Additional conditions human health

Assumes a good basic standard of occupational hygiene is implemented.

Other conditions affecting worker exposure

Covers indoor and outdoor use

Temperature: Assumes process temperature up to 40°C

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

Additional Good Practice Advice:

Supervision in place to check that the risk management measures in place are being used correctly and operation conditions followed.

Clear spills immediately. Site should have a spill plan to ensure that adequate safeguards are in place to minimize the impact of episodic releases. Ensure control measures are regularly inspected and maintained.

1.2. CS4: Worker Contributing Scenario: Spraying (PROC7)

Process Categories Industrial spraying (PROC7)

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 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

Carry out in a vented booth provided with laminar airflow.
Ensure operatives are trained to minimise exposures.

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

Personal protection

Wear suitable face shield.
Wear an impervious suit.
Wear suitable gloves tested to EN374.
For further specification, refer to section 8 of the SDS.

Additional conditions human health

Assumes a good basic standard of occupational hygiene is implemented.

Other conditions affecting worker exposure

Covers indoor and outdoor use

Temperature: Assumes process temperature up to 40°C

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

Additional Good Practice Advice:

Supervision in place to check that the risk management measures in place are being used correctly and operation conditions followed.
Clear spills immediately. Site should have a spill plan to ensure that adequate safeguards are in place to minimize the impact of episodic releases. Ensure control measures are regularly inspected and maintained.

1.2. CS5: Worker Contributing Scenario: Hand held spraying (PROC7)

Process Categories

Industrial spraying (PROC7)

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 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

Provide a good standard of controlled ventilation (10 to 15 air changes per hour).
Ensure operatives are trained to minimise exposures.

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

Personal protection

Wear suitable face shield.
Wear an impervious suit.
Wear suitable gloves tested to EN374.
Wear a respirator conforming to EN140.
For further specification, refer to section 8 of the SDS.

Additional conditions human health

Assumes a good basic standard of occupational hygiene is implemented.

Other conditions affecting worker exposure

Covers indoor and outdoor use

Temperature: Assumes process temperature up to 40°C

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

Additional Good Practice Advice:

Supervision in place to check that the risk management measures in place are being used correctly and operation conditions followed.
Clear spills immediately. Site should have a spill plan to ensure that adequate safeguards are in place to minimize the impact of episodic releases. Ensure control measures are regularly inspected and maintained.

1.2. CS6: Worker Contributing Scenario: Material transfers (PROC9)**Process Categories**

Transfer of substance or mixture into small containers (dedicated filling line, including weighing) (PROC9)

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 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 material transfers are under containment or extract ventilation.
Ensure operatives are trained to minimise exposures.

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

Wear suitable face shield.
Wear an impervious suit.
Wear suitable gloves tested to EN374.
For further specification, refer to section 8 of the SDS.

Additional conditions human health

Assumes a good basic standard of occupational hygiene is implemented.

Other conditions affecting worker exposure

Covers indoor and outdoor use

Temperature: Assumes process temperature up to 40°C

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.**Additional Good Practice Advice:**

Supervision in place to check that the risk management measures in place are being used correctly and operation conditions followed.
Clear spills immediately. Site should have a spill plan to ensure that adequate safeguards are in place to minimize the impact of episodic releases. Ensure control measures are regularly inspected and maintained.

1.2. CS7: Worker Contributing Scenario: Roller, spreader, flow application (PROC10)**Process Categories**

Roller application or brushing (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 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**

Provide extract ventilation to points where emissions occur.
Ensure operatives are trained to minimise exposures.

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

Wear suitable face shield.
Wear an impervious suit.
Wear suitable gloves tested to EN374.
For further specification, refer to section 8 of the SDS.

Additional conditions human health

Assumes a good basic standard of occupational hygiene is implemented.

Other conditions affecting worker exposure

Covers indoor and outdoor use

Temperature: Assumes process temperature up to 40°C

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.**Additional Good Practice Advice:**

Supervision in place to check that the risk management measures in place are being used correctly and operation conditions followed.
Clear spills immediately. Site should have a spill plan to ensure that adequate safeguards are in place to minimize the impact of episodic releases. Ensure control measures are regularly inspected and maintained.

1.2. CS8: Worker Contributing Scenario: Dipping, immersion and pouring (PROC13)**Process Categories**

Treatment of articles by dipping and pouring (PROC13)

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 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**

Provide a good standard of controlled ventilation (10 to 15 air changes per hour).
Ensure operatives are trained to minimise exposures.

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

Wear suitable face shield.
Wear an impervious suit.
Wear suitable gloves tested to EN374.
For further specification, refer to section 8 of the SDS.

Additional conditions human health

Assumes a good basic standard of occupational hygiene is implemented.

Other conditions affecting worker exposure

Covers indoor and outdoor use

Temperature: Assumes process temperature up to 40°C

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

Additional Good Practice Advice:

Supervision in place to check that the risk management measures in place are being used correctly and operation conditions followed. Clear spills immediately. Site should have a spill plan to ensure that adequate safeguards are in place to minimize the impact of episodic releases. Ensure control measures are regularly inspected and maintained.

1.3 Exposure estimation and reference to its source

1.3. CS1: Environment Contributing Scenario: Solvent-based process (ERC4)

Release route	Release rate	Release estimation method
Air	9.8 %	N/A
Water	0.7 %	N/A
soil	0 %	N/A

Additional information on exposure estimation:

Common practices vary across sites thus conservative process release estimates used.

1.3. CS2: Worker Contributing Scenario: Film formation - air drying (PROC4)

Additional information on exposure estimation:

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

1.3. CS3: Worker Contributing Scenario: Preparation of material for application - Mixing operations - Open systems (PROC5)

Additional information on exposure estimation:

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

1.3. CS4: Worker Contributing Scenario: Spraying (PROC7)

Additional information on exposure estimation:

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

1.3. CS5: Worker Contributing Scenario: Hand held spraying (PROC7)

Additional information on exposure estimation:

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

1.3. CS6: Worker Contributing Scenario: Material transfers (PROC9)

Additional information on exposure estimation:

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

1.3. CS7: Worker Contributing Scenario: Roller, spreader, flow application (PROC10)

Additional information on exposure estimation:

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

1.3. CS8: Worker Contributing Scenario: Dipping, immersion and pouring (PROC13)

Additional information on exposure estimation:

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

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.

2. ES 2

Widespread use by professional workers; Coatings and paints, thinners, paint removers (PC9a); Solvent-based process

2.1 TITLE SECTION

Exposure Scenario name	Professional application of coatings and inks
Date - Version	01/07/2019 - 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 Solvent-based process	ERC8a
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Worker Contributing Scenario

CS2 Preparation of material for application	PROC5
CS3 Roller, spreader, flow application	PROC10
CS4 Hand held spraying	PROC11
CS5 Dipping, immersion and pouring	PROC13

2.2 Conditions of use affecting exposure

2.2. CS1: Environment Contributing Scenario: Solvent-based process (ERC8a)

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

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

Amounts used:

Annual site tonnage = 10 t(tonnes)/year

Maximum allowable site tonnage (MSafe): 27.4 kg/day

Critical compartment for Msafe: freshwater sediment

Release type: Continuous release

Emission days: 365 days per year

Technical and organisational conditions and measures

Control measures to prevent releases

Prevent discharge of undissolved substance to or recover from onsite wastewater.
Do not apply industrial sludge to natural soils.

Conditions and measures related to sewage treatment plant

STP type:

Onsite Sewage Treatment Plant
Water - minimum efficiency of: = 93.6 %

STP effluent (m³/day): 2000

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

Waste treatment

External treatment and disposal of waste should comply with applicable local and/or national regulations.

External recovery and recycling of waste should comply with applicable local and/or national 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:

Ensure control measures are regularly inspected and maintained. For further specification, refer to section 8 of the SDS.

2.2. CS2: Worker Contributing Scenario: Preparation of material for application (PROC5)

Process Categories

Mixing or blending in batch processes (PROC5)

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 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

Provide a good standard of controlled ventilation (10 to 15 air changes per hour).

Use in contained systems

Avoid carrying out activities involving exposure for more than 1 hour per day.

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

Personal protection

Wear suitable face shield.

Wear an impervious suit.

Wear suitable gloves tested to EN374.

Provide employee with skin care programmes.

For further specification, refer to section 8 of the SDS.

Additional conditions human health

Assumes a good basic standard of occupational hygiene is implemented.

Other conditions affecting worker exposure

Covers indoor and outdoor use

Professional use

Temperature: Assumes process temperature up to 40°C

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

Additional Good Practice Advice:

Clear spills immediately. Ensure control measures are regularly inspected and maintained. For further specification, refer to section 8 of the SDS.

2.2. CS3: Worker Contributing Scenario: Roller, spreader, flow application (PROC10)

Process Categories

Roller application or brushing (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 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**

Provide a good standard of controlled ventilation (10 to 15 air changes per hour).

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

Wear suitable gloves tested to EN374.

Wear an impervious suit.

Wear suitable face shield.

Wear a respirator conforming to EN140.

Provide employee with skin care programmes.

For further specification, refer to section 8 of the SDS.

Additional conditions human health

Assumes a good basic standard of occupational hygiene is implemented.

Other conditions affecting worker exposure

Indoor use

Professional use

Temperature: Assumes process temperature up to 40°C

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.**Additional Good Practice Advice:**

Clear spills immediately. Ensure control measures are regularly inspected and maintained. For further specification, refer to section 8 of the SDS.

2.2. CS4: Worker Contributing Scenario: Hand held spraying (PROC11)**Process Categories**

Non industrial spraying (PROC11)

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 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**

Carry out in a vented booth provided with laminar airflow.

Avoid carrying out activities involving exposure for more than 4 hours per day.

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

Wear suitable gloves tested to EN374.

Wear an impervious suit.

Wear suitable face shield.

Wear a full face respirator conforming to EN136.
Provide employee with skin care programmes.
For further specification, refer to section 8 of the SDS.

Additional conditions human health

Assumes a good basic standard of occupational hygiene is implemented.

Other conditions affecting worker exposure

Covers indoor and outdoor use
Professional use

Temperature: Assumes process temperature up to 40°C

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

Additional Good Practice Advice:

Clear spills immediately. Ensure control measures are regularly inspected and maintained. For further specification, refer to section 8 of the SDS.

2.2. CS5: Worker Contributing Scenario: Dipping, immersion and pouring (PROC13)

Process Categories

Treatment of articles by dipping and pouring (PROC13)

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 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

Provide extract ventilation to points where emissions occur.
Avoid carrying out activities involving exposure for more than 4 hours per day.

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

Personal protection

Wear suitable gloves tested to EN374.
Wear an impervious suit.
Wear a respirator conforming to EN140.
Wear suitable face shield.
Provide employee with skin care programmes.
For further specification, refer to section 8 of the SDS.

Additional conditions human health

Assumes a good basic standard of occupational hygiene is implemented.

Other conditions affecting worker exposure

Covers indoor and outdoor use
Professional use

Temperature: Assumes process temperature up to 40°C

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

Additional Good Practice Advice:

Clear spills immediately. Ensure control measures are regularly inspected and maintained. For further specification, refer to section 8 of the SDS.

2.3 Exposure estimation and reference to its source

2.3. CS1: Environment Contributing Scenario: Solvent-based process (ERC8a)

Release route	Release rate	Release estimation method
Air	98 %	N/A
Water	1 %	N/A
soil	1 %	N/A

Additional information on exposure estimation:

Common practices vary across sites thus conservative process release estimates used.

2.3. CS2: Worker Contributing Scenario: Preparation of material for application (PROC5)

Additional information on exposure estimation:

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

2.3. CS3: Worker Contributing Scenario: Roller, spreader, flow application (PROC10)

Additional information on exposure estimation:

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

2.3. CS4: Worker Contributing Scenario: Hand held spraying (PROC11)

Additional information on exposure estimation:

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

2.3. CS5: Worker Contributing Scenario: Dipping, immersion and pouring (PROC13)

Additional information on exposure estimation:

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

2.4 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.

3. ES 3

Consumer use; Coatings and paints, thinners, paint removers (PC9a); Solvent-based process

3.1 TITLE SECTION

Exposure Scenario name	Consumer application of coatings
Date - Version	01/07/2019 - 1.0
Life Cycle Stage	Consumer use
Main user group	Consumer uses
Sector(s) of use	Consumer uses (SU21)
Product Categories	Coatings and paints, thinners, paint removers (PC9a)

Environment Contributing Scenario

CS1 Solvent-based process	ERC8a
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Consumer Contributing Scenario

CS2 Solvent rich, high solid, water borne paint	PC9a - PC9a_2, PC15_2
CS3 Aerosol spray can	PC9a - PC9a_3, PC15_3
CS4 Removers (paint-, glue-, wall paper-, sealant-remover)	PC9a

3.2 Conditions of use affecting exposure

3.2. CS1: Environment Contributing Scenario: Solvent-based process (ERC8a)

Environmental release categories	Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) (ERC8a)
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*Amount used, frequency and duration of use (or from service life)***Amounts used:**

Annual site tonnage = 10 t(tonnes)/year

Maximum allowable site tonnage (MSafe): 27.4 kg/day**Release type:** Continuous release**Emission days:** 365 days per year*Conditions and measures related to sewage treatment plant***Additional conditions environment**

Solvent-based process	Water - minimum efficiency of: = 93.6 %
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*Conditions and measures related to treatment of waste (including article waste)***Waste treatment**

External treatment and disposal of waste should comply with applicable local and/or national regulations.

External recovery and recycling of waste should comply with applicable local and/or national regulations.

*Other conditions affecting environmental exposure***Local marine water dilution factor:** 100**Local freshwater dilution factor:** 10**Receiving surface water flow:** 2000 m³/day

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

Additional Good Practice Advice:

Sludge is disposed or recovered.

3.2. CS2: Consumer Contributing Scenario: Solvent rich, high solid, water borne paint (PC9a)

Product Categories	Coatings and paints, thinners, paint removers (PC9a)
Product (Sub-)Categories	Solvent rich, high solid, water borne paint (PC9a_2, PC15_2)

Product (article) characteristics

Physical form of product:

Liquid

Vapour pressure:

> 10 Pa

Concentration of substance in product:

Covers concentrations up to 2 %

Amount used, frequency and duration of use/exposure

Amounts used:

For each use event, covers use amounts up to 0.744 kg

Duration:

Exposure duration = 2.2 h

Frequency:

Use frequency = 6 days per year

Other conditions affecting consumers exposure

Covers indoor and outdoor use

Room size: Use in room with a volume of minimum m³: ... = 20 m³

Temperature: Covers use at ambient temperatures.

Ventilation rate: Covers use under typical household ventilation.

3.2. CS3: Consumer Contributing Scenario: Aerosol spray can (PC9a)

Product Categories	Coatings and paints, thinners, paint removers (PC9a)
Product (Sub-)Categories	Aerosol spray can (PC9a_3, PC15_3)

Product (article) characteristics

Physical form of product:

Liquid

Vapour pressure:

> 10 Pa

Concentration of substance in product:

Covers concentrations up to 21 %

Amount used, frequency and duration of use/exposure

Amounts used:

For each use event, covers use amounts up to 0.215 kg

Duration:

Exposure duration = 0.33 h

Frequency:

Use frequency = 2 days per year

Other conditions affecting consumers exposure

Covers indoor and outdoor use

Room size: Use in room with a volume of minimum m³: ... = 34 m³

Temperature: Covers use at ambient temperatures.

Ventilation rate: Covers use under typical household ventilation.

3.2. CS4: Consumer Contributing Scenario: Removers (paint-, glue-, wall paper-, sealant-remover) (PC9a)

Product Categories Coatings and paints, thinners, paint removers (PC9a)

Product (article) characteristics

Physical form of product:

Liquid

Vapour pressure:

> 10 Pa

Concentration of substance in product:

Covers concentrations up to 3 %

Amount used, frequency and duration of use/exposure

Amounts used:

For each use event, covers use amounts up to 0.491 kg

Duration:

Exposure duration = 2 h

Frequency:

Use frequency = 3 days per year

Other conditions affecting consumers exposure

Covers indoor and outdoor use

Room size: Use in room with a volume of minimum m³: ... = 20 m³

Temperature: Covers use at ambient temperatures.

Ventilation rate: Covers use under typical household ventilation.

3.3 Exposure estimation and reference to its source

3.3. CS1: Environment Contributing Scenario: Solvent-based process (ERC8a)

Release route	Release rate	Release estimation method
Air	98.5 %	N/A
Water	1 %	N/A
soil	0.5 %	N/A

3.2. CS2: Consumer Contributing Scenario: Solvent rich, high solid, water borne paint (PC9a)

Additional information on exposure estimation:

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

3.2. CS3: Consumer Contributing Scenario: Aerosol spray can (PC9a)

Additional information on exposure estimation:

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

3.2. CS4: Consumer Contributing Scenario: Removers (paint-, glue-, wall paper-, sealant-remover) (PC9a)

Additional information on exposure estimation:

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in

Section 2 are implemented.

3.4 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.