

SAFETY DATA SHEET

according to REACH Regulation (EC) No. 1907/2006, as amended by UK REACH Regulations SI 2019/758



Pelargonic acid Kosher
10560D

Version / Revision 3.01
Supersedes Version 3.00***

Revision Date 26-Jan-2023
Issuing date 26-Jan-2023

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

1.1. Product identifier

Identification of the substance/preparation

Pelargonic acid Kosher

Chemical Name Nonanoic acid
CAS-No 112-05-0
EC No. 203-931-2

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

Identified uses Distribution of substance
Formulation
cleaning agent
Lubricants and lubricant additives
Intermediate
laboratory chemicals
Industrial processing of articles

Uses advised against None

1.3. Details of the supplier of the safety data sheet

Company/Undertaking Identification **OQ Chemicals GmbH**
Rheinpromenade 4A
D-40789 Monheim
Germany

Product Information Product Stewardship
FAX: +49 (0)208 693 2053
email: sc.psq@oq.com

1.4. Emergency telephone number

Emergency telephone number +44 (0) 1235 239 670 (UK)
available 24/7

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

This substance is classified based on Directive 1272/2008/EC and its amendments (CLP Regulation)

Skin corrosion/irritation Category 2, H315
Serious eye damage/eye irritation Category 2, H319
Environmental hazard Aquatic Chronic 3; H412

Additional information

For full text of Hazard- and EU Hazard-statements see SECTION 16.

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2.2. Label elements

Labelling according to Regulation 1272/2008/EC and its amendments (CLP Regulation).

Hazard pictograms



Signal word

Warning

Hazard statements

H315: Causes skin irritation.
H319: Causes serious eye irritation.
H412: Harmful to aquatic life with long lasting effects.

Precautionary statements

P273: Avoid release to the environment.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P302 + P352: IF ON SKIN: Wash with plenty of soap and water.
P332 + P313: If skin irritation occurs: Get medical advice/ attention.
P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313: If eye irritation persists: Get medical advice/ attention.

2.3. Other hazards

Vapour/air-mixtures are explosive at intense warming

PBT and vPvB assessment

This substance is not considered to be persistent, bioaccumulating nor toxic (PBT), nor very persistent nor very bioaccumulating (vPvB)

Endocrine disrupting assessments

The substance is not listed on the candidate list according to Art. 59(1), REACH. The substance was not assessed as having endocrine disrupting properties according to regulation 2017/2100/EU or 2018/605/EU.

SECTION 3: Composition / information on ingredients

3.1. Substances

| Component | CAS-No | 1272/2008/EC | Concentration (%) |
|-----------------|----------|--|-------------------|
| Pelargonic acid | 112-05-0 | Skin Irrit. 2; H315 Eye Irrit. 2; H319 Aquatic Chronic 3; H412 | > 95,5 |

For full text of Hazard- and EU Hazard-statements see SECTION 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation

Keep at rest. Aerate with fresh air. When symptoms persist or in all cases of doubt seek medical advice.

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Skin

Wash off immediately with soap and plenty of water. When symptoms persist or in all cases of doubt seek medical advice.

Eyes

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses. Immediate medical attention is required.

Ingestion

Call a physician immediately. Do not induce vomiting without medical advice.

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

Main symptoms

cough, headache, nausea, shortness of breath.

Special hazard

Lung irritation, Lung oedema.

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

General advice

Remove contaminated, soaked clothing immediately and dispose of safely. First aider needs to protect himself.

Treat symptomatically. If ingested, flush stomach and compensate acidosis.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

foam, dry chemical, carbon dioxide (CO₂), water spray

Unsuitable Extinguishing Media

Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture

Under conditions giving incomplete combustion, hazardous gases produced may consist of:

carbon monoxide (CO)

carbon dioxide (CO₂)

Combustion gases of organic materials must in principle be graded as inhalation poisons

Vapours are heavier than air and may spread along floors

Vapour/air-mixtures are explosive at intense warming

5.3. Advice for firefighters

Special protective equipment for firefighters

Fire fighter protection should include a self-contained breathing apparatus (NIOSH-approved or EN 133) and full fire-fighting turn out gear.

Precautions for firefighting

Keep people away from and upwind of fire. Cool containers / tanks with water spray. Dike and collect water used to fight fire. Water run-off can cause environmental damage.

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: For personal protective equipment see section 8. Avoid contact with skin and eyes. Avoid breathing vapors or mists. Keep people away from and upwind of spill/leak. Ensure adequate ventilation, especially in confined areas. Keep away from heat and sources of ignition.

For emergency responders: Personal protection see section 8.

6.2. Environmental precautions

Prevent further leakage or spillage. Do not discharge product into the aquatic environment without pretreatment (biological treatment plant). Water runoff can cause environmental damage.

6.3. Methods and material for containment and cleaning up

Methods for containment

Stop the flow of material, if possible without risk. Dike spilled material, where this is possible.

Methods for cleaning up

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. If liquid has been spilt in large quantities clean up promptly by scoop or vacuum. Dispose of in accordance with local regulations. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours).

6.4. Reference to other sections

For personal protective equipment see section 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Further info may be available in the appropriate Exposure scenarios in the annex to this SDS.

Advice on safe handling

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. Provide sufficient air exchange and/or exhaust in work rooms.

Hygiene measures

When using, do not eat, drink or smoke. Take off all contaminated clothing immediately. Wash hands before breaks and immediately after handling the product.

Advice on the protection of the environment

See Section 8: Environmental exposure controls.

Incompatible products

bases
amines
strong oxidizing agents
reducing agents

7.2. Conditions for safe storage, including any incompatibilities

Advice on protection against fire and explosion

Keep away from sources of ignition - No smoking. Take necessary action to avoid static electricity discharge

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(which might cause ignition of organic vapours). In case of fire, emergency cooling with water spray should be available. Ground and bond containers when transferring material. Vapour/air-mixtures are explosive at intense warming.

Technical measures/Storage conditions

Keep containers tightly closed in a cool, well-ventilated place. Handle and open container with care. Keep at temperatures between 16 and 40 °C (60 and 104 °F).

Temperature class

T2

7.3. Specific end use(s)

Distribution of substance

Formulation

cleaning agent

Lubricants and lubricant additives

Intermediate

laboratory chemicals

Industrial processing of articles

For specific end use information see the annex of this safety data sheet

SECTION 8: Exposure controls / personal protection

8.1. Control parameters

Exposure limits European Union

No exposure limits established

Exposure limits UK

No exposure limits established.

DNEL & PNEC

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Workers

DN(M)EL - long-term exposure - systemic effects - Inhalation

DN(M)EL - acute / short-term exposure - systemic effects - Inhalation

DN(M)EL - long-term exposure - local effects - Inhalation

DN(M)EL - acute / short-term exposure - local effects - Inhalation

DN(M)EL - long-term exposure - systemic effects - Dermal

DN(M)EL - acute / short-term exposure - systemic effects - Dermal

DN(M)EL - long-term exposure - local effects - Dermal

DN(M)EL - acute / short-term exposure - local effects - Dermal

DN(M)EL - local effects - eyes

No hazard identified

No hazard identified

Hazard unknown (no further information necessary)

Hazard unknown (no further information necessary)

No hazard identified

No hazard identified

Low hazard (no threshold derived)

Low hazard (no threshold derived)

Low hazard (no threshold derived)

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General population

| | |
|--|---|
| DN(M)EL - long-term exposure - systemic effects - Inhalation | No hazard identified |
| DN(M)EL - acute / short-term exposure - systemic effects - Inhalation | No hazard identified |
| DN(M)EL - long-term exposure - local effects - Inhalation | Hazard unknown (no further information necessary) |
| DN(M)EL - acute / short-term exposure - local effects - Inhalation | Hazard unknown (no further information necessary) |
| DN(M)EL - long-term exposure - systemic effects - Dermal | No hazard identified |
| DN(M)EL - acute / short-term exposure - systemic effects - Dermal | No hazard identified |
| DN(M)EL - long-term exposure - local effects - Dermal | Low hazard (no threshold derived) |
| DN(M)EL - acute / short-term exposure - local effects - Dermal | Medium hazard (no threshold derived) |
| DN(M)EL - long-term exposure - systemic effects - Oral | No hazard identified |
| DN(M)EL - acute / short-term exposure - systemic effects - Oral | No hazard identified |
| DN(M)EL - local effects - eyes | Low hazard (no threshold derived) |

Environment

| | |
|--|----------------------------------|
| PNEC aqua - freshwater | 0,36 mg/l |
| PNEC aqua - marine water | 0,036 mg/l |
| PNEC aqua - intermittent releases | 0,6 mg/l |
| PNEC STP | 1,4 mg/l |
| PNEC sediment - freshwater | 8,5 mg/kg dw |
| PNEC sediment - marine water | 0,85 mg/kg dw |
| PNEC Air | No hazard identified |
| PNEC soil | 1,48 mg/kg dw |
| Secondary poisoning | No potential for bioaccumulation |

8.2. Exposure controls

Special adaptations (REACH)

Not applicable.

Appropriate Engineering controls

General or dilution ventilation is frequently insufficient as the sole means of controlling employee exposure. Local ventilation is usually preferred. Explosion-proof equipment (for example fans, switches, and grounded ducts) should be used in mechanical ventilation systems.

Personal protective equipment

General industrial hygiene practice

Avoid contact with skin, eyes and clothing. Do not breathe vapours or spray mist. Ensure that eyewash stations and safety showers are close to the workstation location.

Hygiene measures

When using, do not eat, drink or smoke. Take off all contaminated clothing immediately. Wash hands before breaks and immediately after handling the product.

Eye protection

Tightly fitting safety goggles. In addition to goggles, wear a face shield if there is a reasonable chance for splash

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to the face.

Equipment should conform to EN 166

Hand protection

Wear protective gloves. Recommendations are listed below. Other protective material may be used, depending on the situation, if adequate degradation and permeation data is available. If other chemicals are used in conjunction with this chemical, material selection should be based on protection for all chemicals present.

| | |
|---------------------------|------------------------------|
| Suitable material | nitrile rubber |
| Evaluation | according to EN 374: level 6 |
| Glove thickness | approx 0,55 mm |
| Break through time | > 480 min |

| | |
|---------------------------|------------------------------------|
| Suitable material | polyvinylchloride / nitrile rubber |
| Evaluation | according to EN 374: level 6 |
| Glove thickness | approx 0,9 mm |
| Break through time | > 480 min |

Skin and body protection

Impervious clothing. Wear face-shield and protective suit for abnormal processing problems.

Environmental exposure controls

If possible use in closed systems. If leakage can not be prevented, the substance needs to be suck off at the emersion point, if possible without danger. Observe the exposure limits, clean exhaust air if needed. If recycling is not practicable, dispose of in compliance with local regulations. Inform the responsible authorities in case of leakage into the atmosphere, or of entry into waterways, soil or drains.

Additional advice

Further details on substance data can be found in the registration dossier under the following link:
<http://echa.europa.eu/information-on-chemicals/registered-substances>. For specific exposure controls see the annex to this safety data sheet.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|---|---|
| Physical state | liquid |
| Colour | colourless |
| Odour | weak |
| Odour threshold | No data available |
| Melting point/freezing point | 13 °C (Pour point) |
| Method | DIN ISO 3016 |
| Boiling point or initial boiling point and boiling range | > 245 - < 266 °C @ 1013 hPa |
| Method | OECD 103 |
| Flammability | Even if not classified as flammable, the product is capable of catching fire or being set on fire.*** |
| Lower explosion limit | 0,8 Vol % |
| Upper explosion limit | 9,0 Vol % |
| Flash point | 137 °C @ 1013 hPa |
| Method | ISO 2719 |
| Autoignition temperature | 355 °C @ 1013 hPa |
| Method | DIN 51794 |
| Decomposition temperature | ≥ 266 °C @ 1013 hPa OECD 103 |
| pH | 4,4 (0,1 g/l in water @ 25 °C (77 °F)) DIN 19268 |

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| | | | | | |
|--|---------------------------------------|--------------|-----------|------|----------------|
| Kinematic Viscosity | 8,972 mm ² /s @ 20 °C | | | | |
| Method | ASTM D445 | | | | |
| Solubility | ≥ 0,3 g/l @ 20 °C, in water, OECD 105 | | | | |
| Partition coefficient | 3,4 (measured) OECD 117 | | | | |
| n-octanol/water (log value) | | | | | |
| Vapour pressure | | | | | |
| Values [hPa] | Values [kPa] | Values [atm] | @ °C | @ °F | Method |
| 1 | 0,1 | 0,001 | 20 | 68 | DIN EN 13016-2 |
| 4,6 | 0,46 | 0,005 | 50 | 122 | DIN EN 13016-2 |
| Density and/or relative density | | | | | |
| Values | @ °C | @ °F | Method | | |
| 0,905 | 20 | 68 | DIN 51757 | | |
| Relative vapour density | 5,5 (Air = 1) @ 20 °C (68 °F) | | | | |
| Particle characteristics | not applicable | | | | |

9.2. Other information

| | |
|------------------------------|---|
| Explosive properties | Does not apply, substance is not explosive. There are no chemical groups associated with explosive properties |
| Oxidizing properties | Does not apply, substance is not oxidising. There are no chemical groups associated with oxidizing properties |
| Molecular weight | 158,23 |
| Molecular formula | C ₉ H ₁₈ O ₂ |
| log K_{oc} | 2 @ pH 7 |
| Dissociation constant | pK _a not determinable due to low water solubility @ 20°C (68°F) |
| Refractive index | 1,433 @ 20 °C |
| Surface tension | 31,7 mN/m (0,27 g/l @ 20°C (68°F)), OECD 115 |
| Evaporation rate | No data available |

SECTION 10: Stability and Reactivity

10.1. Reactivity

The reactivity of the product corresponds to the typical reactivity shown by the substance group as described in any text book on organic chemistry.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

Hazardous polymerisation does not occur.

10.4. Conditions to avoid

Avoid contact with heat, sparks, open flame and static discharge. Avoid any source of ignition.

10.5. Incompatible materials

bases, amines, strong oxidizing agents, reducing agents.

10.6. Hazardous decomposition products

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No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

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

Likely routes of exposure Ingestion, Inhalation, Eye contact, Skin contact

| Acute toxicity | | | | |
|-----------------------------------|----------|-------------------|------------------|----------|
| Pelargonic acid (112-05-0) | | | | |
| Routes of Exposure | Endpoint | Values | Species | Method |
| Oral | LD50 | > 2000 mg/kg | rat, male/female | OECD 423 |
| Oral | LD0 | 2000 mg/kg | rat, male/female | OECD 423 |
| Dermal | LD50 | > 2000 mg/kg | rat, male/female | OECD 402 |
| Dermal | LD0 | 2000 mg/kg | rat, male/female | OECD 402 |
| Inhalative | LC50 | > 5,997 mg/l (4h) | rat, male/female | OECD 403 |

Pelargonic acid, CAS: 112-05-0

Assessment

Based on available data, the classification criteria are not met for:

Acute oral toxicity
Acute dermal toxicity
Acute inhalation toxicity
STOT SE

| Irritation and corrosion | | | | |
|-----------------------------------|---------|------------|----------|----|
| Pelargonic acid (112-05-0) | | | | |
| Target Organ Effects | Species | Result | Method | |
| Skin | rabbit | irritating | OECD 404 | 4h |
| Eyes | rabbit | irritating | | |

Pelargonic acid, CAS: 112-05-0

Assessment

The available data lead to the classification given in section 2

| Sensitization | | | | |
|-----------------------------------|------------|-----------------|----------|------|
| Pelargonic acid (112-05-0) | | | | |
| Target Organ Effects | Species | Evaluation | Method | |
| Skin | guinea pig | not sensitizing | OECD 406 | 25 % |
| Skin | mouse | not sensitizing | OECD 429 | |

Pelargonic acid, CAS: 112-05-0

Assessment

Based on available data, the classification criteria are not met for:

Skin sensitization
For respiratory sensitization, no data are available

| Subacute, subchronic and prolonged toxicity | | | | |
|--|---------------------------|------------------|---------------|-------------------|
| Pelargonic acid (112-05-0) | | | | |
| Type | Dose | Species | Method | |
| Subacute toxicity | NOAEL: 1000 mg/kg/d (28d) | rat, male/female | OECD 407 Oral | Systemic toxicity |
| Subchronic toxicity | NOAEL: 5074 | rat | OECD 408 Oral | Systemic toxicity |

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| | | | | |
|--|---------------|--|--|-------------|
| | mg/kg/d (90d) | | | read across |
|--|---------------|--|--|-------------|

Pelargonic acid, CAS: 112-05-0

Assessment

Based on available data, the classification criteria are not met for:
STOT RE

| Carcinogenicity, Mutagenicity, Reproductive toxicity | | | | | |
|---|--------------------|------------------------|---|------------------------------------|--|
| Pelargonic acid (112-05-0) | | | | | |
| Type | Dose | Species | Evaluation | Method | |
| Mutagenicity | | Salmonella typhimurium | negative (with metabolic activation) negative (without metabolic activation) | OECD 471 (Ames) | |
| Mutagenicity | | human lymphocytes | negative (with metabolic activation) negative (without metabolic activation) | OECD 473 (Chromosomal Aberration) | |
| Developmental Toxicity | NOAEL 1500 mg/kg/d | rat | | OECD 414 | Maternal toxicity, Fetal toxicity Teratogenicity |
| Developmental Toxicity | NOAEL 425 mg/kg/d | rabbit | | OECD 414 | Maternal toxicity, Developmental toxicity, Teratogenicity read across |
| Reproductive toxicity | NOAEL 4700 mg/kg/d | mouse | | OECD 416 | read across |
| Mutagenicity | | mouse lymphoma cells | negative (without metabolic activation) | OECD 476 (Mammalian Gene Mutation) | |

Pelargonic acid, CAS: 112-05-0

CMR Classification

The available data on CMR properties are summarized in the table above. They do not indicate a classification into categories 1A or 1B

Evaluation

In vitro tests showed mutagenic effects
Animal testing did not show any effects on fertility

Pelargonic acid, CAS: 112-05-0

Main symptoms

cough, headache, nausea, shortness of breath.

Target Organ Systemic Toxicant - Single exposure

Based on available data, the classification criteria are not met for:
STOT SE

Target Organ Systemic Toxicant - Repeated exposure

Based on available data, the classification criteria are not met for:
STOT RE

Aspiration toxicity

Due to the viscosity, this product does not present an aspiration hazard

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11.2. Information on other hazards

Endocrine disrupting properties

The substance has not been identified as having endocrine disrupting properties in accordance with section 2.3.

Note

Handle in accordance with good industrial hygiene and safety practice. Further details on substance data can be found in the registration dossier under the following link:

<http://echa.europa.eu/information-on-chemicals/registered-substances>.

SECTION 12: Ecological information

12.1. Toxicity

| Acute aquatic toxicity | | | |
|--------------------------------------|---------------|-----------------------------|----------------------|
| Pelargonic acid (112-05-0) | | | |
| Species | Exposure time | Dose | Method |
| Pimephales promelas (fathead minnow) | 96h | LC50: 104 mg/l | OECD 203 |
| Daphnia magna (Water flea) | 48h | EC50: 96 mg/l | EPA OPP 72-2 |
| Pseudokirchneriella subcapitata | 72h | EC50: 60 mg/l (Growth rate) | OECD 201 read across |
| Activated sludge (domestic) | 28 d | NOEC: \geq 14 mg/l | OECD 301B |

| Long term toxicity | | | | |
|----------------------------|---------------------------------|---------------------------------|----------|-------------|
| Pelargonic acid (112-05-0) | | | | |
| Type | Species | Dose | Method | |
| Reproductive toxicity | Daphnia magna (Water flea) | NOEC: 18 mg/l (21d) | OECD 211 | read across |
| Reproductive toxicity | Daphnia magna (Water flea) | EC50: 47 mg/l/21d | OECD 211 | read across |
| Aquatic toxicity | Pseudokirchneriella subcapitata | NOAEC: 29 mg/l (3d) Growth rate | OECD 201 | read across |

| Terrestrial toxicity | | | | |
|---------------------------------------|---------------|-----------------------|-----------|--------------|
| Pelargonic acid (112-05-0) | | | | |
| Species | Exposure time | Dose | Type | Method |
| Colinus virginianus (bobwhite quail). | 8 d | LC50: > 5620 ppm | Mortality | EPA OPP 71-2 |
| Colinus virginianus (bobwhite quail). | 14 d | LD50: > 2250 mg/kg bw | Mortality | EPA OPP 72-1 |
| Anas platyrhynchos (mallard duck) | 8 d | LC50: > 5620 ppm | Mortality | |

12.2. Persistence and degradability

Pelargonic acid, CAS: 112-05-0

Biodegradation

68 - 75 % (28 d), activated sludge (domestic), aerobic, non-adapted, OECD 301 B.

Abiotic Degradation

| Pelargonic acid (112-05-0) | | |
|----------------------------|--------|--------|
| Type | Result | Method |

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| | | |
|------------|--|------------|
| Hydrolysis | not expected | |
| Photolysis | No data available Half-life (DT50): 1,64 days | calculated |

12.3. Bioaccumulative potential

| Pelargonic acid (112-05-0) | | |
|----------------------------|---------------------|--------------------|
| Type | Result | Method |
| log Pow | 3,4 @ 25 °C (77 °F) | measured, OECD 117 |
| BCF | 3,162 | calculated |

12.4. Mobility in soil

| Pelargonic acid (112-05-0) | | |
|--|---------------------------------------|------------|
| Type | Result | Method |
| Surface tension | 31,7 mN/m (0,27 g/l @ 20°C (68°F)) | OECD 115 |
| Adsorption/Desorption | log Koc: 2 @ pH 7 | calculated |
| Distribution to environmental compartments | no data available | |

12.5. Results of PBT and vPvB assessment

Pelargonic acid, CAS: 112-05-0
PBT and vPvB assessment

This substance is not considered to be persistent, bioaccumulating nor toxic (PBT), nor very persistent nor very bioaccumulating (vPvB)

12.6. Endocrine disrupting properties

The substance has not been identified as having endocrine disrupting properties in accordance with section 2.3.

12.7. Other adverse effects

Pelargonic acid, CAS: 112-05-0
No data available

Note

Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product Information

Disposal required in compliance with all waste management related state and local regulations. The choice of the appropriate method of disposal depends on the product composition by the time of disposal as well as the local statutes and possibilities for disposal.

Hazardous waste according to European Waste Catalogue (EWC)

Uncleaned empty packaging

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Contaminated packaging should be emptied as far as possible and after appropriate cleansing may be taken for reuse.

SECTION 14: Transport information

Section 14.1 - 14.6

ADR/RID Not restricted

ADN ADN Container
Not restricted

ICAO-TI / IATA-DGR Not restricted

IMDG Not restricted

14.7. Maritime transport in bulk according to IMO instruments

| | |
|--------------------|---------------|
| Product name | Nonanoic acid |
| Ship type | 3 |
| Pollution category | Y |
| Hazard class | S/P |

SECTION 15: Regulatory information

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

Regulation 1272/2008, Annex VI

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| | |
|--------------------------|--|
| Classification | Skin Irrit. 2; H315 Eye Irrit. 2; H319 Aquatic Chronic 3; H412 |
| Hazard pictograms | GHS07 Exclamation mark |
| Signal word | Warning |
| Hazard statements | H315, H319, H412 |

DI 2012/18/EU (Seveso III)

Category not subject

DI 1999/13/EC (VOC Guideline)

| Component | Status |
|----------------------------------|-----------|
| Pelargonic acid CAS: 112-05-0 | regulated |

The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019 No. 758

| Component | Status |
|----------------------------------|---|
| Pelargonic acid CAS: 112-05-0 | The substance is/will be pre-registered |

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For details and further information please refer to the original regulation.

International Inventories

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AICS (AU)
DSL (CA)
IECSC (CN)
EC-No. 2039312 (EU)
ENCS (2)-608 (JP)
ISHL (2)-608 (JP)
KECI KE-26163 (KR)
INSQ (MX)
PICCS (PH)
TSCA (US)
NZIoC (NZ)
TCSI (TW)

National regulatory information Great Britain

Releases to air (Pollution Inventory Substances)

not subject

Releases to water (Pollution Inventory Substances)

not subject

Releases to sewer (Pollution Inventory Substances)

not subject

For details and further information please refer to the original regulation

15.2. Chemical safety assessment

The Chemical Safety Report (CSR) has been generated. For Exposure Scenarios see the annex.

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3

H315: Causes skin irritation.
H319: Causes serious eye irritation.
H412: Harmful to aquatic life with long lasting effects.

Abbreviations

A table of terms and abbreviations can be found under the following link:
http://echa.europa.eu/documents/10162/13632/information_requirements_r20_en.pdf

Training advice

For effective first-aid, special training / education is needed.

Sources of key data used to compile the datasheet

Information contained in this safety data sheet is based on OQ owned data and public sources deemed valid or acceptable. The absence of data elements required by OSHA, ANSI or Annex II, Regulation 1907/2006/EC

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indicates, that no data meeting these requirements is available.

Further information for the safety data sheet

Changes against the previous version are marked by ***. Observe national and local legal requirements. For more information, other material safety data sheets or technical data sheets please consult the OQ homepage (www.chemicals.oq.com).

Disclaimer

For industrial use only. The information contained herein is accurate to the best of our knowledge. We do not suggest or guarantee that any hazards listed herein are the only ones which exist. OQ Chemicals makes no warranty of any kind, express or implied, concerning the safe use of this material in your process or in combination with other substances. User has the sole responsibility to determine the suitability of the materials for any use and the manner of use contemplated. User must meet all applicable safety and health standards.

End of Safety Data Sheet

Annex to the extended Safety Data Sheet (eSDS)

Exposure scenario identification

- 1 **Formulation & (re)packing of substances and mixtures**
- 2 **Use in Cleaning Products**
- 3 **Use in Cleaning Products**
- 4 **Lubricants**
- 5 **Lubricants**
- 6 **Industrial use resulting in manufacture of another substance (use of intermediates)**
- 7 **Use in laboratories**
- 8 **Industrial processing of articles**
- 9 **Industrial processing of articles**
- 10 **Industrial processing of articles**

Number of the ES 1

Short title of the exposure scenario

Formulation & (re)packing of substances and mixtures

List of use descriptors

Sector of uses [SU]

SU10: Formulation [mixing] of preparations and/or re-packaging (excluding alloys)

Process categories [PROC]

PROC1: Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional controlled exposure

PROC3: Use in closed batch process (synthesis or formulation)

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PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises
PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)
PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities
PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
PROC13: Treatment of articles by dipping and pouring
PROC14: production of preparations or articles by tableting, compression, extrusion, pelettisation
PROC15: Use as laboratory reagent

Environmental release categories [ERC]

ERC2: Formulation of preparations (mixtures)

Product characteristics

Refer to attached safety data sheets

Processes and activities covered by the exposure scenario

Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tableting, compression, pellettisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities.

Further explanations

Industrial use

Human health hazard assessment:

For concentrations below 10 %, the mixture is not hazardous with respect to the substance, no RMM/OCs are necessary

Contributing Scenarios

Number of the contributing scenario

1

Contributing exposure scenario controlling environmental exposure for ERC 2

Further specification

Chesar 2.2, release factors for (Sp)ERC were modified.

Product characteristics

Covers percentage substance in the product up to 100 % (unless stated differently).

Amounts used

Daily amount per site: 2 to

Annual amount per site: 200 to

Fraction of Regional tonnage used locally: 1

Environment factors not influenced by risk management

River flow rate: 18000 m³/d Local freshwater dilution factor: 10 Local marine water dilution factor: 100

Other given operational conditions affecting environmental exposure

Indoor/Outdoor use

Technical conditions and measures at process level (source) to prevent release

Release fraction to air from process: 2.5 %

Release fraction to wastewater from process: 0.9 %

Release fraction to soil from process: 0.01%

Conditions and measures related to municipal sewage treatment plant

Size of municipal sewage system/ treatment plant (m³/d): 2000

The minimum grade of elimination in the sewage plant is (%): 87.5

Conditions and measures related to external treatment of waste for disposal

none

Conditions and measures related to external recovery of waste

none

Number of the contributing scenario

2

Contributing exposure scenario controlling worker exposure for

PROC 1, PROC 2, PROC 3, PROC 4, PROC 5, PROC 8a, PROC 8b, PROC 9, PROC 14, PROC 15

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Further specification

Qualitative approach used to conclude safe use.

Product characteristics

Covers percentage substance in the product: $\geq 10\%$

Frequency and duration of use

8 h (full shift)

Other given operational conditions affecting workers exposure

Indoor and outdoor use

Organisational measures to prevent /limit releases, dispersion and exposure

Regular cleaning of equipment and work area

Supervision in place to check that the RMMs in place are being used correctly and OCs followed.

Training for staff on good practice

Good standard of personal hygiene

Minimization of manual phases

Work procedures minimizing of splashes and spills

Avoidance of contact with contaminated tools and objects

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

Full skin coverage with appropriate light-weight barrier material. Wear suitable gloves (tested to EN374) and eye protection.

Exposure estimation and reference to its source

Environment

Environment PEC = predicted environmental concentration (local); RCR = risk characterisation ratio

| | |
|--------------------------------------|---------------------------------|
| Fresh Water (Pelagic) | PEC: 0.113 mg/l; RCR: 0.313 |
| Fresh Water (Sediment) | PEC: 1.593 mg/kg dw; RCR: 0.187 |
| Marine Water (Pelagic) | PEC: 0.011 mg/l; RCR: 0.313 |
| Marine Water (Sediment) | PEC: 0.159 mg/kg dw; RCR: 0.187 |
| Agricultural Soil | PEC: 0.255 mg/kg dw; RCR: 0.173 |
| Sewage Treatment Plant (Effluent) | PEC: 1.128 mg/l; RCR: 0.806 |

Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

Usage of release factors allows downstream users to verify in a first approximation, if the combination of local usage and production conditions meets the defined release quantities resulting from this exposure scenario (calculated as $M(\text{site})$ [see amounts used, contributing scenario 1] x release factor [Technical conditions and measures at process level (source) to prevent release; contributing scenario 1])

associated uses:

Should consumer uses be associated with this exposure scenario, please contact OQ for further details

Other combinations of operational conditions may also be safe. Please contact OQ in case your local operational conditions differ from the ones described above and you are unsure if they are also safe

Number of the ES 2

Short title of the exposure scenario

Use in Cleaning Products

List of use descriptors

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Sector of uses [SU]

SU3: Industrial uses: Uses of substances as such or in preparations at industrial sites

Process categories [PROC]

PROC1: Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional controlled exposure

PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

PROC7: Industrial spraying

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

PROC10: Roller application or brushing

PROC13: Treatment of articles by dipping and pouring

PROC15: Use as laboratory reagent

PROC17: Lubrication at high energy conditions and in partly open process

Environmental release categories [ERC]

ERC4: Industrial use of processing aids in processes and products, not becoming part of articles

Product characteristics

Refer to attached safety data sheets

Processes and activities covered by the exposure scenario

Covers the use as a component of cleaning products including pouring/unloading from drums or containers; and exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping, automated and by hand).

Further explanations

Industrial use

Human health hazard assessment:

For concentrations below 10 %, the mixture is not hazardous with respect to the substance, no RMM/OCs are necessary

Contributing Scenarios

Number of the contributing scenario

1

Contributing exposure scenario controlling environmental exposure for ERC 4

Further specification

assessment tool used: Chesar 2.2, release factors for (Sp)ERC were modified.

Product characteristics

Covers percentage substance in the product up to 100 % (unless stated differently).

Amounts used

Daily amount per site: 5 to

Annual amount per site: 100 to

Fraction of Regional tonnage used locally: 1

Environment factors not influenced by risk management

River flow rate: 18000 m³/d Local freshwater dilution factor: 10 Local marine water dilution factor: 100

Other given operational conditions affecting environmental exposure

Indoor/Outdoor use

Technical conditions and measures at process level (source) to prevent release

Release fraction to air from process: 100 %

Release fraction to wastewater from process: 0.3 %

Release fraction to soil from process: 5%

Conditions and measures related to municipal sewage treatment plant

Size of municipal sewage system/ treatment plant (m³/d): 2000

The minimum grade of elimination in the sewage plant is (%): 87.5

Conditions and measures related to external treatment of waste for disposal

none

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Conditions and measures related to external recovery of waste
none

Number of the contributing scenario 2
Contributing exposure scenario controlling worker exposure for
PROC 1, PROC 2, PROC 3, PROC 7, PROC 8a, PROC 8b, PROC 10, PROC 13, PROC 15, PROC 17

Further specification

Qualitative approach used to conclude safe use.

Product characteristics

Covers percentage substance in the product: $\geq 10\%$

Frequency and duration of use

8 h (full shift)

Other given operational conditions affecting workers exposure

Indoor and outdoor use

Organisational measures to prevent /limit releases, dispersion and exposure

Regular cleaning of equipment and work area

Supervision in place to check that the RMMs in place are being used correctly and OCs followed.

Training for staff on good practice

Good standard of personal hygiene

Minimization of manual phases

Work procedures minimizing of splashes and spills

Avoidance of contact with contaminated tools and objects

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

Wear suitable gloves (tested to EN374) and eye protection. Full skin coverage with appropriate light-weight barrier material.

Exposure estimation and reference to its source

Environment

Environment PEC = predicted environmental concentration (local); RCR = risk characterisation ratio

| | |
|-----------------------------------|---------------------------------|
| Fresh Water (Pelagic) | PEC: 0.094 mg/l; RCR: 0.261 |
| Fresh Water (Sediment) | PEC: 1.328 mg/kg dw; RCR: 0.156 |
| Marine Water (Pelagic) | PEC: 0.009 mg/l; RCR: 0.261 |
| Marine Water (Sediment) | PEC: 0.133 mg/kg dw; RCR: 0.156 |
| Agricultural Soil | PEC: 0.226 mg/kg dw; RCR: 0.152 |
| Sewage Treatment Plant (Effluent) | PEC: 0.94 mg/l; RCR: 0.672 |

Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

Usage of release factors allows downstream users to verify in a first approximation, if the combination of local usage and production conditions meets the defined release quantities resulting from this exposure scenario (calculated as $M(\text{site})$ [see amounts used, contributing scenario 1] x release factor [Technical conditions and measures at process level (source) to prevent release; contributing scenario 1])

associated uses:

Should consumer uses be associated with this exposure scenario, please contact OQ for further details

Other combinations of operational conditions may also be safe. Please contact OQ in case your local operational conditions differ from the ones described above and you are unsure if they are also safe

Number of the ES 3

Short title of the exposure scenario

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Use in Cleaning Products

List of use descriptors

Sector of uses [SU]

SU22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

Process categories [PROC]

PROC1: Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional controlled exposure

PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

PROC10: Roller application or brushing

PROC11: Non industrial spraying

PROC13: Treatment of articles by dipping and pouring

PROC15: Use as laboratory reagent

PROC19: Hand-mixing with intimate contact and only PPE available

Environmental release categories [ERC]

ERC8a: Wide dispersive indoor use of processing aids in open systems

ERC8d: Wide dispersive outdoor use of processing aids in open systems

Product characteristics

Refer to attached safety data sheets

Processes and activities covered by the exposure scenario

Covers the use as a component of cleaning products including pouring/unloading from drums or containers; and exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping, automated and by hand).

Further explanations

Professional use

Human health hazard assessment:

For concentrations below 10 %, the mixture is not hazardous with respect to the substance, no RMM/OCs are necessary

Contributing Scenarios

Number of the contributing scenario

1

Contributing exposure scenario controlling environmental exposure for ERC 8a ERC 8d

Further specification

assessment tool used:, Chesar 2.2.

Product characteristics

Covers percentage substance in the product up to 100 % (unless stated differently).

Amounts used

daily wide dispersive use: 5.5E-5 to/d

Amounts used (EU): 10 to/a

Environment factors not influenced by risk management

River flow rate: 18000 m³/d Local freshwater dilution factor: 100 Local marine water dilution factor: 10 3

Other given operational conditions affecting environmental exposure

Indoor/Outdoor use

Technical conditions and measures at process level (source) to prevent release

Release fraction to air from process: 100 %

Release fraction to wastewater from process: 100 %

Release fraction to soil from process: 0%

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Conditions and measures related to municipal sewage treatment plant

Size of municipal sewage system/ treatment plant (m³/d): 2000

The minimum grade of elimination in the sewage plant is (%): 87.5

Conditions and measures related to external treatment of waste for disposal

none

Conditions and measures related to external recovery of waste

none

Number of the contributing scenario

2

Contributing exposure scenario controlling worker exposure for

PROC 1, PROC 2, PROC 4, PROC 8a, PROC 8b, PROC 10, PROC 11, PROC 13, PROC 15, PROC 19

Further specification

Qualitative approach used to conclude safe use.

Product characteristics

Covers percentage substance in the product: $\geq 10\%$

Frequency and duration of use

8 h (full shift)

Other given operational conditions affecting workers exposure

Indoor and outdoor use

Organisational measures to prevent /limit releases, dispersion and exposure

Regular cleaning of equipment and work area

Training for staff on good practice

Good standard of personal hygiene

Minimization of manual phases

Work procedures minimizing of splashes and spills

Avoidance of contact with contaminated tools and objects

Supervision in place to check that the RMMs in place are being used correctly and OCs followed.

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

Full skin coverage with appropriate light-weight barrier material. Wear suitable gloves (tested to EN374) and eye protection.

Environment

PEC = predicted environmental concentration (local); RCR = risk characterisation ratio

| | |
|-----------------------------------|-------------------------------------|
| Fresh Water (Pelagic) | PEC: 3.736E-4 mg/l; RCR: < 0.01 |
| Fresh Water (Sediment) | PEC: 0.005 mg/kg dw; RCR: < 0.01 |
| Marine Water (Pelagic) | PEC: 3.693E-5 mg/l; RCR: < 0.01 |
| Marine Water (Sediment) | PEC: 5.215E-4 mg/kg dw; RCR: < 0.01 |
| Agricultural Soil | PEC: 7.794E-4 mg/kg dw; RCR: < 0.01 |
| Sewage Treatment Plant (Effluent) | PEC: 3.45E-5 mg/l; RCR: 2.46E-5 |

Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

Usage of release factors allows downstream users to verify in a first approximation, if the combination of local usage and production conditions meets the defined release quantities resulting from this exposure scenario (calculated as $M(\text{site})$ [see amounts used, contributing scenario 1] x release factor [Technical conditions and measures at process level (source) to prevent release; contributing scenario 1])

associated uses:

Should consumer uses be associated with this exposure scenario, please contact OQ for further details

Other combinations of operational conditions may also be safe. Please contact OQ in case your local operational

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conditions differ from the ones described above and you are unsure if they are also safe

Number of the ES 4

Short title of the exposure scenario

Lubricants

List of use descriptors

Sector of uses [SU]

SU3: Industrial uses: Uses of substances as such or in preparations at industrial sites

Process categories [PROC]

PROC3: Use in closed batch process (synthesis or formulation)

PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

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

PROC10: Roller application or brushing

PROC13: Treatment of articles by dipping and pouring

Environmental release categories [ERC]

ERC4: Industrial use of processing aids in processes and products, not becoming part of articles

Product characteristics

Refer to attached safety data sheets

Processes and activities covered by the exposure scenario

Covers the use of formulated lubricants in closed and open systems including transfer operations, operation of machinery/engines and similar articles, reworking on reject articles, equipment maintenance and disposal of wastes.

Further explanations

Industrial use

Human health hazard assessment:

For concentrations below 10 %, the mixture is not hazardous with respect to the substance, no RMM/OCs are necessary

Contributing Scenarios

Number of the contributing scenario

1

**Contributing exposure scenario controlling environmental exposure for
ERC 4**

Further specification

assessment tool used: Chesar 2.2, release factors for (Sp)ERC were modified.

Product characteristics

Covers percentage substance in the product up to 100 % (unless stated differently).

Amounts used

Daily amount per site: 5 to

Annual amount per site: 100 to

Fraction of Regional tonnage used locally: 1

Environment factors not influenced by risk management

River flow rate: 18000 m³/d Local freshwater dilution factor: 10 Local marine water dilution factor: 100

Other given operational conditions affecting environmental exposure

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Indoor/Outdoor use

Technical conditions and measures at process level (source) to prevent release

Release fraction to air from process: 100 %

Release fraction to wastewater from process: 0.3 %

Release fraction to soil from process: 5%

Conditions and measures related to municipal sewage treatment plant

Size of municipal sewage system/ treatment plant (m³/d): 2000

The minimum grade of elimination in the sewage plant is (%): 100

Conditions and measures related to external treatment of waste for disposal

none

Conditions and measures related to external recovery of waste

none

Number of the contributing scenario

2

Contributing exposure scenario controlling worker exposure for PROC 3, PROC 4, PROC 5, PROC 8a, PROC 8b, PROC 9, PROC 10, PROC 13

Further specification

Qualitative approach used to conclude safe use.

Product characteristics

Covers percentage substance in the product up to >=10 %

Frequency and duration of use

8 h (full shift)

Other given operational conditions affecting workers exposure

Indoor and outdoor use

Organisational measures to prevent /limit releases, dispersion and exposure

Regular cleaning of equipment and work area

Supervision in place to check that the RMMs in place are being used correctly and OCs followed.

Training for staff on good practice

Good standard of personal hygiene

Minimization of manual phases

Work procedures minimizing of splashes and spills

Avoidance of contact with contaminated tools and objects

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

Wear suitable gloves (tested to EN374) and eye protection. Full skin coverage with appropriate light-weight barrier material.

Exposure estimation and reference to its source

Environment

PEC = predicted environmental concentration (local); RCR = risk characterisation ratio

| | |
|-----------------------------------|-------------------------------------|
| Fresh Water (Pelagic) | PEC: 3.736E-4 mg/l; RCR: < 0.01 |
| Fresh Water (Sediment) | PEC: 0.005 mg/kg dw; RCR: < 0.01 |
| Marine Water (Pelagic) | PEC: 3.693E-5 mg/l; RCR: < 0.01 |
| Marine Water (Sediment) | PEC: 5.215E-4 mg/kg dw; RCR: < 0.01 |
| Agricultural Soil | PEC: 7.794E-4 mg/kg dw; RCR: < 0.01 |
| Sewage Treatment Plant (Effluent) | PEC: 0.003 mg/l; RCR: < 0.01 |

Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

Usage of release factors allows downstream users to verify in a first approximation, if the combination of local usage and production conditions meets the defined release quantities resulting from this exposure scenario (calculated as M(site) [see amounts used, contributing scenario 1] x release factor [Technical conditions and measures at process level (source) to prevent release; contributing scenario 1])

associated uses:

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Should consumer uses be associated with this exposure scenario, please contact OQ for further details
Other combinations of operational conditions may also be safe. Please contact OQ in case your local operational conditions differ from the ones described above and you are unsure if they are also safe

Number of the ES 5

Short title of the exposure scenario

Lubricants

List of use descriptors

Sector of uses [SU]

SU22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

Process categories [PROC]

PROC2: Use in closed, continuous process with occasional controlled exposure

PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

PROC10: Roller application or brushing

PROC11: Non industrial spraying

PROC13: Treatment of articles by dipping and pouring

Environmental release categories [ERC]

ERC8a: Wide dispersive indoor use of processing aids in open systems

Product characteristics

Refer to attached safety data sheets

Processes and activities covered by the exposure scenario

Covers the use of formulated lubricants in closed and open systems including transfer operations, operation of machinery/engines and similar articles, reworking on reject articles, equipment maintenance and disposal of wastes.

Further explanations

Professional use

Human health hazard assessment:

For concentrations below 10 %, the mixture is not hazardous with respect to the substance, no RMM/OCs are necessary

Contributing Scenarios

Number of the contributing scenario

1

**Contributing exposure scenario controlling environmental exposure for
ERC 8a**

Further specification

assessment tool used: Chesar 2.2.

Amounts used

daily wide dispersive use: 5.5E-5 to/d

Amounts used (EU): 100 to/a

Environment factors not influenced by risk management

River flow rate: 18000 m³/d Local freshwater dilution factor: 10 Local marine water dilution factor: 100

Other given operational conditions affecting environmental exposure

Indoor/Outdoor use

Technical conditions and measures at process level (source) to prevent release

Release fraction to air from process: 1 %

Release fraction to wastewater from process: 1 %

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Release fraction to soil from process: 0%

Conditions and measures related to municipal sewage treatment plant

Size of industrial sewage treatment plant (m³/d): 2000

The minimum grade of elimination in the sewage plant is (%): 87.5

Conditions and measures related to external treatment of waste for disposal

none

Conditions and measures related to external recovery of waste

none

Number of the contributing scenario

2

Contributing exposure scenario controlling worker exposure for PROC 2, PROC 8a, PROC 8b, PROC 10, PROC 11, PROC 13, PROC 17

Further specification

Qualitative approach used to conclude safe use.

Product characteristics

Covers percentage substance in the product: >=10 %

Frequency and duration of use

8 h (full shift)

Other given operational conditions affecting workers exposure

Indoor and outdoor use

Organisational measures to prevent /limit releases, dispersion and exposure

Regular cleaning of equipment and work area

Supervision in place to check that the RMMs in place are being used correctly and OCs followed.

Training for staff on good practice

Good standard of personal hygiene

Minimization of manual phases

Work procedures minimizing of splashes and spills

Avoidance of contact with contaminated tools and objects

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

Wear suitable gloves (tested to EN374) and eye protection. Full skin coverage with appropriate light-weight barrier material.

Exposure estimation and reference to its source

Environment

Environment PEC = predicted environmental concentration (local); RCR = risk characterisation ratio

| | |
|-----------------------------------|-------------------------------------|
| Fresh Water (Pelagic) | PEC: 3.736E-4 mg/l; RCR: < 0.01 |
| Fresh Water (Sediment) | PEC: 0.005 mg/kg dw; RCR: < 0.01 |
| Marine Water (Pelagic) | PEC: 3.693E-5 mg/l; RCR: < 0.01 |
| Marine Water (Sediment) | PEC: 5.215E-4 mg/kg dw; RCR: < 0.01 |
| Agricultural Soil | PEC: 7.794E-4 mg/kg dw; RCR: < 0.01 |
| Sewage Treatment Plant (Effluent) | PEC: 0.003 mg/l; RCR: < 0.01 |

Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

Usage of release factors allows downstream users to verify in a first approximation, if the combination of local usage and production conditions meets the defined release quantities resulting from this exposure scenario (calculated as M(site) [see amounts used, contributing scenario 1] x release factor [Technical conditions and measures at process level (source) to prevent release; contributing scenario 1])

associated uses:

Should consumer uses be associated with this exposure scenario, please contact OQ for further details

Other combinations of operational conditions may also be safe. Please contact OQ in case your local operational conditions differ from the ones described above and you are unsure if they are also safe

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Number of the ES 6

Short title of the exposure scenario

Industrial use resulting in manufacture of another substance (use of intermediates)

List of use descriptors

Sector of uses [SU]

SU8: Manufacture of bulk, large scale chemicals (including petroleum products)
SU9: Manufacture of fine chemicals
SU3: Industrial uses: Uses of substances as such or in preparations at industrial sites

Process categories [PROC]

PROC1: Use in closed process, no likelihood of exposure
PROC2: Use in closed, continuous process with occasional controlled exposure
PROC3: Use in closed batch process (synthesis or formulation)
PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises
PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities
PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
PROC15: Use as laboratory reagent

Environmental release categories [ERC]

ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)

Product characteristics

Refer to attached safety data sheets

Processes and activities covered by the exposure scenario

Use as an intermediate (not related to Strictly Controlled Conditions). Includes incidental exposures during recycling/ recovery, material transfers, storage, sampling, associated laboratory activities, maintenance and loading (including marine vessel/barge, road/rail car and bulk container).

Further explanations

Industrial use

Human health hazard assessment:

For concentrations below 10 %, the mixture is not hazardous with respect to the substance, no RMM/OCs are necessary

Contributing Scenarios

Number of the contributing scenario

1

**Contributing exposure scenario controlling environmental exposure for
ERC 6a**

Further specification

assessment tool used: Chesar 2.2, release factors for (Sp)ERC were modified.

Product characteristics

Covers percentage substance in the product up to 100 % (unless stated differently).

Amounts used

Daily amount per site: 5 to

Annual amount per site: 100 to

Fraction of Regional tonnage used locally: 1

Environment factors not influenced by risk management

River flow rate: 18000 m³/d Local freshwater dilution factor: 10 Local marine water dilution factor: 100

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Other given operational conditions affecting environmental exposure

Indoor/Outdoor use

Technical conditions and measures at process level (source) to prevent release

Release fraction to air from process: 5 %

Release fraction to wastewater from process: 0.3 %

Release fraction to soil from process: 0.1%

Conditions and measures related to municipal sewage treatment plant

Size of municipal sewage system/ treatment plant (m³/d): 2000

The minimum grade of elimination in the sewage plant is (%): 87.5

Conditions and measures related to external treatment of waste for disposal

none

Conditions and measures related to external recovery of waste

none

Number of the contributing scenario

2

Contributing exposure scenario controlling worker exposure for PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 9, PROC 15

Further specification

Qualitative approach used to conclude safe use.

Product characteristics

Covers percentage substance in the product: >=10 %

Frequency and duration of use

8 h (full shift)

Other given operational conditions affecting workers exposure

Indoor and outdoor use

Organisational measures to prevent /limit releases, dispersion and exposure

Regular cleaning of equipment and work area

Supervision in place to check that the RMMs in place are being used correctly and OCs followed.

Training for staff on good practice

Good standard of personal hygiene

Minimization of manual phases

Work procedures minimizing of splashes and spills

Avoidance of contact with contaminated tools and objects

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

Wear suitable gloves (tested to EN374) and eye protection. Full skin coverage with appropriate light-weight barrier material.

Exposure estimation and reference to its source

Environment

Environment PEC = predicted environmental concentration (local); RCR = risk characterisation ratio

| | |
|-----------------------------------|---------------------------------|
| Fresh Water (Pelagic) | PEC: 0.094 mg/l; RCR: 0.261 |
| Fresh Water (Sediment) | PEC: 1.33 mg/kg dw; RCR: 0.156 |
| Marine Water (Pelagic) | PEC: 0.009 mg/l; RCR: 0.261 |
| Marine Water (Sediment) | PEC: 0.133 mg/kg dw; RCR: 0.156 |
| Agricultural Soil | PEC: 0.213 mg/kg dw; RCR: 0.144 |
| Sewage Treatment Plant (Effluent) | PEC: 0.94 mg/l; RCR: 0.672 |

Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

Usage of release factors allows downstream users to verify in a first approximation, if the combination of local usage and production conditions meets the defined release quantities resulting from this exposure scenario (calculated as M(site) [see amounts used, contributing scenario 1] x release factor [Technical conditions and measures at process level (source) to prevent release; contributing scenario 1])

associated uses:

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Should consumer uses be associated with this exposure scenario, please contact OQ for further details
Other combinations of operational conditions may also be safe. Please contact OQ in case your local operational conditions differ from the ones described above and you are unsure if they are also safe

Number of the ES 7

Short title of the exposure scenario

Use in laboratories

List of use descriptors

Sector of uses [SU]

SU3: Industrial uses: Uses of substances as such or in preparations at industrial sites

Process categories [PROC]

PROC10: Roller application or brushing

PROC15: Use as laboratory reagent

Environmental release categories [ERC]

ERC4: Industrial use of processing aids in processes and products, not becoming part of articles

Product characteristics

Refer to attached safety data sheets

Processes and activities covered by the exposure scenario

Use of small quantities within laboratory settings, including material transfers and equipment cleaning

Further explanations

Industrial use

Human health hazard assessment:

For concentrations below 10 %, the mixture is not hazardous with respect to the substance, no RMM/OCs are necessary

Contributing Scenarios

Number of the contributing scenario

1

Contributing exposure scenario controlling environmental exposure for ERC 4

Further specification

assessment tool used: Chesar 2.2, release factors for (Sp)ERC were modified.

Product characteristics

Covers percentage substance in the product up to 100 % (unless stated differently).

Amounts used

Daily amount per site: 1 to

Annual amount per site: 20 to

Fraction of Regional tonnage used locally: 1

Environment factors not influenced by risk management

River flow rate: 18000 m³/d Local freshwater dilution factor: 10 Local marine water dilution factor: 100

Other given operational conditions affecting environmental exposure

Indoor/Outdoor use

Technical conditions and measures at process level (source) to prevent release

Release fraction to air from process: 100 %

Release fraction to wastewater from process: 1.5 %

Release fraction to soil from process: 5%

Conditions and measures related to municipal sewage treatment plant

Size of municipal sewage system/ treatment plant (m³/d): 2000

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The minimum grade of elimination in the sewage plant is (%): 87.5

Conditions and measures related to external treatment of waste for disposal

none

Conditions and measures related to external recovery of waste

none

Number of the contributing scenario

2

Contributing exposure scenario controlling worker exposure for PROC 10, PROC 15

Further specification

Qualitative approach used to conclude safe use.

Product characteristics

Covers percentage substance in the product: $\geq 10\%$

Frequency and duration of use

8 h (full shift)

Other given operational conditions affecting workers exposure

Indoor and outdoor use

Organisational measures to prevent /limit releases, dispersion and exposure

Regular cleaning of equipment and work area

Supervision in place to check that the RMMs in place are being used correctly and OCs followed.

Training for staff on good practice

Good standard of personal hygiene

Minimization of manual phases

Work procedures minimizing of splashes and spills

Avoidance of contact with contaminated tools and objects

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

Wear suitable gloves (tested to EN374) and eye protection. Full skin coverage with appropriate light-weight barrier material.

Environment

PEC = predicted environmental concentration (local); RCR = risk characterisation ratio

| | |
|-----------------------------------|---------------------------------|
| Fresh Water (Pelagic) | PEC: 0.094 mg/l; RCR: 0.261 |
| Fresh Water (Sediment) | PEC: 1.328 mg/kg dw; RCR: 0.156 |
| Marine Water (Pelagic) | PEC: 0.009 mg/l; RCR: 0.261 |
| Marine Water (Sediment) | PEC: 0.133 mg/kg dw; RCR: 0.156 |
| Agricultural Soil | PEC: 0.215 mg/kg dw; RCR: 0.145 |
| Sewage Treatment Plant (Effluent) | PEC: 0.94 mg/l; RCR: 0.672 |

Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

Usage of release factors allows downstream users to verify in a first approximation, if the combination of local usage and production conditions meets the defined release quantities resulting from this exposure scenario (calculated as $M(\text{site})$ [see amounts used, contributing scenario 1] x release factor [Technical conditions and measures at process level (source) to prevent release; contributing scenario 1])

associated uses:

Should consumer uses be associated with this exposure scenario, please contact OQ for further details

Other combinations of operational conditions may also be safe. Please contact OQ in case your local operational conditions differ from the ones described above and you are unsure if they are also safe

Number of the ES 8

Short title of the exposure scenario

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Industrial processing of articles

List of use descriptors

Sector of uses [SU]

SU7: Printing and reproduction of recorded media

SU3: Industrial uses: Uses of substances as such or in preparations at industrial sites

Process categories [PROC]

PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)

PROC13: Treatment of articles by dipping and pouring

Environmental release categories [ERC]

ERC4: Industrial use of processing aids in processes and products, not becoming part of articles

Product characteristics

Refer to attached safety data sheets

Processes and activities covered by the exposure scenario

Exposing, developing, bleaching, fixing, washing and drying in dedicated equipment

Further explanations

Industrial use

Human health hazard assessment:

For concentrations below 10 %, the mixture is not hazardous with respect to the substance, no RMM/OCs are necessary

Contributing Scenarios

Number of the contributing scenario

1

Contributing exposure scenario controlling environmental exposure for ERC 4

Further specification

assessment tool used: Chesar 2.2, release factors for (Sp)ERC were modified.

Product characteristics

Covers percentage substance in the product up to 100 % (unless stated differently).

Amounts used

Daily amount per site: 0.5 to

Annual amount per site: 10 to

Fraction of Regional tonnage used locally: 1

Environment factors not influenced by risk management

River flow rate: 18000 m³/d

Local freshwater dilution factor: 10

Local marine water dilution factor: 100

Other given operational conditions affecting environmental exposure

Indoor/Outdoor use

Technical conditions and measures at process level (source) to prevent release

Release fraction to air from process: 100 %

Release fraction to wastewater from process: 3 %

Release fraction to soil from process: 5%

Conditions and measures related to municipal sewage treatment plant

Size of municipal sewage system/ treatment plant (m³/d): 2000

The minimum grade of elimination in the sewage plant is (%): 87.5

Conditions and measures related to external treatment of waste for disposal

none

Conditions and measures related to external recovery of waste

none

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Number of the contributing scenario 2
Contributing exposure scenario controlling worker exposure for PROC 5, PROC 13

Further specification

Qualitative approach used to conclude safe use.

Product characteristics

Covers percentage substance in the product: $\geq 10\%$

Frequency and duration of use

8 h (full shift)

Other given operational conditions affecting workers exposure

Indoor and outdoor use

Organisational measures to prevent /limit releases, dispersion and exposure

Regular cleaning of equipment and work area

Supervision in place to check that the RMMs in place are being used correctly and OCs followed.

Training for staff on good practice

Good standard of personal hygiene

Minimization of manual phases

Work procedures minimizing of splashes and spills

Avoidance of contact with contaminated tools and objects

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

Wear suitable gloves (tested to EN374) and eye protection. Full skin coverage with appropriate light-weight barrier material.

Exposure estimation and reference to its source

Environment

Environment PEC = predicted environmental concentration (local); RCR = risk characterisation ratio

| | |
|-----------------------------------|---------------------------------|
| Fresh Water (Pelagic) | PEC: 0.094 mg/l; RCR: 0.261 |
| Fresh Water (Sediment) | PEC: 1.328 mg/kg dw; RCR: 0.156 |
| Marine Water (Pelagic) | PEC: 0.009 mg/l; RCR: 0.261 |
| Marine Water (Sediment) | PEC: 0.133 mg/kg dw; RCR: 0.156 |
| Agricultural Soil | PEC: 0.214 mg/kg dw; RCR: 0.144 |
| Sewage Treatment Plant (Effluent) | PEC: 0.94 mg/l; RCR: 0.672 |

Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

Usage of release factors allows downstream users to verify in a first approximation, if the combination of local usage and production conditions meets the defined release quantities resulting from this exposure scenario (calculated as $M(\text{site})$ [see amounts used, contributing scenario 1] x release factor [Technical conditions and measures at process level (source) to prevent release; contributing scenario 1])

associated uses:

Should consumer uses be associated with this exposure scenario, please contact OQ for further details

Other combinations of operational conditions may also be safe. Please contact OQ in case your local operational conditions differ from the ones described above and you are unsure if they are also safe

Number of the ES 9

Short title of the exposure scenario

Industrial processing of articles

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List of use descriptors

Sector of uses [SU]

SU7: Printing and reproduction of recorded media

SU3: Industrial uses: Uses of substances as such or in preparations at industrial sites

Process categories [PROC]

PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)

PROC13: Treatment of articles by dipping and pouring

Environmental release categories [ERC]

ERC5: Industrial use resulting in inclusion into or onto a matrix

Product characteristics

Refer to attached safety data sheets

Processes and activities covered by the exposure scenario

Exposing, developing, bleaching, fixing, washing and drying in dedicated equipment

Further explanations

Industrial use

For concentrations below 10 %, the mixture is not hazardous with respect to the substance, no RMM/OCs are necessary

Contributing Scenarios

| | |
|--|----------|
| Number of the contributing scenario | 1 |
| Contributing exposure scenario controlling environmental exposure for ERC 5 | |

Further specification

assessment tool used: Chesar 2.2, release factors for (Sp)ERC were modified.

Product characteristics

Covers percentage substance in the product up to 100 % (unless stated differently).

Amounts used

Daily amount per site: 0.5 to

Annual amount per site: 10 to

Fraction of Regional tonnage used locally: 1

Environment factors not influenced by risk management

River flow rate: 18000 m³/d

Local freshwater dilution factor: 10

Local marine water dilution factor: 100

Other given operational conditions affecting environmental exposure

Indoor/Outdoor use

Technical conditions and measures at process level (source) to prevent release

Release fraction to air from process: 50 %

Release fraction to wastewater from process: 3 %

Release fraction to soil from process: 1%

Conditions and measures related to municipal sewage treatment plant

Size of industrial sewage treatment plant (m³/d): 2000

The minimum grade of elimination in the sewage plant is (%): 87.5

Conditions and measures related to external treatment of waste for disposal

none

Conditions and measures related to external recovery of waste

none

| | |
|---|----------|
| Number of the contributing scenario | 2 |
| Contributing exposure scenario controlling worker exposure for | |

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PROC 5, PROC 13

Further specification

Qualitative approach used to conclude safe use.

Product characteristics

Covers percentage substance in the product: $\geq 10\%$

Frequency and duration of use

8 h (full shift)

Other given operational conditions affecting workers exposure

Indoor and outdoor use

Organisational measures to prevent /limit releases, dispersion and exposure

Regular cleaning of equipment and work area

Supervision in place to check that the RMMs in place are being used correctly and OCs followed.

Training for staff on good practice

Good standard of personal hygiene

Minimization of manual phases

Work procedures minimizing of splashes and spills

Avoidance of contact with contaminated tools and objects

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

Wear suitable gloves (tested to EN374), coverall and eye protection. Wear suitable gloves (tested to EN374) and eye protection. Full skin coverage with appropriate light-weight barrier material.

Exposure estimation and reference to its source

Environment

Environment PEC = predicted environmental concentration (local); RCR = risk characterisation ratio

| | |
|-----------------------------------|---------------------------------------|
| Fresh Water (Pelagic) | PEC: 0.094 mg/l; RCR: 0.261 |
| Fresh Water (Sediment) | PEC: 1.328 mg/kg dw; RCR: 0.156 |
| Marine Water (Pelagic) | PEC: 0.009 mg/l; RCR: 0.261 |
| Marine Water (Sediment) | PEC: 0.133 mg/kg dw; RCR: 0.156 |
| Air | PEC: .?1 mg/m ³ ; RCR: .?2 |
| Agricultural Soil | PEC: 0.213 mg/kg dw; RCR: 0.144 |
| Sewage Treatment Plant (Effluent) | PEC: 0.94 mg/l; RCR: 0.672 |

Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

Usage of release factors allows downstream users to verify in a first approximation, if the combination of local usage and production conditions meets the defined release quantities resulting from this exposure scenario (calculated as $M(\text{site})$ [see amounts used, contributing scenario 1] x release factor [Technical conditions and measures at process level (source) to prevent release; contributing scenario 1])

associated uses:

Should consumer uses be associated with this exposure scenario, please contact OQ for further details

Other combinations of operational conditions may also be safe. Please contact OQ in case your local operational conditions differ from the ones described above and you are unsure if they are also safe

Number of the ES 10

Short title of the exposure scenario

Industrial processing of articles

List of use descriptors

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Sector of uses [SU]

SU7: Printing and reproduction of recorded media

SU3: Industrial uses: Uses of substances as such or in preparations at industrial sites

Process categories [PROC]

PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)

PROC13: Treatment of articles by dipping and pouring

Environmental release categories [ERC]

ERC6b: Industrial use of reactive processing aids

Product characteristics

Refer to attached safety data sheets

Processes and activities covered by the exposure scenario

Exposing, developing, bleaching, fixing, washing and drying in dedicated equipment

Further explanations

Industrial use

Human health hazard assessment:

For concentrations below 10 %, the mixture is not hazardous with respect to the substance, no RMM/OCs are necessary

Contributing Scenarios

Number of the contributing scenario

1

Contributing exposure scenario controlling environmental exposure for ERC 6b

Further specification

assessment tool used: Chesar 2.2, release factors for (Sp)ERC were modified.

Product characteristics

Covers percentage substance in the product up to 100 % (unless stated differently).

Amounts used

Daily amount per site: 0.5 to

Annual amount per site: 10 to

Fraction of Regional tonnage used locally: 1

Environment factors not influenced by risk management

River flow rate: 18000 m³/d

Local freshwater dilution factor: 10

Local marine water dilution factor: 100

Other given operational conditions affecting environmental exposure

Indoor/Outdoor use

Technical conditions and measures at process level (source) to prevent release

Release fraction to air from process: 0.025 %

Release fraction to wastewater from process: 3 %

Release fraction to soil from process: 0.1%

Conditions and measures related to municipal sewage treatment plant

Size of industrial sewage treatment plant (m³/d): 2000

The minimum grade of elimination in the sewage plant is (%): 87.5

Conditions and measures related to external treatment of waste for disposal

none

Conditions and measures related to external recovery of waste

none

Number of the contributing scenario

2

Contributing exposure scenario controlling worker exposure for PROC 5, PROC 13

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Further specification

Qualitative approach used to conclude safe use.

Product characteristics

Covers percentage substance in the product: $\geq 10\%$

Frequency and duration of use

8 h (full shift)

Other given operational conditions affecting workers exposure

Indoor and outdoor use

Organisational measures to prevent /limit releases, dispersion and exposure

Regular cleaning of equipment and work area

Supervision in place to check that the RMMs in place are being used correctly and OCs followed.

Training for staff on good practice

Good standard of personal hygiene

Minimization of manual phases

Work procedures minimizing of splashes and spills

Avoidance of contact with contaminated tools and objects

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

Wear suitable gloves tested to EN374. Wear suitable gloves (tested to EN374) and eye protection. Full skin coverage with appropriate light-weight barrier material.

Frequency and duration of use

8 h (full shift)

Exposure estimation and reference to its source

Environment

Environment PEC = predicted environmental concentration (local); RCR = risk characterisation ratio

| | |
|--------------------------------------|---------------------------------|
| Fresh Water (Pelagic) | PEC: 0.094 mg/l; RCR: 0.261 |
| Fresh Water (Sediment) | PEC: 1.33 mg/kg dw; RCR: 0.156 |
| Marine Water (Pelagic) | PEC: 0.009 mg/l; RCR: 0.261 |
| Marine Water (Sediment) | PEC: 0.133 mg/kg dw; RCR: 0.156 |
| Agricultural Soil | PEC: 0.212 mg/kg dw; RCR: 0.143 |
| Sewage Treatment Plant (Effluent) | PEC: 0.94 mg/l; RCR: 0.671 |

Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

Usage of release factors allows downstream users to verify in a first approximation, if the combination of local usage and production conditions meets the defined release quantities resulting from this exposure scenario (calculated as $M(\text{site})$ [see amounts used, contributing scenario 1] x release factor [Technical conditions and measures at process level (source) to prevent release; contributing scenario 1])

associated uses:

Should consumer uses be associated with this exposure scenario, please contact OQ for further details

Other combinations of operational conditions may also be safe. Please contact OQ in case your local operational conditions differ from the ones described above and you are unsure if they are also safe