

SAFETY DATA SHEET

Based upon Regulation (EC) No 1907/2006, as amended by Regulation (EU) No 2020/878

SEAL & BOND MS62 X

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

1.1. Product identifier

Product name : SEAL & BOND MS62 X
Registration number REACH : Not applicable (mixture)
Product type REACH : Mixture

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

1.2.1 Relevant identified uses

Adhesive

1.2.2 Uses advised against

No uses advised against

1.3. Details of the supplier of the safety data sheet

Supplier of the safety data sheet

Novatio*
Industrielaan 5B
B-2250 Olen
☎ +32 14 25 76 40
☎ +32 14 22 02 66
info@novatio.be
*NOVATIO is a registered trademark of Novatech International N.V.

Manufacturer of the product

Novatech International N.V.
Industrielaan 5B
B-2250 Olen
☎ +32 14 85 97 37
☎ +32 14 85 97 38
info@novatech.be

1.4. Emergency telephone number

24h/24h (Telephone advice: English, French, German, Dutch) :
+32 14 58 45 45 (BIG)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Not classified as dangerous according to the criteria of Regulation (EC) No 1272/2008

2.2. Label elements

Not classified as dangerous according to the criteria of Regulation (EC) No 1272/2008

Supplemental information

EUH208 Contains: N-(3-(trimethoxysilyl)propyl)ethylenediamine; trimethoxyvinylsilane. May produce an allergic reaction.
EUH210 Safety data sheet available on request.

2.3. Other hazards

No other hazards known

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

| Name REACH Registration No | CAS No EC No | Conc. (C) | Classification according to CLP | Note | Remark | M-factors and ATE |
|-------------------------------|-----------------|-----------|---------------------------------|------|--------|----------------------|
|-------------------------------|-----------------|-----------|---------------------------------|------|--------|----------------------|

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| | | | | | | |
|---|------------------------|-----------|--|------------|-------------|--|
| N-(3-(trimethoxysilyl)propyl) ethylenediamine 01-2119970215-39 | 1760-24-3 217-164-6 | 0.1%<C<1% | Skin Sens. 1B; H317 Acute Tox. 4; H332 STOT RE 2; H373 Eye Dam. 1; H318 | (1)(10) | Constituent | |
| trimethoxyvinylsilane | 2768-02-7 220-449-8 | 0.1%<C<1% | Flam. Liq. 3; H226 Skin Sens. 1B; H317 | (1)(6)(10) | Constituent | |

(1) For H- and EUH-statements in full: see section 16

(6) Enumerated in Annex VI of Regulation (EC) No. 1272/2008 but the classification has been adapted after evaluation of available test data

(10) Subject to restrictions of Annex XVII of Regulation (EC) No. 1907/2006

SECTION 4: First aid measures

4.1. Description of first aid measures

General:

Observe (own) safety. If possible, approach victim and check vital functions. In case of injury and/or intoxication, call the European emergency number 112. Treat symptoms starting with most life-threatening injuries and disorders. Keep victim under observation, possibility of delayed symptoms.

After inhalation:

Remove victim into fresh air. In case of respiratory problems, consult a doctor/medical service.

After skin contact:

If possible, wipe up/dry remove chemical. Then rinse/shower immediately with (lukewarm) water. If irritation persists, consult a doctor/medical service.

After eye contact:

Rinse immediately with (lukewarm) water. Remove contact lenses, if present and easy to do. Continue rinsing. If irritation persists, consult a doctor/medical service.

After ingestion:

Rinse mouth with water. If you feel unwell, consult a doctor/medical service. Do not wait for symptoms to occur to consult Poison Center.

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

4.2.1 Acute symptoms

After inhalation:

No effects known.

After skin contact:

No effects known.

After eye contact:

No effects known.

After ingestion:

No effects known.

4.2.2 Delayed symptoms

No effects known.

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

If applicable and available it will be listed below.

SECTION 5: Firefighting measures

5.1. Extinguishing media

5.1.1 Suitable extinguishing media:

Small fire: Quick-acting ABC powder extinguisher, Class A foam extinguisher, Water (quick-acting extinguisher, reel).

Major fire: Water, Class A foam.

5.1.2 Unsuitable extinguishing media:

Small fire: Quick-acting BC powder extinguisher, Quick-acting CO2 extinguisher.

5.2. Special hazards arising from the substance or mixture

Upon combustion: formation of CO, CO2 and small quantities of nitrous vapours.

5.3. Advice for firefighters

5.3.1 Instructions:

No specific fire-fighting instructions required.

5.3.2 Special protective equipment for fire-fighters:

Gloves (EN 374). Protective clothing (EN 14605 or EN 13034). Heat/fire exposure: self-contained breathing apparatus (EN 136 + EN 137).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

No naked flames.

6.1.1 Protective equipment for non-emergency personnel

See section 8.2

6.1.2 Protective equipment for emergency responders

Gloves (EN 374). Protective clothing (EN 14605 or EN 13034).

Suitable protective clothing

See section 8.2

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6.2. Environmental precautions

Contain released product.

6.3. Methods and material for containment and cleaning up

Solid spill: cover with absorbent material. Scoop solid spill into closing containers. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

6.4. Reference to other sections

See section 13.

SECTION 7: Handling and storage

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

7.1. Precautions for safe handling

Keep away from naked flames/heat. Observe strict hygiene. Keep container tightly closed.

7.2. Conditions for safe storage, including any incompatibilities

7.2.1 Safe storage requirements:

Meet the legal requirements. Store in a dry area. Keep container in a well-ventilated place.

7.2.2 Keep away from:

Heat sources, water/moisture.

7.2.3 Suitable packaging material:

Synthetic material, metal.

7.2.4 Non suitable packaging material:

No data available

7.3. Specific end use(s)

If applicable and available, exposure scenarios are attached in annex. See information supplied by the manufacturer.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 Occupational exposure

a) Occupational exposure limit values

If limit values are applicable and available these will be listed below.

b) National biological limit values

If limit values are applicable and available these will be listed below.

8.1.2 Sampling methods

If applicable and available it will be listed below.

8.1.3 Applicable limit values when using the substance or mixture as intended

If limit values are applicable and available these will be listed below.

8.1.4 Threshold values

DNEL/DMEL - Workers

N-(3-(trimethoxysilyl)propyl)ethylenediamine

| Effect level (DNEL/DMEL) | Type | Value | Remark |
|--------------------------|---------------------------------------|-----------------------|--------|
| DNEL | Long-term systemic effects inhalation | 260 mg/m ³ | |
| | Acute systemic effects inhalation | 260 mg/m ³ | |

trimethoxyvinylsilane

| Effect level (DNEL/DMEL) | Type | Value | Remark |
|--------------------------|---------------------------------------|------------------------|--------|
| DNEL | Long-term systemic effects inhalation | 27.6 mg/m ³ | |
| | Long-term systemic effects dermal | 3.9 mg/kg bw/day | |

DNEL/DMEL - General population

N-(3-(trimethoxysilyl)propyl)ethylenediamine

| Effect level (DNEL/DMEL) | Type | Value | Remark |
|--------------------------|---------------------------------------|----------------------|--------|
| DNEL | Long-term systemic effects inhalation | 50 mg/m ³ | |
| | Acute systemic effects inhalation | 50 mg/m ³ | |
| | Long-term systemic effects oral | 8 mg/kg bw/day | |

trimethoxyvinylsilane

| Effect level (DNEL/DMEL) | Type | Value | Remark |
|--------------------------|---------------------------------------|------------------------|--------|
| DNEL | Long-term systemic effects inhalation | 18.9 mg/m ³ | |
| | Long-term systemic effects dermal | 7.8 mg/kg bw/day | |
| | Long-term systemic effects oral | 0.3 mg/kg bw/day | |

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N-(3-(trimethoxysilyl)propyl)ethylenediamine

| Compartments | Value | Remark |
|-------------------------------------|-------------------------|--------|
| Fresh water | 0.062 mg/l | |
| Marine water | 0.006 mg/l | |
| Fresh water (intermittent releases) | 0.62 mg/l | |
| STP | 25 mg/l | |
| Fresh water sediment | 0.22 mg/kg sediment dw | |
| Marine water sediment | 0.022 mg/kg sediment dw | |
| Soil | 0.009 mg/kg soil dw | |

8.1.5 Control banding

If applicable and available it will be listed below.

8.2. Exposure controls

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

8.2.1 Appropriate engineering controls

Keep away from naked flames/heat. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.

8.2.2 Individual protection measures, such as personal protective equipment

Observe strict hygiene. Do not eat, drink or smoke during work.

a) Respiratory protection:

Respiratory protection not required in normal conditions.

b) Hand protection:

Protective gloves against chemicals (EN 374).

| Materials | Measured breakthrough time | Thickness | Protection index | Remark |
|----------------|----------------------------|-----------|------------------|-----------------|
| natural rubber | | ≥ 0.4 mm | | Good resistance |
| nitrile rubber | | ≥ 0.4 mm | | Good resistance |
| PVA | | ≥ 0.4 mm | | Good resistance |

c) Eye protection:

Safety glasses (EN 166).

d) Skin protection:

Protective clothing (EN 14605 or EN 13034).

8.2.3 Environmental exposure controls:

See sections 6.2, 6.3 and 13

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|---------------------------|--|
| Physical form | Paste |
| Odour | Characteristic odour |
| Odour threshold | No data available in the literature |
| Colour | Variable in colour, depending on the composition |
| Particle size | Not applicable (liquid) |
| Explosion limits | No data available in the literature |
| Flammability | Not classified as flammable |
| Log Kow | Not applicable (mixture) |
| Dynamic viscosity | No data available in the literature |
| Kinematic viscosity | No data available in the literature |
| Melting point | No data available in the literature |
| Boiling point | No data available in the literature |
| Relative vapour density | No data available in the literature |
| Vapour pressure | No data available in the literature |
| Solubility | Water ; insoluble |
| Relative density | 1.40 ; 20 °C |
| Absolute density | 1400 kg/m ³ ; 20 °C |
| Decomposition temperature | No data available in the literature |
| Auto-ignition temperature | No data available in the literature |
| Flash point | No data available in the literature |
| pH | Not applicable (non-soluble in water) |

9.2. Other information

No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

Heating increases the fire hazard.

10.2. Chemical stability

Stable under normal conditions.

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10.3. Possibility of hazardous reactions

No data available.

10.4. Conditions to avoid

Precautionary measures

Keep away from naked flames/heat.

10.5. Incompatible materials

Water/moisture.

10.6. Hazardous decomposition products

Upon combustion: formation of CO, CO₂ and small quantities of nitrous vapours.

SECTION 11: Toxicological information

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

11.1.1 Test results

Acute toxicity

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No (test)data on the mixture available

Judgement is based on the relevant ingredients

N-(3-(trimethoxysilyl)propyl)ethylenediamine

| Route of exposure | Parameter | Method | Value | Exposure time | Species | Value determination | Remark |
|----------------------|-----------|------------------------|-----------------------|---------------|------------------------|---------------------|--------|
| Oral | LD50 | EPA OPPTS 870.1100 | 2295 mg/kg bw | | Rat (male / female) | Experimental value | |
| Dermal | LD50 | EPA OPPTS 870.7600 | > 2000 mg/kg bw | 24 h | Rabbit (male / female) | Experimental value | |
| Inhalation (aerosol) | LC50 | Equivalent to OECD 403 | 1.49 mg/l - 2.44 mg/l | 4 h | Rat (male / female) | Experimental value | |

trimethoxyvinylsilane

| Route of exposure | Parameter | Method | Value | Exposure time | Species | Value determination | Remark |
|----------------------|-----------|------------------------|-------------------------------|---------------|------------------------|---------------------|--------|
| Oral | LD50 | Equivalent to OECD 401 | 6899 mg/kg bw - 7012 mg/kg bw | | Rat (male / female) | Experimental value | |
| Dermal | LD50 | Equivalent to OECD 402 | 3158 mg/kg bw - 3760 mg/kg bw | 24 h | Rabbit (male / female) | Experimental value | |
| Inhalation (vapours) | LC50 | Equivalent to OECD 403 | 16.8 mg/l | 4 h | Rat (male / female) | Experimental value | |

Conclusion

Not classified for acute toxicity

Corrosion/irritation

SEAL & BOND MS62 X

No (test)data on the mixture available

Judgement is based on the relevant ingredients

N-(3-(trimethoxysilyl)propyl)ethylenediamine

| Route of exposure | Result | Method | Exposure time | Time point | Species | Value determination | Remark |
|-------------------|---------------------|--------------------|---------------|------------------|---------|---------------------|----------------------------------|
| Eye | Serious eye damage | OECD 405 | | 24; 48; 72 hours | Rabbit | Experimental value | Single treatment without rinsing |
| Skin | Slightly irritating | EPA OPPTS 870.2500 | 4 h | 24; 48; 72 hours | Rabbit | Experimental value | |

trimethoxyvinylsilane

| Route of exposure | Result | Method | Exposure time | Time point | Species | Value determination | Remark |
|-------------------|----------------|----------|---------------|---------------------|---------|---------------------|--------|
| Eye | Not irritating | OECD 405 | 24 h | 1; 24; 48; 72 hours | Rabbit | Experimental value | |
| Skin | Not irritating | | 24 h | 24; 48; 72 hours | Rabbit | Experimental value | |

Conclusion

Not classified as irritating to the skin

Not classified as irritating to the eyes

Not classified as irritating to the respiratory system

Respiratory or skin sensitisation

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No (test)data on the mixture available

Judgement is based on the relevant ingredients

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N-(3-(trimethoxysilyl)propyl)ethylenediamine

| Route of exposure | Result | Method | Exposure time | Observation time point | Species | Value determination | Remark |
|-------------------|-------------|----------|---------------|------------------------|----------------------------|---------------------|--------|
| Skin | Sensitizing | OECD 406 | | | Guinea pig (male / female) | Experimental value | |

trimethoxyvinylsilane

| Route of exposure | Result | Method | Exposure time | Observation time point | Species | Value determination | Remark |
|-------------------|-------------|----------|---------------|------------------------|---------------------|---------------------|--------|
| Skin | Sensitizing | OECD 406 | | | Guinea pig (female) | Experimental value | |

Conclusion

Not classified as sensitizing for inhalation

Not classified as sensitizing for skin

Specific target organ toxicity

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No (test)data on the mixture available

Judgement is based on the relevant ingredients

N-(3-(trimethoxysilyl)propyl)ethylenediamine

| Route of exposure | Parameter | Method | Value | Organ | Effect | Exposure time | Species | Value determination |
|----------------------|-----------|------------------------|--------------------------|-------------------|-----------------------------|------------------------------------|---------------------|---------------------|
| Oral (stomach tube) | NOAEL | OECD 422 | ≥ 500 mg/kg bw | | No effect | 28 day(s) - 29 day(s) | Rat (male / female) | Experimental value |
| Dermal | NOAEL | Subacute toxicity test | ≥ 1545 mg/kg bw/day | | No adverse systemic effects | 11 day(s) | Rat (male / female) | Experimental value |
| Inhalation (aerosol) | NOAEC | OECD 413 | 15 mg/m ³ air | Respiratory tract | No adverse systemic effects | 13 weeks (6h / day, 5 days / week) | Rat (male / female) | Experimental value |
| Inhalation (aerosol) | LOAEL | OECD 413 | 45 mg/m ³ air | Respiratory tract | Impairment/degeneration | 13 weeks (6h / day, 5 days / week) | Rat (male / female) | Experimental value |

trimethoxyvinylsilane

| Route of exposure | Parameter | Method | Value | Organ | Effect | Exposure time | Species | Value determination |
|----------------------|-----------|--------------------------|-------------------|---------|---------------------------|------------------------------------|---------------------|---------------------|
| Oral (stomach tube) | NOAEL | OECD 422 | 62.5 mg/kg bw/day | | No effect | 6 weeks (daily) - 8 weeks (daily) | Rat (male / female) | Experimental value |
| Oral (stomach tube) | LOAEL | OECD 422 | 250 mg/kg bw/day | Bladder | Histopathological changes | 6 weeks (daily) - 8 weeks (daily) | Rat (male / female) | Experimental value |
| Inhalation (vapours) | NOAEC | Subchronic toxicity test | 100 ppm | | No effect | 14 weeks (6h / day, 5 days / week) | Rat (male / female) | Experimental value |

Conclusion

Not classified for subchronic toxicity

Mutagenicity (in vitro)

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No (test)data on the mixture available

Judgement is based on the relevant ingredients

N-(3-(trimethoxysilyl)propyl)ethylenediamine

| Result | Method | Test substrate | Effect | Value determination | Remark |
|---|------------------------|-----------------------------------|--------|---------------------|--------|
| Negative with metabolic activation, negative without metabolic activation | Equivalent to OECD 471 | Bacteria (<i>S.typhimurium</i>) | | Experimental value | |
| Negative with metabolic activation, negative without metabolic activation | Equivalent to OECD 476 | Chinese hamster ovary (CHO) | | Experimental value | |

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trimethoxyvinylsilane

| Result | Method | Test substrate | Effect | Value determination | Remark |
|---|----------|-----------------------------|------------------------|---------------------|--------|
| Positive with metabolic activation, positive without metabolic activation | OECD 473 | CHL/IU cells | Chromosome aberrations | Experimental value | |
| Negative with metabolic activation, negative without metabolic activation | OECD 476 | Chinese hamster ovary (CHO) | | Experimental value | |
| Negative with metabolic activation, negative without metabolic activation | OECD 471 | Bacteria (S.typhimurium) | | Experimental value | |

Mutagenicity (in vivo)

SEAL & BOND MS62 X

No (test)data on the mixture available

Judgement is based on the relevant ingredients

N-(3-(trimethoxysilyl)propyl)ethylenediamine

| Result | Method | Exposure time | Test substrate | Organ | Value determination |
|----------------------------|------------------------|---------------|-----------------------|-------|---------------------|
| Negative (Intraperitoneal) | Equivalent to OECD 474 | 30 h - 72 h | Mouse (male / female) | | Experimental value |

trimethoxyvinylsilane

| Result | Method | Exposure time | Test substrate | Organ | Value determination |
|---------------------------------|----------|-------------------|----------------|-------|---------------------|
| Negative (Inhalation (vapours)) | OECD 489 | 2 days (1x / day) | Rat (male) | | Experimental value |

Conclusion

Not classified for mutagenic or genotoxic toxicity

Carcinogenicity

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No (test)data on the mixture available

Judgement is based on the relevant ingredients

Conclusion

Not classified for carcinogenicity

Reproductive toxicity

SEAL & BOND MS62 X

No (test)data on the mixture available

Judgement is based on the relevant ingredients

N-(3-(trimethoxysilyl)propyl)ethylenediamine

| | Parameter | Method | Value | Exposure time | Species | Effect | Organ | Value determination |
|--|-----------|------------------------|--------------------|----------------------------|---------------------|------------------------------|-------|---------------------|
| Developmental toxicity (Oral (stomach tube)) | NOAEL | OECD 414 | 750 mg/kg bw/day | 14 days (gestation, daily) | Rat | No effect | | Experimental value |
| Maternal toxicity (Oral (stomach tube)) | NOAEL | OECD 414 | 750 mg/kg bw/day | 14 days (gestation, daily) | Rat | No effect | | Experimental value |
| Effects on fertility (Oral (stomach tube)) | NOAEL | Equivalent to OECD 422 | ≥ 500 mg/kg bw/day | | Rat (male / female) | Degeneration of heart tissue | | Experimental value |

trimethoxyvinylsilane

| | Parameter | Method | Value | Exposure time | Species | Effect | Organ | Value determination |
|---|-----------|------------------|-------------------|-------------------------------|--------------|-----------|----------|---------------------|
| Developmental toxicity (Inhalation (vapours)) | NOAEL | EPA OTS 798.4350 | 100 ppm | 10 days (gestation, 6h / day) | Rat | No effect | Skeleton | Experimental value |
| Maternal toxicity (Inhalation (vapours)) | NOAEL | EPA OTS 798.4350 | 25 ppm | 10 days (gestation, 6h / day) | Rat | No effect | | Experimental value |
| Effects on fertility (Oral (stomach tube)) | NOAEL (P) | OECD 422 | 1000 mg/kg bw/day | ≤ 43 day(s) | Rat (male) | No effect | | Experimental value |
| | NOAEL (P) | OECD 422 | 250 mg/kg bw/day | ≥ 60 day(s) | Rat (female) | No effect | | Experimental value |

Conclusion

Not classified for reprotoxic or developmental toxicity

Toxicity other effects

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No (test)data on the mixture available

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Chronic effects from short and long-term exposure

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Skin rash/inflammation.

11.2. Information on other hazards

No evidence of endocrine disrupting properties

SECTION 12: Ecological information

12.1. Toxicity

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No (test) data on the mixture available

Judgement of the mixture is based on the relevant ingredients

N-(3-(trimethoxysilyl)propyl)ethylenediamine

| | Parameter | Method | Value | Duration | Species | Test design | Fresh/salt water | Value determination |
|---|-----------|---------------|----------|-----------|---------------------------------|--------------------|------------------|---|
| Acute toxicity fishes | LC50 | EU Method C.1 | 597 mg/l | 96 h | Danio rerio | Semi-static system | Fresh water | Experimental value; GLP |
| Acute toxicity crustacea | EC50 | EU Method C.2 | 81 mg/l | 48 h | Daphnia magna | Static system | Fresh water | Experimental value; Locomotor effect |
| Toxicity algae and other aquatic plants | ErC50 | OECD 201 | 8.8 mg/l | 72 h | Pseudokirchneriella subcapitata | Static system | Fresh water | Experimental value; GLP |
| | NOEC | OECD 201 | 3.1 mg/l | 72 h | Pseudokirchneriella subcapitata | Static system | Fresh water | Experimental value; Growth rate |
| Long-term toxicity fish | | | | | | | | Data waiving |
| Long-term toxicity aquatic crustacea | NOEC | | ≥ 1 ppm | 21 day(s) | Daphnia magna | Semi-static system | Fresh water | Experimental value; Reproduction |
| Toxicity aquatic micro-organisms | EC50 | DIN 38412-8 | 67 mg/l | 16 h | Pseudomonas putida | Static system | Fresh water | Experimental value; Nominal concentration |

trimethoxyvinylsilane

| | Parameter | Method | Value | Duration | Species | Test design | Fresh/salt water | Value determination |
|---|-----------|---------------|------------|-----------|---------------------------------|--------------------|------------------|---|
| Acute toxicity fishes | LC50 | | 191 mg/l | 96 h | Oncorhynchus mykiss | | Fresh water | Experimental value; Nominal concentration |
| Acute toxicity crustacea | EC50 | EU Method C.2 | 168.7 mg/l | 48 h | Daphnia magna | Static system | Fresh water | Experimental value; Locomotor effect |
| Toxicity algae and other aquatic plants | ErC50 | | > 89 mg/l | 72 h | Pseudokirchneriella subcapitata | Static system | Fresh water | Experimental value; GLP |
| | NOEC | | > 89 mg/l | 72 h | Pseudokirchneriella subcapitata | Static system | Fresh water | Experimental value; Growth rate |
| Long-term toxicity fish | | | | | | | | Data waiving |
| Long-term toxicity aquatic crustacea | NOEC | OECD 211 | 28.1 mg/l | 21 day(s) | Daphnia magna | Semi-static system | Fresh water | Experimental value; Reproduction |
| Toxicity aquatic micro-organisms | EC50 | OECD 209 | > 100 mg/l | 3 h | Activated sludge | Static system | Fresh water | Experimental value; Respiration |

Conclusion

Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008

12.2. Persistence and degradability

N-(3-(trimethoxysilyl)propyl)ethylenediamine

Biodegradation water

| Method | Value | Duration | Value determination |
|---------------|-----------|-----------|---------------------|
| EU Method C.4 | 39 %; GLP | 28 day(s) | Experimental value |

Half-life water (t1/2 water)

| Method | Value | Primary degradation/mineralisation | Value determination |
|----------|-----------------|------------------------------------|---------------------|
| OECD 111 | 0.025 h; pH = 7 | Primary degradation | Experimental value |

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Biodegradation water

| Method | Value | Duration | Value determination |
|-----------|--------------------------|-----------|---------------------|
| OECD 301F | 51 %; Oxygen consumption | 28 day(s) | Experimental value |

Phototransformation air (DT50 air)

| Method | Value | Conc. OH-radicals | Value determination |
|--------------|---------|------------------------|---------------------|
| AOPWIN v1.92 | 4.458 h | 1.5E6 /cm ³ | Calculated value |

Half-life water (t1/2 water)

| Method | Value | Primary degradation/mineralisation | Value determination |
|----------|-----------------|------------------------------------|---------------------|
| OECD 111 | < 2.4 h; pH = 7 | Primary degradation | Weight of evidence |

Conclusion

Water

Contains non readily biodegradable component(s)

12.3. Bioaccumulative potential

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Log Kow

| Method | Remark | Value | Temperature | Value determination |
|--------|--------------------------|-------|-------------|---------------------|
| | Not applicable (mixture) | | | |

N-(3-(trimethoxysilyl)propyl)ethylenediamine

BCF fishes

| Parameter | Method | Value | Duration | Species | Value determination |
|-----------|--------|-------|----------|---------|---------------------|
| | | | | | Data waiving |

Log Kow

| Method | Remark | Value | Temperature | Value determination |
|--------|--------|-------|-------------|---------------------|
| KOWWIN | | -0.3 | 20 °C | QSAR |

trimethoxyvinylsilane

Log Kow

| Method | Remark | Value | Temperature | Value determination |
|--------|--------|-------|-------------|---------------------|
| KOWWIN | | 1.1 | 20 °C | QSAR |

Conclusion

Does not contain bioaccumulative component(s)

12.4. Mobility in soil

N-(3-(trimethoxysilyl)propyl)ethylenediamine

(log) Koc

| Parameter | Method | Value | Value determination |
|-----------|-------------------|-------|---------------------|
| log Koc | SRC PCKOCWIN v2.0 | 3.477 | Calculated value |

trimethoxyvinylsilane

(log) Koc

| Parameter | Method | Value | Value determination |
|-----------|-------------------|-------|---------------------|
| log Koc | SRC PCKOCWIN v2.0 | 2.811 | Calculated value |

Volatility (Henry's Law constant H)

| Value | Method | Temperature | Remark | Value determination |
|-------|--------------------|-------------|--------|---------------------|
| | SRC HENRYWIN v3.20 | | | |

Conclusion

Contains component(s) with potential for mobility in the soil

Contains component(s) that adsorb(s) into the soil

12.5. Results of PBT and vPvB assessment

Does not contain component(s) that meet(s) the criteria of PBT and/or vPvB as listed in Annex XIII of Regulation (EC) No 1907/2006.

12.6. Endocrine disrupting properties

No evidence of endocrine disrupting properties

12.7. Other adverse effects

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Greenhouse gases

None of the known components is included in the list of fluorinated greenhouse gases (Regulation (EU) No 517/2014)

Ozone-depleting potential (ODP)

Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009)

Groundwater

Groundwater pollutant

N-(3-(trimethoxysilyl)propyl)ethylenediamine

Water ecotoxicity pH

pH shift

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SECTION 13: Disposal considerations

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

13.1. Waste treatment methods

13.1.1 Provisions relating to waste

European Union

Can be considered as non hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997.

Waste material code (Directive 2008/98/EC, Decision 2000/0532/EC).

08 04 10 (wastes from MFSU of adhesives and sealants (including waterproofing products): waste adhesives and sealants other than those mentioned in 08 04 09). Depending on branch of industry and production process, also other waste codes may be applicable.

13.1.2 Disposal methods

Remove waste in accordance with local and/or national regulations. Dispose of the small quantities as household waste. Do not discharge into drains or the environment. Dispose of at authorized waste collection point.

13.1.3 Packaging/Container

European Union

Waste material code packaging (Directive 2008/98/EC).

15 01 02 (plastic packaging).

15 01 04 (metallic packaging).

SECTION 14: Transport information

Road (ADR), Rail (RID), Inland waterways (ADN), Sea (IMDG/IMSBC), Air (ICAO-TI/IATA-DGR)

14.1. UN number

| | |
|-----------|-------------|
| Transport | Not subject |
|-----------|-------------|

14.2. UN proper shipping name

14.3. Transport hazard class(es)

| | |
|------------------------------|--|
| Hazard identification number | |
| Class | |
| Classification code | |

14.4. Packing group

| | |
|---------------|--|
| Packing group | |
| Labels | |

14.5. Environmental hazards

| | |
|--|----|
| Environmentally hazardous substance mark | no |
|--|----|

14.6. Special precautions for user

| | |
|--------------------|--|
| Special provisions | |
| Limited quantities | |

14.7. Maritime transport in bulk according to IMO instruments

| | |
|--------------------------|---|
| Annex II of MARPOL 73/78 | Not applicable, based on available data |
|--------------------------|---|

SECTION 15: Regulatory information

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

European legislation:

VOC content Directive 2010/75/EU

| VOC content | Remark |
|-------------|--------|
| 0 % | |

Directive 2012/18/EU (Seveso III)

Not subject to registration according to Directive 2012/18/EU (Seveso III)

REACH Annex XVII - Restriction

Contains component(s) subject to restrictions of Annex XVII of Regulation (EC) No 1907/2006: restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles.

| | Designation of the substance, of the group of substances or of the mixture | Conditions of restriction |
|--|--|--|
| · N-(3-(trimethoxysilyl)propyl) ethylenediamine · trimethoxyvinylsilane | Liquid substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: (a) hazard classes 2.1 to 2.4, 2.6 and 2.7, 2.8 types A and B, 2.9, 2.10, 2.12, 2.13 categories 1 and 2, 2.14 categories 1 and 2, 2.15 types A to F; (b) hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10; (c) hazard class 4.1; (d) hazard class 5.1. | 1. Shall not be used in: — ornamental articles intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ashtrays, — tricks and jokes, — games for one or more participants, or any article intended to be used as such, even with ornamental aspects, 2. Articles not complying with paragraph 1 shall not be placed on the market. 3. Shall not be placed on the market if they contain a colouring agent, unless required for fiscal reasons, or perfume, or both, if they: — can be used as fuel in decorative oil lamps for supply to the general public, and, — present an aspiration hazard and are labelled with H304, 4. Decorative oil lamps for supply to the general public shall not be placed on the market unless they conform to the European Standard on Decorative oil lamps (EN 14059) adopted by the European Committee for Standardisation (CEN). 5. Without prejudice to the implementation of other Community provisions relating to |

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| | | |
|-------------------------|---|--|
| | | <p>the classification, packaging and labelling of dangerous substances and mixtures, suppliers shall ensure, before the placing on the market, that the following requirements are met:</p> <p>a) lamp oils, labelled with H304, intended for supply to the general public are visibly, legibly and indelibly marked as follows: "Keep lamps filled with this liquid out of the reach of children"; and, by 1 December 2010, "Just a sip of lamp oil — or even sucking the wick of lamps — may lead to life-threatening lung damage";</p> <p>b) grill lighter fluids, labelled with H304, intended for supply to the general public are legibly and indelibly marked by 1 December 2010 as follows: "Just a sip of grill lighter may lead to life threatening lung damage";</p> <p>c) lamp oils and grill lighters, labelled with H304, intended for supply to the general public are packaged in black opaque containers not exceeding 1 litre by 1 December 2010.</p> |
| · trimethoxyvinylsilane | <p>Substances classified as flammable gases category 1 or 2, flammable liquids categories 1, 2 or 3, flammable solids category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases, category 1, 2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in Part 3 of Annex VI to that Regulation or not.</p> | <p>1. Shall not be used, as substance or as mixtures in aerosol dispensers where these aerosol dispensers are intended for supply to the general public for entertainment and decorative purposes such as the following:</p> <ul style="list-style-type: none"> — metallic glitter intended mainly for decoration, — artificial snow and frost, — "whoopee" cushions, — silly string aerosols, — imitation excrement, — horns for parties, — decorative flakes and foams, — artificial cobwebs, — stink bombs. <p>2. Without prejudice to the application of other Community provisions on the classification, packaging and labelling of substances, suppliers shall ensure before the placing on the market that the packaging of aerosol dispensers referred to above is marked visibly, legibly and indelibly with:</p> <p>"For professional users only".</p> <p>3. By way of derogation, paragraphs 1 and 2 shall not apply to the aerosol dispensers referred to Article 8 (1a) of Council Directive 75/ 324/EEC.</p> <p>4. The aerosol dispensers referred to in paragraphs 1 and 2 shall not be placed on the market unless they conform to the requirements indicated.</p> |
| · trimethoxyvinylsilane | <p>Substances falling within one or more of the following points:</p> <p>(a) substances classified as any of the following in Part 3 of Annex VI to Regulation (EC) No 1272/2008:</p> <ul style="list-style-type: none"> — carcinogen category 1A, 1B or 2, or germ cell mutagen category 1A, 1B or 2, but excluding any such substances classified due to effects only following exposure by inhalation — reproductive toxicant category 1A, 1B or 2 but excluding any such substances classified due to effects only following exposure by inhalation — skin sensitiser category 1, 1A or 1B — skin corrosive category 1, 1A, 1B or 1C or skin irritant category 2 — serious eye damage category 1 or eye irritant category 2 <p>(b) substances listed in Annex II to Regulation (EC) No 1223/2009 of the European Parliament and of the Council</p> <p>(c) substances listed in Annex IV to Regulation (EC) No 1223/2009 for which a condition is specified in at least one of the columns g, h and i of the table in that Annex (d) substances listed in Appendix 13 to this Annex.</p> <p>The ancillary requirements in paragraphs 7 and 8 of column 2 of this entry apply to all mixtures for use for tattooing purposes, whether or not they contain a substance falling within points (a) to (d) of this column of this entry.</p> | <p>Mixtures for tattooing purposes are subject to the restrictions of Regulation (EU) 2020/2081</p> |

National legislation Belgium
SEAL & BOND MS62 X

No data available

National legislation The Netherlands
SEAL & BOND MS62 X

| | |
|----------------------|---|
| Waterbezwaarlijkheid | B (4); Algemene Beoordelingsmethodiek (ABM) |
|----------------------|---|

National legislation France
SEAL & BOND MS62 X

No data available

National legislation Germany
SEAL & BOND MS62 X

| | |
|-----|--|
| WGK | 1; Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen (AwSV) - 18. April 2017 |
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N-(3-(trimethoxysilyl)propyl)ethylenediamine

| | |
|---------|---------|
| TA-Luft | 5.2.5/I |
|---------|---------|

trimethoxyvinylsilane

| | |
|---------|-------|
| TA-Luft | 5.2.5 |
|---------|-------|

National legislation Austria

SEAL & BOND MS62 X

No data available

National legislation United Kingdom

SEAL & BOND MS62 X

No data available

Other relevant data

SEAL & BOND MS62 X

No data available

15.2. Chemical safety assessment

No chemical safety assessment has been conducted for the mixture.

SECTION 16: Other information

Full text of any H- and EUH-statements referred to under section 3:

H226 Flammable liquid and vapour.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H332 Harmful if inhaled.

H373 May cause damage to organs (respiratory tract) through prolonged or repeated exposure if inhaled.

EUH210 Safety data sheet available on request.

EUH208 Contains a sensitising substance. May produce an allergic reaction.

| | |
|--------------|--|
| (*) | INTERNAL CLASSIFICATION BY BIG |
| ADI | Acceptable daily intake |
| AOEL | Acceptable operator exposure level |
| ATE | Acute Toxicity Estimate |
| CLP (EU-GHS) | Classification, labelling and packaging (Globally Harmonised System in Europe) |
| DMEL | Derived Minimal Effect Level |
| DNEL | Derived No Effect Level |
| EC50 | Effect Concentration 50 % |
| ERC50 | EC50 in terms of reduction of growth rate |
| LC50 | Lethal Concentration 50 % |
| LD50 | Lethal Dose 50 % |
| NOAEL | No Observed Adverse Effect Level |
| NOEC | No Observed Effect Concentration |
| OECD | Organisation for Economic Co-operation and Development |
| PBT | Persistent, Bioaccumulative & Toxic |
| PNEC | Predicted No Effect Concentration |
| STP | Sludge Treatment Process |
| vPvB | very Persistent & very Bioaccumulative |

The information in this safety data sheet is based on data and samples provided to BIG. The sheet was written to the best of our ability and according to the state of knowledge at that time. The safety data sheet only constitutes a guideline for the safe handling, use, consumption, storage, transport and disposal of the substances/preparations/mixtures mentioned under point 1. New safety data sheets are written from time to time. Only the most recent versions may be used. Unless indicated otherwise word for word on the safety data sheet, the information does not apply to substances/preparations/mixtures in purer form, mixed with other substances or in processes. The safety data sheet offers no quality specification for the substances/preparations/mixtures in question. Compliance with the instructions in this safety data sheet does not release the user from the obligation to take all measures dictated by common sense, regulations and recommendations or which are necessary and/or useful based on the real applicable circumstances. BIG does not guarantee the accuracy or exhaustiveness of the information provided and cannot be held liable for any changes by third parties. This safety data sheet is only to be used within the European Union, Switzerland, Iceland, Norway and Liechtenstein. Any use outside of this area is at your own risk. Use of this safety data sheet is subject to the licence and liability limiting conditions as stated in your BIG licence agreement or when this is failing the general conditions of BIG. All intellectual property rights to this sheet are the property of BIG and its distribution and reproduction are limited. Consult the mentioned agreement/conditions for details.

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