

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

1.1. Product identifier

| | |
|--|------------------|
| Trade name or designation of the mixture | SEALANT 1X-SF |
| Registration number | - |
| Synonyms | None. |
| Product code | 800-0035 |
| Issue date | 20-February-2013 |
| Version number | 01 |
| Revision date | 20-February-2013 |
| Supersedes date | 25-January-2012 |

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

| | |
|----------------------|-------------------------|
| Identified uses | Industrial Leak Sealant |
| Uses advised against | None known. |

1.3. Details of the supplier of the safety data sheet

Supplier

| | |
|----------------|---|
| Company name | Team Industrial Services, Inc. |
| Address | Postbus 37 4380 AA Vlissingen 3237 The Netherlands |
| Telephone | +31 (0) 118 48 58 00 Fax +31 (0) 118 48 58 86 |
| e-mail | Not available. |
| Contact person | Not available. |

1.4. Emergency telephone number +1 703-527-3887

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Directive 67/548/EEC or 1999/45/EC as amended

Classification Muta. Cat. 3;R68, Xn;R21/22, Xi;R36/38, R43

The full text for all R-phrases is displayed in section 16.

Classification according to Regulation (EC) No 1272/2008 as amended

Health hazards

| | | |
|-----------------------------------|------------|---|
| Skin corrosion/irritation | Category 2 | H315 - Causes skin irritation. |
| Serious eye damage/eye irritation | Category 1 | H318 - Causes serious eye damage. |
| Skin sensitisation | Category 1 | H317 - May cause an allergic skin reaction. |
| Germ cell mutagenicity | Category 2 | |

Hazard summary

| | |
|------------------------------|--|
| Physical hazards | Not classified for physical hazards. |
| Health hazards | Harmful in contact with skin and if swallowed. Irritating to eyes and skin. May cause sensitisation by skin contact. Possible risk of irreversible effects. Occupational exposure to the substance or mixture may cause adverse health effects. |
| Environmental hazards | Not classified for hazards to the environment. |
| Specific hazards | May cause blood damage. May cause lung oedema. May cause damage to the liver and kidneys. High concentrations may lead to central nervous system effects (drowsiness, dizziness, nausea, headaches, paralysis and loss of consciousness). |
| Main symptoms | Unconsciousness. Coughing. Shortness of breath. Discomfort in the chest. Irritation of nose and throat. Symptoms include itching, burning, redness and tearing. Be aware that symptoms of lung oedema (shortness of breath) may develop up to 24 hours after exposure. |

2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Contains: Formaldehyde, m-Cresol, p-Cresol

Hazard pictograms



Signal word Danger

Hazard statements
H317 - May cause an allergic skin reaction.
H315 - Causes skin irritation.
H318 - Causes serious eye damage.

Precautionary statements

Prevention P280 - Wear protective gloves/protective clothing/eye protection/face protection.

Response
P302 + P350 - IF ON SKIN: Gently wash with plenty of soap and water.
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 - Immediately call a POISON CENTRE or doctor/physician.

Storage Store away from incompatible materials.

Disposal P501 - Dispose of contents/container in accordance with local/regional/national/international regulations.

Supplemental label information Contains: Hexamethylenetetramine. May produce an allergic reaction.

2.3. Other hazards Not a PBT or vPvB substance or mixture.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

General information

| Chemical name | % | CAS-No. / EC No. | REACH Registration No. | INDEX No. | Notes |
|-----------------------------------|---------------|-------------------------|------------------------|-----------|-------|
| Aluminium hydroxide | 25-50 | 21645-51-2 244-492-7 | - | - | |
| Classification: | DSD: - | | | | |
| | CLP: - | | | | |
| Aluminium oxide | 25-50 | 1344-28-1 215-691-6 | - | - | |
| Classification: | DSD: - | | | | |
| | CLP: - | | | | |
| Graphite | 5-10 | 7782-42-5 231-955-3 | - | - | |
| Classification: | DSD: - | | | | |
| | CLP: - | | | | |
| Phenol, polymer with formaldehyde | 5-10 | 9003-35-4 500-005-2 | - | - | |
| Classification: | DSD: - | | | | |
| | CLP: - | | | | |
| Carbon fiber | <5 | 7440-44-0 231-153-3 | - | - | |
| Classification: | DSD: - | | | | |
| | CLP: - | | | | |

| Chemical name | % | CAS-No. / EC No. | REACH Registration No. | INDEX No. | Notes |
|------------------------|--|-----------------------|------------------------|--------------|-------|
| Ethanol | <5 | 64-17-5 200-578-6 | - | 603-002-00-5 | |
| Classification: | DSD: F;R11 | | | | |
| | CLP: Flam. Liq. 2;H225 | | | | |
| m-Cresol | <5 | 108-39-4 203-577-9 | - | 604-004-00-9 | # |
| Classification: | DSD: T;R24/25, C;R34 | | | | |
| | CLP: Acute Tox. 3;H301, Acute Tox. 3;H311, Skin Corr. 1B;H314 | | | | |
| p-Cresol | <5 | 106-44-5 203-398-6 | - | 604-004-00-9 | # |
| Classification: | DSD: T;R24/25, C;R34 | | | | |
| | CLP: Acute Tox. 3;H301, Acute Tox. 3;H311, Skin Corr. 1B;H314 | | | | |
| 2,6-Xylenol | <1 | 576-26-1 209-400-1 | - | 604-006-00-X | |
| Classification: | DSD: T;R24/25, C;R34, N;R51/53 | | | | |
| | CLP: Acute Tox. 3;H301, Acute Tox. 3;H311, Skin Corr. 1B;H314, Eye Dam. 1;H318, Aquatic Chronic 2;H411 | | | | |
| Formaldehyde | <1 | 50-00-0 200-001-8 | - | 605-001-00-5 | |
| Classification: | DSD: Carc. Cat. 3;R40, T;R23/24/25, C;R34, R43 | | | | |
| | CLP: Acute Tox. 3;H301, Acute Tox. 3;H311, Skin Corr. 1B;H314, Skin Sens. 1;H317, Acute Tox. 3;H331, STOT SE 3;H335, Carc. 2;H351 | | | | |
| Hexamethylenetetramine | <1 | 100-97-0 202-905-8 | - | 612-101-00-2 | |
| Classification: | DSD: F;R11, R43 | | | | |
| | CLP: Flam. Sol. 2;H228, Skin Sens. 1;H317 | | | | |
| Methanol | <1 | 67-56-1 200-659-6 | - | 603-001-00-X | # |
| Classification: | DSD: F;R11, T;R23/24/25-39/23/24/25 | | | | |
| | CLP: Flam. Liq. 2;H225, Acute Tox. 3;H301, Acute Tox. 3;H311, Acute Tox. 3;H331, STOT SE 1;H370 | | | | |
| Phenol | <1 | 108-95-2 203-632-7 | - | 604-001-00-2 | # |
| Classification: | DSD: Muta. Cat. 3;R68, T;R23/24/25, C;R34, Xn;R48/20/21/22 | | | | |
| | CLP: Acute Tox. 3;H301, Acute Tox. 3;H311, Skin Corr. 1B;H314, Acute Tox. 3;H331, Muta. 2;H341, STOT RE 2;H373 | | | | |
| o-Ethylphenol | <1 | 90-00-6 | - | - | |
| Classification: | DSD: - | | | | |
| | CLP: - | | | | |

#: This substance has workplace exposure limit(s).

DSD: Directive 67/548/EEC.

CLP: Regulation No. 1272/2008.

Composition comments

The full text for all R- and H-phrases is displayed in section 16. All concentrations are in percent by weight.

SECTION 4: First aid measures

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|--|---|
| General information | Chemical burns must be treated by a physician. |
| 4.1. Description of first aid measures | |
| Inhalation | If breathing stops, provide artificial respiration. Get medical attention immediately. |
| Skin contact | Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. |
| Eye contact | Flush thoroughly with water for at least 15 minutes. Get immediate medical assistance. If medical assistance is not immediately available, flush an additional 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| Ingestion | Rinse mouth thoroughly with water and give large amounts of milk or water to people not unconscious. Only induce vomiting at the instruction of medical personnel. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical attention immediately. |
| 4.2. Most important symptoms and effects, both acute and delayed | Unconsciousness. Coughing. Shortness of breath. Irritation of nose and throat may occur. Symptoms include itching, burning, redness and tearing. |
| 4.3. Indication of any immediate medical attention and special treatment needed | Be aware that symptoms of lung oedema (shortness of breath) may develop up to 24 hours after exposure. |

SECTION 5: Firefighting measures

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|---|---|
| General fire hazards | Combustible liquid. Heated material: vapours may travel to a source of ignition and flash back. If heated, volume and pressure increases strongly, resulting in explosion of container. |
| 5.1. Extinguishing media | |
| Suitable extinguishing media | Extinguish with alcohol-resistant foam, carbon dioxide or dry powder. |
| Unsuitable extinguishing media | No restrictions known. |
| 5.2. Special hazards arising from the substance or mixture | Solvent vapours may form explosive mixtures with air. During fire, gases hazardous to health may be formed. |
| 5.3. Advice for firefighters | |
| Special protective equipment for firefighters | Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace. |
| Special fire fighting procedures | Ventilate closed spaces before entering them. Containers should be cooled with water to prevent vapor pressure build up. Prevent runoff from fire control or dilution from entering streams, sewers or drinking water supply. Evacuate area and fight fire from a safe distance. Stop leak if you can do so without risk. Move containers from fire area if you can do it without risk. |

SECTION 6: Accidental release measures

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|---|---|
| 6.1. Personal precautions, protective equipment and emergency procedures | |
| For non-emergency personnel | Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Ventilate closed spaces before entering them. Avoid inhalation of vapours and contact with skin and eyes. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. For personal protection, see section 8 of the SDS. |
| For emergency responders | Use personal protection as recommended in section 8 of the SDS. |
| 6.2. Environmental precautions | Prevent further leakage or spillage if safe to do so. Do not contaminate water. Environmental manager must be informed of all major spillages. |
| 6.3. Methods and material for containment and cleaning up | Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Eliminate all ignition sources. Stop leak if you can do so without risk. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Sweep up or vacuum up spillage and collect in suitable container for disposal. Clean contaminated surface thoroughly. Never return spills in original containers for re-use. This material and its container must be disposed of as hazardous waste. Collect and dispose of spillage as indicated in section 13 of the SDS. |
| 6.4. Reference to other sections | For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS. |

SECTION 7: Handling and storage

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| 7.1. Precautions for safe handling | Avoid inhalation of vapours and contact with skin and eyes. The product is combustible, and heating may generate vapours which may form explosive vapour/air mixtures. Vapours are heavier than air and may travel along the floor and in the bottom of containers. Use personal protective equipment as required. Use only with adequate ventilation. |
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7.2. Conditions for safe storage, including any incompatibilities

Keep away from heat, spark, open flames and other sources of ignition. Keep away from sources of ignition - No smoking. Store in a cool, dry, well-ventilated place.

7.3. Specific end use(s)

Industrial Leak Sealant

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

Austria. MAK List

| Components | Type | Value | Form |
|--------------------------------------|---------|------------|----------------------|
| Aluminium hydroxide (CAS 21645-51-2) | MAK | 5 mg/m3 | Respirable fraction. |
| | STEL | 10 mg/m3 | Inhalable fraction. |
| | | 20 mg/m3 | Inhalable fraction. |
| Aluminium oxide (CAS 1344-28-1) | MAK | 10 mg/m3 | Respirable fraction. |
| | | 5 mg/m3 | Respirable fume. |
| | | 5 mg/m3 | Respirable fraction. |
| | STEL | 10 mg/m3 | Inhalable fraction. |
| | | 20 mg/m3 | Inhalable fraction. |
| Carbon fiber (CAS 7440-44-0) | MAK | 10 mg/m3 | Respirable fraction. |
| | | 5 mg/m3 | Respirable dust. |
| | STEL | 10 mg/m3 | Respirable dust. |
| Ethanol (CAS 64-17-5) | Ceiling | 3800 mg/m3 | |
| | MAK | 2000 ppm | |
| Formaldehyde (CAS 50-00-0) | Ceiling | 1900 mg/m3 | |
| | | 1000 ppm | |
| | MAK | 0,6 mg/m3 | |
| | | 0,5 ppm | |
| Graphite (CAS 7782-42-5) | MAK | 0,5 ppm | Respirable dust. |
| | STEL | 5 mg/m3 | Respirable dust. |
| m-Cresol (CAS 108-39-4) | Ceiling | 10 mg/m3 | |
| | | 44 mg/m3 | |
| | MAK | 10 ppm | |
| p-Cresol (CAS 106-44-5) | Ceiling | 22 mg/m3 | |
| | | 5 ppm | |
| | MAK | 44 mg/m3 | |
| | | 10 ppm | |
| | | 22 mg/m3 | |
| | | 5 ppm | |

Belgium. Exposure Limit Values.

| Components | Type | Value | Form |
|---------------------------------|------|------------|----------------------|
| Aluminium oxide (CAS 1344-28-1) | TWA | 1 mg/m3 | Respirable fraction. |
| Carbon fiber (CAS 7440-44-0) | TWA | 2 mg/m3 | Respirable fraction. |
| Ethanol (CAS 64-17-5) | TWA | 1907 mg/m3 | |
| | | 1000 ppm | |
| Formaldehyde (CAS 50-00-0) | STEL | 0,38 mg/m3 | |
| | | 0,3 ppm | |
| Graphite (CAS 7782-42-5) | TWA | 2 mg/m3 | Respirable fraction. |
| m-Cresol (CAS 108-39-4) | TWA | 22 mg/m3 | |
| | | 5 ppm | |
| p-Cresol (CAS 106-44-5) | TWA | 22 mg/m3 | |
| | | 5 ppm | |

Bulgaria. OELs. Regulation No 13 on protection of workers against risks of exposure to chemical agents at work

| Components | Type | Value | Form |
|---------------------------------------|------|--|---|
| Aluminium oxide (CAS 1344-28-1) | TWA | 10 mg/m ³ | Dust. |
| Carbon fiber (CAS 7440-44-0) | TWA | 1,5 mg/m ³ 5 mg/m ³ | Respirable fraction. Inhalable fraction. |
| Ethanol (CAS 64-17-5) | TWA | 1000 mg/m ³ | |
| Formaldehyde (CAS 50-00-0) | STEL | 2 mg/m ³ | |
| Graphite (CAS 7782-42-5) | TWA | 1 mg/m ³ | |
| Hexamethylenetetramine (CAS 100-97-0) | TWA | 5 mg/m ³ | Inhalable fraction. |
| m-Cresol (CAS 108-39-4) | TWA | 2 mg/m ³ | |
| p-Cresol (CAS 106-44-5) | TWA | 22 mg/m ³ 22 mg/m ³ | |

Cyprus. OELs. Control of factory atmosphere and dangerous substances in factories regulation, PI 311/73, as amended.

| Components | Type | Value |
|------------------------------|------|-------------------------------|
| Carbon fiber (CAS 7440-44-0) | TWA | 10 mg/m ³ |
| Formaldehyde (CAS 50-00-0) | TWA | 3 mg/m ³ |
| Graphite (CAS 7782-42-5) | TWA | 2 ppm 10 mg/m ³ |

Czech Republic. OELs. Government Decree 361

| Components | Type | Value | Form |
|---|---------|--|---------------------------------|
| Aluminium oxide (CAS 1344-28-1) | TWA | 0,1 mg/m ³ | Respirable dust. |
| Carbon fiber (CAS 7440-44-0) | TWA | 10 mg/m ³ | Respirable dust. |
| Ethanol (CAS 64-17-5) | Ceiling | 10 mg/m ³ 3000 mg/m ³ | Total dust. |
| Formaldehyde (CAS 50-00-0) | TWA | 1000 mg/m ³ | |
| Graphite (CAS 7782-42-5) | Ceiling | 1 mg/m ³ | |
| m-Cresol (CAS 108-39-4) | TWA | 0,5 mg/m ³ | |
| p-Cresol (CAS 106-44-5) | TWA | 10 mg/m ³ 10 mg/m ³ | Respirable dust. Total dust. |
| Phenol, polymer with formaldehyde (CAS 9003-35-4) | Ceiling | 40 mg/m ³ 20 mg/m ³ | |
| | TWA | 40 mg/m ³ 20 mg/m ³ | |
| | TWA | 20 mg/m ³ | |
| | TWA | 5 mg/m ³ | Dust. |

Denmark. Exposure Limit Values

| Components | Type | Value | Form |
|---------------------------------|---------|--|----------------------------|
| Aluminium oxide (CAS 1344-28-1) | TLV | 5 mg/m ³ | Total |
| Carbon fiber (CAS 7440-44-0) | TLV | 2 mg/m ³ 2,5 mg/m ³ | Respirable. Respirable. |
| Ethanol (CAS 64-17-5) | TLV | 1900 mg/m ³ 1000 ppm | |
| Formaldehyde (CAS 50-00-0) | Ceiling | 0,4 mg/m ³ | |
| Graphite (CAS 7782-42-5) | TLV | 0,3 ppm 2,5 mg/m ³ | Respirable. |
| m-Cresol (CAS 108-39-4) | TLV | 22 mg/m ³ 5 ppm | |
| p-Cresol (CAS 106-44-5) | TLV | 22 mg/m ³ 5 ppm | |

Estonia. OELs. Occupational Exposure Limits of Hazardous Substances. (Annex of Regulation No. 293 of 18 September 2001)

| Components | Type | Value | Form |
|---------------------------------------|------|------------|------------------|
| Aluminium oxide (CAS 1344-28-1) | TWA | 4 mg/m3 | Respirable dust. |
| | | 10 mg/m3 | Total dust. |
| Carbon fiber (CAS 7440-44-0) | TWA | 3 mg/m3 | Dust. |
| Ethanol (CAS 64-17-5) | STEL | 1900 mg/m3 | |
| | TWA | 1000 ppm | |
| Formaldehyde (CAS 50-00-0) | TWA | 1000 mg/m3 | |
| | | 500 ppm | |
| Graphite (CAS 7782-42-5) | TWA | 0,6 mg/m3 | |
| | STEL | 0,5 ppm | Dust. |
| Hexamethylenetetramine (CAS 100-97-0) | TWA | 5 mg/m3 | |
| m-Cresol (CAS 108-39-4) | TWA | 3 mg/m3 | |
| | TWA | 22 mg/m3 | |
| p-Cresol (CAS 106-44-5) | TWA | 5 ppm | |
| | | 22 mg/m3 | |
| | | 5 ppm | |

Finland. Workplace Exposure Limits

| Components | Type | Value | Form |
|------------------------------|---------|------------|------|
| Carbon fiber (CAS 7440-44-0) | TWA | 2 mg/m3 | |
| Ethanol (CAS 64-17-5) | STEL | 2500 mg/m3 | |
| | TWA | 1300 ppm | |
| Formaldehyde (CAS 50-00-0) | TWA | 1900 mg/m3 | |
| | Ceiling | 1000 ppm | |
| Graphite (CAS 7782-42-5) | TWA | 1,2 mg/m3 | |
| | | 1 ppm | |
| m-Cresol (CAS 108-39-4) | TWA | 0,37 mg/m3 | |
| | STEL | 0,3 ppm | |
| p-Cresol (CAS 106-44-5) | TWA | 2 mg/m3 | |
| | STEL | 45 mg/m3 | |
| | TWA | 10 ppm | |
| | | 22 mg/m3 | |
| | | 5 ppm | |
| | | 45 mg/m3 | |
| | | 10 ppm | |
| | | 22 mg/m3 | |
| | | 5 ppm | |

France. Threshold Limit Values (VLEP) for Occupational Exposure to Chemicals in France, INRS ED 984

| Components | Type | Value | Form |
|---------------------------------|------|------------|----------------------|
| Aluminium oxide (CAS 1344-28-1) | VME | 10 mg/m3 | |
| Carbon fiber (CAS 7440-44-0) | VME | 2 mg/m3 | Respirable fraction. |
| Ethanol (CAS 64-17-5) | VLE | 9500 mg/m3 | |
| | VME | 5000 ppm | |
| Formaldehyde (CAS 50-00-0) | VLE | 1900 mg/m3 | |
| | VME | 1000 ppm | |
| Graphite (CAS 7782-42-5) | VLE | 1 ppm | |
| | VME | 0,5 ppm | Respirable fraction. |
| m-Cresol (CAS 108-39-4) | VME | 2 mg/m3 | |
| | VME | 22 mg/m3 | |
| p-Cresol (CAS 106-44-5) | VME | 5 ppm | |
| | | 22 mg/m3 | |
| | | 5 ppm | |

Germany. DFG MAK List (advisory OELs). Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (DFG)

| Components | Type | Value | Form |
|--------------------------------------|------|------------------------|----------------------|
| Aluminium hydroxide (CAS 21645-51-2) | TWA | 4 mg/m ³ | Inhalable dust. |
| Aluminium oxide (CAS 1344-28-1) | TWA | 1,5 mg/m ³ | Respirable dust. |
| | | 4 mg/m ³ | Inhalable dust. |
| Carbon fiber (CAS 7440-44-0) | TWA | 1,5 mg/m ³ | Respirable dust. |
| | | 4 mg/m ³ | Inhalable fraction. |
| Ethanol (CAS 64-17-5) | TWA | 1,5 mg/m ³ | Respirable fraction. |
| | | 960 mg/m ³ | |
| Formaldehyde (CAS 50-00-0) | TWA | 500 ppm | |
| | | 0,37 mg/m ³ | |
| Graphite (CAS 7782-42-5) | TWA | 0,3 ppm | |
| | | 4 mg/m ³ | Inhalable fraction. |
| | | 1,5 mg/m ³ | Respirable fraction. |

Germany. TRGS 900, Limit Values in the Ambient Air at the Workplace

| Components | Type | Value | Form |
|--------------------------------------|------|-----------------------|----------------------|
| Aluminium hydroxide (CAS 21645-51-2) | AGW | 3 mg/m ³ | Respirable fraction. |
| Aluminium oxide (CAS 1344-28-1) | AGW | 10 mg/m ³ | Inhalable fraction. |
| | | 3 mg/m ³ | Respirable fraction. |
| Carbon fiber (CAS 7440-44-0) | AGW | 10 mg/m ³ | Inhalable fraction. |
| | | 3 mg/m ³ | Respirable fraction. |
| Ethanol (CAS 64-17-5) | AGW | 10 mg/m ³ | Inhalable fraction. |
| | | 960 mg/m ³ | |
| Graphite (CAS 7782-42-5) | AGW | 500 ppm | |
| | | 3 mg/m ³ | Respirable fraction. |
| | | 10 mg/m ³ | Inhalable fraction. |

Greece. OELs (Decree No. 90/1999, as amended)

| Components | Type | Value | Form |
|---------------------------------|------|------------------------|-------------|
| Aluminium oxide (CAS 1344-28-1) | TWA | 5 mg/m ³ | Inhalable |
| Carbon fiber (CAS 7440-44-0) | TWA | 10 mg/m ³ | Respirable. |
| | | 5 mg/m ³ | Respirable. |
| Ethanol (CAS 64-17-5) | TWA | 10 mg/m ³ | Inhalable |
| | | 1900 mg/m ³ | |
| Formaldehyde (CAS 50-00-0) | STEL | 1000 ppm | |
| | | 2,5 mg/m ³ | |
| Graphite (CAS 7782-42-5) | TWA | 2 ppm | |
| | | 2,5 mg/m ³ | |
| m-Cresol (CAS 108-39-4) | TWA | 2 ppm | |
| | | 5 mg/m ³ | Respirable. |
| p-Cresol (CAS 106-44-5) | TWA | 10 mg/m ³ | Inhalable |
| | | 22 mg/m ³ | |
| | | 5 ppm | |
| | | 22 mg/m ³ | |
| | | 5 ppm | |

Hungary. OELs. Joint Decree on Chemical Safety of Workplaces

| Components | Type | Value | Form |
|---------------------------------|------|------------------------|-------------|
| Aluminium oxide (CAS 1344-28-1) | TWA | 6 mg/m ³ | Respirable. |
| Ethanol (CAS 64-17-5) | STEL | 7600 mg/m ³ | |
| | | 1900 mg/m ³ | |
| Formaldehyde (CAS 50-00-0) | STEL | 0,6 mg/m ³ | |

Hungary. OELs. Joint Decree on Chemical Safety of Workplaces

| Components | Type | Value | Form |
|-------------------------|------|-----------------------|------|
| m-Cresol (CAS 108-39-4) | TWA | 0,6 mg/m ³ | |
| | STEL | 22 mg/m ³ | |
| p-Cresol (CAS 106-44-5) | TWA | 22 mg/m ³ | |
| | STEL | 22 mg/m ³ | |
| | TWA | 22 mg/m ³ | |

Iceland. OELs. Regulation 154/1999 on occupational exposure limits

| Components | Type | Value | Form |
|---------------------------------------|------|------------------------|------------------|
| Aluminium oxide (CAS 1344-28-1) | TWA | 10 mg/m ³ | |
| Carbon fiber (CAS 7440-44-0) | TWA | 5 mg/m ³ | Total dust. |
| | | 2,5 mg/m ³ | Respirable dust. |
| Ethanol (CAS 64-17-5) | TWA | 1900 mg/m ³ | |
| | | 1000 ppm | |
| Formaldehyde (CAS 50-00-0) | STEL | 1,2 mg/m ³ | |
| | TWA | 1 ppm | |
| Graphite (CAS 7782-42-5) | TWA | 0,4 mg/m ³ | |
| | | 0,3 ppm | |
| Hexamethylenetetramine (CAS 100-97-0) | TWA | 5 mg/m ³ | Total dust. |
| | | 2,5 mg/m ³ | Respirable dust. |
| m-Cresol (CAS 108-39-4) | TWA | 3 mg/m ³ | |
| | | 22 mg/m ³ | |
| p-Cresol (CAS 106-44-5) | TWA | 5 ppm | |
| | | 22 mg/m ³ | |
| | | 5 ppm | |

Ireland. Occupational Exposure Limits

| Components | Type | Value | Form |
|---------------------------------|------|-----------------------|-----------------------|
| Aluminium oxide (CAS 1344-28-1) | TWA | 4 mg/m ³ | Respirable dust. |
| Carbon fiber (CAS 7440-44-0) | TWA | 10 mg/m ³ | Total inhalable dust. |
| | | 4 mg/m ³ | Respirable dust. |
| Ethanol (CAS 64-17-5) | STEL | 10 mg/m ³ | Total inhalable dust. |
| | | 1000 ppm | |
| Formaldehyde (CAS 50-00-0) | STEL | 2,5 mg/m ³ | |
| | TWA | 2 ppm | |
| Graphite (CAS 7782-42-5) | TWA | 2,5 mg/m ³ | |
| | | 2 ppm | |
| m-Cresol (CAS 108-39-4) | TWA | 4 mg/m ³ | Respirable dust. |
| | | 10 mg/m ³ | Total inhalable dust. |
| p-Cresol (CAS 106-44-5) | TWA | 22 mg/m ³ | |
| | | 5 ppm | |
| | | 22 mg/m ³ | |
| | | 5 ppm | |

Italy. OELs

| Components | Type | Value | Form |
|--------------------------------------|---------|----------------------|-------------------------------|
| Aluminium hydroxide (CAS 21645-51-2) | TWA | 1 mg/m ³ | Respirable fraction. |
| Aluminium oxide (CAS 1344-28-1) | TWA | 1 mg/m ³ | Respirable fraction. |
| Carbon fiber (CAS 7440-44-0) | TWA | 2 mg/m ³ | Respirable fraction. |
| Ethanol (CAS 64-17-5) | STEL | 1000 ppm | |
| Formaldehyde (CAS 50-00-0) | Ceiling | 0,3 ppm | |
| Graphite (CAS 7782-42-5) | TWA | 2 mg/m ³ | Respirable fraction. |
| m-Cresol (CAS 108-39-4) | TWA | 20 mg/m ³ | Inhalable fraction and vapor. |

Italy. OELs

| Components | Type | Value | Form |
|-------------------------|------|----------------------|-------------------------------|
| p-Cresol (CAS 106-44-5) | TWA | 20 mg/m ³ | Inhalable fraction and vapor. |

Latvia. OELs. Occupational exposure limit values of chemical substances in work environment

| Components | Type | Value | Form |
|--------------------------------------|------|------------------------|------------------------|
| Aluminium hydroxide (CAS 21645-51-2) | TWA | 6 mg/m ³ | |
| Aluminium oxide (CAS 1344-28-1) | TWA | 6 mg/m ³ | Decomposition aerosol. |
| | | 4 mg/m ³ | |
| Carbon fiber (CAS 7440-44-0) | TWA | 2 mg/m ³ | Dust. |
| Ethanol (CAS 64-17-5) | TWA | 1000 mg/m ³ | |
| Formaldehyde (CAS 50-00-0) | TWA | 0,5 mg/m ³ | |
| Graphite (CAS 7782-42-5) | TWA | 2 mg/m ³ | Dust. |
| m-Cresol (CAS 108-39-4) | TWA | 22 mg/m ³ | |
| | | 5 ppm | |
| p-Cresol (CAS 106-44-5) | TWA | 22 mg/m ³ | |
| | | 5 ppm | |

Lithuania. OELs. Limit Values for Chemical Substances, General Requirements (Hygiene Norm HN 23:2007)

| Components | Type | Value | Form |
|---|---------|------------------------|----------------------|
| Aluminium hydroxide (CAS 21645-51-2) | TWA | 6 mg/m ³ | |
| Aluminium oxide (CAS 1344-28-1) | TWA | 5 mg/m ³ | Inhalable fraction. |
| | | 2 mg/m ³ | Respirable fraction. |
| Carbon fiber (CAS 7440-44-0) | TWA | 3 mg/m ³ | Dust. |
| Ethanol (CAS 64-17-5) | STEL | 1900 mg/m ³ | |
| | | 1000 ppm | |
| | TWA | 1000 mg/m ³ | |
| | | 500 ppm | |
| Formaldehyde (CAS 50-00-0) | Ceiling | 1 mg/m ³ | |
| | | 1,2 ppm | |
| | TWA | 0,6 mg/m ³ | |
| | | 0,5 ppm | |
| Graphite (CAS 7782-42-5) | TWA | 3 mg/m ³ | Dust. |
| Hexamethylenetetramine (CAS 100-97-0) | STEL | 5 mg/m ³ | |
| | TWA | 3 mg/m ³ | |
| m-Cresol (CAS 108-39-4) | TWA | 22 mg/m ³ | |
| | | 5 ppm | |
| p-Cresol (CAS 106-44-5) | TWA | 22 mg/m ³ | |
| | | 5 ppm | |
| Phenol, polymer with formaldehyde (CAS 9003-35-4) | TWA | 3 mg/m ³ | Dust. |

Luxembourg. Binding Occupational exposure limit values (Annex I), Memorial A

| Components | Type | Value |
|-------------------------|------|----------------------|
| m-Cresol (CAS 108-39-4) | TWA | 22 mg/m ³ |
| | | 5 ppm |
| p-Cresol (CAS 106-44-5) | TWA | 22 mg/m ³ |
| | | 5 ppm |

Malta. OELs. Occupational Exposure Limit Values (L.N. 227. of Occupational Health and Safety Authority Act (CAP. 424), Schedules I and V)

| Components | Type | Value |
|-------------------------|------|----------------------|
| m-Cresol (CAS 108-39-4) | TWA | 22 mg/m ³ |
| | | 5 ppm |
| p-Cresol (CAS 106-44-5) | TWA | 22 mg/m ³ |

Malta. OELs. Occupational Exposure Limit Values (L.N. 227. of Occupational Health and Safety Authority Act (CAP. 424), Schedules I and V)

| Components | Type | Value |
|------------|------|-------|
| | | 5 ppm |

Netherlands. OELs (binding)

| Components | Type | Value |
|----------------------------|------|------------------------|
| Ethanol (CAS 64-17-5) | STEL | 1900 mg/m ³ |
| | TWA | 260 mg/m ³ |
| Formaldehyde (CAS 50-00-0) | STEL | 0,5 mg/m ³ |
| | TWA | 0,15 mg/m ³ |

Norway. Administrative Norms for Contaminants in the Workplace

| Components | Type | Value | Form |
|---------------------------------------|---------|-----------------------|------------------|
| Aluminium oxide (CAS 1344-28-1) | TLV | 10 mg/m ³ | |
| Carbon fiber (CAS 7440-44-0) | TLV | 2 mg/m ³ | Respirable dust. |
| | | 10 mg/m ³ | Total dust. |
| Ethanol (CAS 64-17-5) | TLV | 950 mg/m ³ | |
| | | 500 ppm | |
| Formaldehyde (CAS 50-00-0) | Ceiling | 1,2 mg/m ³ | |
| | | 1 ppm | |
| | TLV | 0,6 mg/m ³ | |
| | | 0,5 ppm | |
| Graphite (CAS 7782-42-5) | TLV | 2 mg/m ³ | Respirable dust. |
| | | 10 mg/m ³ | Total dust. |
| Hexamethylenetetramine (CAS 100-97-0) | TLV | 3 mg/m ³ | |
| m-Cresol (CAS 108-39-4) | TLV | 22 mg/m ³ | |
| | | 5 ppm | |
| p-Cresol (CAS 106-44-5) | TLV | 22 mg/m ³ | |
| | | 5 ppm | |

Poland. MACs. Minister of Labour and Social Policy Regarding Maximum Allowable Concentrations and Intensities in Working Environment

| Components | Type | Value | Form |
|---------------------------------------|------|------------------------|------------------------------|
| Aluminium hydroxide (CAS 21645-51-2) | TWA | 2,5 mg/m ³ | Fume, total dust. |
| | | 1,2 mg/m ³ | Respirable dust and/or fume. |
| Aluminium oxide (CAS 1344-28-1) | TWA | 2,5 mg/m ³ | Fume, total dust. |
| | | 1,2 mg/m ³ | Respirable dust and/or fume. |
| Carbon fiber (CAS 7440-44-0) | TWA | 4 mg/m ³ | Total dust. |
| | | 1 mg/m ³ | Respirable dust. |
| Ethanol (CAS 64-17-5) | TWA | 1900 mg/m ³ | |
| Formaldehyde (CAS 50-00-0) | STEL | 1 mg/m ³ | |
| | TWA | 0,5 mg/m ³ | |
| Graphite (CAS 7782-42-5) | TWA | 4 mg/m ³ | Total dust. |
| | | 1 mg/m ³ | Respirable dust. |
| Hexamethylenetetramine (CAS 100-97-0) | TWA | 4 mg/m ³ | |
| m-Cresol (CAS 108-39-4) | TWA | 22 mg/m ³ | |
| p-Cresol (CAS 106-44-5) | TWA | 22 mg/m ³ | |

Portugal. VLEs. Norm on occupational exposure to chemical agents (NP 1796)

| Components | Type | Value | Form |
|---------------------------------|------|----------------------|------|
| Aluminium oxide (CAS 1344-28-1) | TWA | 10 mg/m ³ | |

Portugal. VLEs. Norm on occupational exposure to chemical agents (NP 1796)

| Components | Type | Value | Form |
|------------------------------|---------|----------|----------------------|
| Carbon fiber (CAS 7440-44-0) | TWA | 2 mg/m3 | Respirable fraction. |
| Ethanol (CAS 64-17-5) | TWA | 1000 ppm | |
| Formaldehyde (CAS 50-00-0) | Ceiling | 0,3 ppm | |
| Graphite (CAS 7782-42-5) | TWA | 2 mg/m3 | Respirable fraction. |
| m-Cresol (CAS 108-39-4) | TWA | 5 ppm | |
| p-Cresol (CAS 106-44-5) | TWA | 5 ppm | |

Romania. OELs. Protection of workers from exposure to chemical agents at the workplace

| Components | Type | Value | Form |
|---------------------------------|------|------------|---------|
| Aluminium oxide (CAS 1344-28-1) | STEL | 5 mg/m3 | Aerosol |
| | | 1,2 ppm | Aerosol |
| | TWA | 2 mg/m3 | Aerosol |
| Ethanol (CAS 64-17-5) | | 0,5 ppm | Aerosol |
| | STEL | 9500 mg/m3 | |
| | TWA | 5000 ppm | |
| Formaldehyde (CAS 50-00-0) | | 1900 mg/m3 | |
| | STEL | 1000 ppm | |
| | TWA | 3 mg/m3 | |
| m-Cresol (CAS 108-39-4) | | 2 ppm | |
| | TWA | 1,2 mg/m3 | |
| | | 1 ppm | |
| p-Cresol (CAS 106-44-5) | TWA | 22 mg/m3 | |
| | | 5 ppm | |
| | TWA | 22 mg/m3 | |
| | | 5 ppm | |

Slovakia. OELs. Decree of the government of the Slovak Republic concerning protection of health in work with chemical agents

| Components | Type | Value | Form |
|--------------------------------------|------|------------|----------------------|
| Aluminium hydroxide (CAS 21645-51-2) | TWA | 4 mg/m3 | Inhalable fraction. |
| Aluminium oxide (CAS 1344-28-1) | | 1,5 mg/m3 | Respirable fraction. |
| | TWA | 4 mg/m3 | Inhalable fraction. |
| Carbon fiber (CAS 7440-44-0) | | 1,5 mg/m3 | Respirable fraction. |
| | TWA | 0,1 mg/m3 | |
| Ethanol (CAS 64-17-5) | | 2 mg/m3 | Respirable fraction. |
| | TWA | 10 mg/m3 | Total |
| Formaldehyde (CAS 50-00-0) | | 960 mg/m3 | |
| | TWA | 500 ppm | |
| Graphite (CAS 7782-42-5) | | 0,37 mg/m3 | |
| | TWA | 0,3 ppm | |
| m-Cresol (CAS 108-39-4) | | 2 mg/m3 | Respirable fraction. |
| | TWA | 10 mg/m3 | Total |
| p-Cresol (CAS 106-44-5) | | 22 mg/m3 | |
| | TWA | 5 ppm | |
| | | 22 mg/m3 | |
| | | 5 ppm | |

Slovenia. OELs. Regulations concerning protection of workers against risks due to exposure to chemicals while working (Official Gazette of the Republic of Slovenia)

| Components | Type | Value |
|----------------------------|------|------------|
| Ethanol (CAS 64-17-5) | TWA | 1900 mg/m3 |
| Formaldehyde (CAS 50-00-0) | | 1000 ppm |
| | TWA | 0,62 mg/m3 |
| | | 0,5 ppm |

Slovenia. OELs. Regulations concerning protection of workers against risks due to exposure to chemicals while working (Official Gazette of the Republic of Slovenia)

| Components | Type | Value |
|-------------------------|------|-------------------------------|
| m-Cresol (CAS 108-39-4) | TWA | 22 mg/m ³ 5 ppm |
| p-Cresol (CAS 106-44-5) | TWA | 22 mg/m ³ 5 ppm |

Spain

| Components | Type | Value | Form |
|--------------------------|--------------|---------------------|-------|
| Graphite (CAS 7782-42-5) | TWA (VLA-ED) | 2 mg/m ³ | Dust. |

Spain. Occupational Exposure Limits

| Components | Type | Value | Form |
|---------------------------------|------|------------------------------------|-------|
| Aluminium oxide (CAS 1344-28-1) | TWA | 10 mg/m ³ | |
| Carbon fiber (CAS 7440-44-0) | TWA | 2 mg/m ³ | Dust. |
| Ethanol (CAS 64-17-5) | TWA | 1910 mg/m ³ 1000 ppm | |
| Formaldehyde (CAS 50-00-0) | STEL | 0,37 mg/m ³ 0,3 ppm | |
| m-Cresol (CAS 108-39-4) | TWA | 22 mg/m ³ 5 ppm | |
| p-Cresol (CAS 106-44-5) | TWA | 22 mg/m ³ 5 ppm | |

Sweden. Occupational Exposure Limit Values

| Components | Type | Value | Form |
|---------------------------------------|---------|---|------------------|
| Aluminium oxide (CAS 1344-28-1) | TWA | 5 mg/m ³ | Total dust. |
| Carbon fiber (CAS 7440-44-0) | TWA | 2 mg/m ³ 0,2 fibers/mL | Respirable dust. |
| Ethanol (CAS 64-17-5) | STEL | 5 mg/m ³ 1900 mg/m ³ 1000 ppm | Total dust. |
| Formaldehyde (CAS 50-00-0) | TWA | 1000 mg/m ³ 500 ppm | |
| Graphite (CAS 7782-42-5) | Ceiling | 0,74 mg/m ³ 0,6 ppm | |
| Hexamethylenetetramine (CAS 100-97-0) | TWA | 0,37 mg/m ³ 0,3 ppm | |
| m-Cresol (CAS 108-39-4) | TWA | 0,2 fibers/mL 5 mg/m ³ | Total dust. |
| p-Cresol (CAS 106-44-5) | STEL | 5 mg/m ³ | |
| | TWA | 3 mg/m ³ 9 mg/m ³ 2 ppm | |
| | TWA | 4,5 mg/m ³ 1 ppm | |
| | STEL | 9 mg/m ³ 2 ppm | |
| | TWA | 4,5 mg/m ³ 1 ppm | |

Switzerland. SUVA Grenzwerte am Arbeitsplatz

| Components | Type | Value | Form |
|--------------------------------------|------|----------------------|---------------------------|
| Aluminium hydroxide (CAS 21645-51-2) | TWA | 3 mg/m ³ | Respirable dust. |
| Aluminium oxide (CAS 1344-28-1) | STEL | 24 mg/m ³ | Fume and respirable dust. |

Switzerland. SUVA Grenzwerte am Arbeitsplatz

| Components | Type | Value | Form |
|------------------------------|------|---|---|
| | TWA | 3 mg/m ³ 3 mg/m ³ | Respirable dust. Fume and respirable dust. |
| Carbon fiber (CAS 7440-44-0) | TWA | 5 mg/m ³ | Inhalable dust. |
| Ethanol (CAS 64-17-5) | STEL | 2,5 mg/m ³ 1920 mg/m ³ | Respirable dust. |
| | TWA | 1000 ppm 960 mg/m ³ | |
| Formaldehyde (CAS 50-00-0) | STEL | 500 ppm 0,74 mg/m ³ | |
| | TWA | 0,6 ppm 0,37 mg/m ³ | |
| Graphite (CAS 7782-42-5) | TWA | 0,3 ppm 5 mg/m ³ | Inhalable dust. |
| m-Cresol (CAS 108-39-4) | STEL | 2,5 mg/m ³ 22 mg/m ³ | Respirable dust. |
| | TWA | 5 ppm 22 mg/m ³ | |
| p-Cresol (CAS 106-44-5) | STEL | 5 ppm 22 mg/m ³ | |
| | TWA | 5 ppm 22 mg/m ³ | |

UK. EH40 Workplace Exposure Limits (WELs)

| Components | Type | Value | Form |
|---------------------------------|------|--|-------------------------------------|
| Aluminium oxide (CAS 1344-28-1) | TWA | 4 mg/m ³ | Respirable dust. |
| Carbon fiber (CAS 7440-44-0) | TWA | 10 mg/m ³ 4 mg/m ³ | Inhalable dust. Respirable dust. |
| Ethanol (CAS 64-17-5) | TWA | 10 mg/m ³ 1920 mg/m ³ | Inhalable dust. |
| | | 1000 ppm | |
| Formaldehyde (CAS 50-00-0) | STEL | 2,5 mg/m ³ | |
| | TWA | 2 ppm 2,5 mg/m ³ | |
| | | 2 ppm | |

United Kingdom

| Components | Type | Value | Form |
|--------------------------|------|---|-------------------------------------|
| Graphite (CAS 7782-42-5) | TWA | 4 mg/m ³ 10 mg/m ³ | Respirable dust. Inhalable dust. |

EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU

| Components | Type | Value |
|-------------------------|------|-------------------------------|
| m-Cresol (CAS 108-39-4) | TWA | 22 mg/m ³ 5 ppm |
| p-Cresol (CAS 106-44-5) | TWA | 22 mg/m ³ 5 ppm |

Biological limit values

Germany. TRGS 903, BAT List (Biological Limit Values)

| Components | Value | Determinant | Specimen | Sampling time |
|--------------------------------------|----------------------|-------------|----------|---------------|
| Aluminium hydroxide (CAS 21645-51-2) | 200 µg/l | Aluminium | Urine | * |
| | 200 micrograms/liter | Aluminium | Urine | * |

Germany. TRGS 903, BAT List (Biological Limit Values)

| Components | Value | Determinant | Specimen | Sampling time |
|---------------------------------|----------------------|-------------|----------|---------------|
| Aluminium oxide (CAS 1344-28-1) | 200 micrograms/liter | Aluminium | Urine | * |

* - For sampling details, please see the source document.

Hungary. Chemical Safety at Workplace Ordinance Joint Decree No. 25/2000 (Annex 2): Permissible limit values of biological exposure (effect) indices

| Components | Value | Determinant | Specimen | Sampling time |
|----------------------------|-------|---|--|---------------|
| Ethanol (CAS 64-17-5) | 25 % | red blood cell or total blood acetylcholinest erase activity (EC. 3.1.1.7.) | Reduction from individual baseline activity in red blood cells | * |
| Formaldehyde (CAS 50-00-0) | 25 % | red blood cell or total blood acetylcholinest erase activity (EC. 3.1.1.7.) | Reduction from individual baseline activity in red blood cells | * |
| m-Cresol (CAS 108-39-4) | 25 % | red blood cell or total blood acetylcholinest erase activity (EC. 3.1.1.7.) | Reduction from individual baseline activity in red blood cells | * |
| p-Cresol (CAS 106-44-5) | 25 % | red blood cell or total blood acetylcholinest erase activity (EC. 3.1.1.7.) | Reduction from individual baseline activity in red blood cells | * |

* - For sampling details, please see the source document.

Recommended monitoring procedures Follow standard monitoring procedures.

Derived no-effect level (DNEL)

| Components | Type | Route | Value | Form |
|--------------------------------------|---------|------------|---------------|----------------------------------|
| Aluminium hydroxide (CAS 21645-51-2) | Workers | Inhalation | 3,59 mg/m3 | Long term exposure local effects |
| Aluminium oxide (CAS 1344-28-1) | Workers | Inhalation | 15,63 mg/m3 | Long term exposure local effects |
| Ethanol (CAS 64-17-5) | Workers | Dermal | 343 mg/kg/day | Long term Systemic effects |
| | | Inhalation | 950 mg/m3 | Long term Systemic effects |
| | | Inhalation | 1900 mg/m3 | Acute Local effects |
| Graphite (CAS 7782-42-5) | Workers | Inhalation | 1,2 mg/m3 | Long term exposure local effects |
| | | Dermal | 8,8 mg/kg/day | Long term Systemic effects |
| | | | 229 mg/kg/day | Acute Systemic effects |
| m-Cresol (CAS 108-39-4) | Workers | Inhalation | 31 mg/m3 | Long term Systemic effects |
| | | Inhalation | 1400 mg/m3 | Acute Systemic effects |
| | | Inhalation | 343 mg/m3 | Acute Systemic effects |
| | | Inhalation | 3,5 mg/m3 | Long term Systemic effects |
| | | Inhalation | 0,9 mg/m3 | Acute Local effects |
| p-Cresol (CAS 106-44-5) | Workers | Inhalation | 0,9 mg/m3 | Long term Local effects |
| | | Inhalation | 3,5 mg/m3 | Long term Systemic effects |
| | | | | |

| Components | Type | Route | Value | Form |
|------------|------|------------|-----------------------|----------------------------------|
| | | Inhalation | 233 mg/m ³ | Acute Systemic effects |
| | | Inhalation | 0,9 mg/m ³ | Acute Local effects |
| | | Inhalation | 0,9 mg/m ³ | Long term exposure local effects |

Predicted no effect concentrations (PNECs)

| Components | Type | Route | Value | Form |
|---------------------------------------|------------------------------|----------------|-------------|------|
| Aluminium hydroxide (CAS 21645-51-2) | Aqua (freshwater) | Not applicable | 74,9 µg/l | |
| | STP | Not applicable | 20 mg/l | |
| Aluminium oxide (CAS 1344-28-1) | Aqua (freshwater) | Not applicable | 74,9 µg/l | |
| | Sewage Treatment Plant | Not applicable | 20 mg/l | |
| Ethanol (CAS 64-17-5) | Aqua (freshwater) | Not applicable | 0,96 mg/l | |
| | Aqua (intermittent releases) | Not applicable | 2,75 mg/l | |
| | Aqua (marine water) | Not applicable | 0,79 mg/l | |
| | Oral | Not applicable | 0,72 g/kg | |
| | Sediment (freshwater) | Not applicable | 3,6 mg/kg | |
| | Sewage Treatment Plant | Not applicable | 580 mg/l | |
| Hexamethylenetetramine (CAS 100-97-0) | Soil | Not applicable | 0,63 mg/kg | |
| | Aqua (freshwater) | Not applicable | 3 mg/l | |
| | Aqua (intermittent releases) | Not applicable | 30 mg/l | |
| | Aqua (marine water) | Not applicable | 0,5 mg/l | |
| | Oral | Not applicable | 0,05 g/kg | |
| | Sediment (freshwater) | Not applicable | 11 mg/kg | |
| | Sediment (marine water) | Not applicable | 1,84 mg/kg | |
| | Sewage Treatment Plant | Not applicable | 100 mg/l | |
| m-Cresol (CAS 108-39-4) | Soil | Not applicable | 0,58 mg/kg | |
| | Aqua (freshwater) | Not applicable | 0,1 mg/l | |
| | Aqua (intermittent releases) | Not applicable | 0,076 mg/l | |
| | Aqua (marine water) | Not applicable | 0,01 mg/l | |
| | Sediment (freshwater) | Not applicable | 0,154 mg/kg | |
| | Sewage Treatment Plant | Not applicable | 1,14 mg/l | |
| p-Cresol (CAS 106-44-5) | Soil | Not applicable | 0,073 mg/kg | |
| | Aqua (freshwater) | Not applicable | 0,03 mg/l | |
| | Aqua (intermittent releases) | Not applicable | 0,044 mg/l | |
| | Aqua (marine water) | Not applicable | 0,003 mg/l | |
| | Sediment (freshwater) | Not applicable | 0,055 mg/kg | |
| | Sewage Treatment Plant | Not applicable | 1,65 mg/l | |
| | Soil | Not applicable | 0,029 mg/kg | |

8.2. Exposure controls

Appropriate engineering controls

Provide adequate ventilation. Observe occupational exposure limits and minimise the risk of exposure. An eye wash and safety shower must be available in the immediate work area.

Individual protection measures, such as personal protective equipment

General information

Personal protective equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

Eye/face protection

Wear safety glasses with side shields (or goggles) and a face shield.

Skin protection

- Hand protection

Wear suitable gloves. Butyl rubber gloves are recommended. Be aware that the liquid may penetrate the gloves. Frequent change is advisable.

- Other

Wear appropriate clothing to prevent possibility of skin contact.

| | |
|--|---|
| Respiratory protection | In case of inadequate ventilation or risk of inhalation of vapours, use suitable respiratory equipment with combination filter (type A2/P2). |
| Thermal hazards | Wear appropriate thermal protective clothing, when necessary. |
| Hygiene measures | Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. |
| Environmental exposure controls | Environmental manager must be informed of all major releases. |

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|---|---|
| Appearance | Black pliable semi-solid with phenolic odor. |
| Physical state | Liquid. |
| Form | Pliable semi-solid. |
| Colour | Black. |
| Odour | Phenolic. |
| Odour threshold | 0,003 - 5 ppm (m-Cresol) |
| pH | Not applicable. |
| Melting point/freezing point | Not available. |
| Initial boiling point and boiling range | Not available. |
| Flash point | Not applicable. |
| Evaporation rate | Not applicable. |
| Flammability (solid, gas) | Not applicable. |
| Upper/lower flammability or explosive limits | |
| Flammability limit - lower (%) | Not available. |
| Flammability limit - upper (%) | Not available. |
| Vapour pressure | Not applicable. |
| Vapour density | Not applicable. |
| Relative density | Not available. |
| Solubility(ies) | Slightly. |
| Partition coefficient (n-octanol/water) | No data available. |
| Decomposition temperature | > 648,9 °C (> 1200 °F) When cured |
| Viscosity | Not applicable. |
| Explosive properties | Not available. |
| Oxidizing properties | Not available. |
| 9.2. Other information | No relevant additional information available. |

SECTION 10: Stability and reactivity

| | |
|---|--|
| 10.1. Reactivity | The product is non-reactive under normal conditions of use, storage and transport. |
| 10.2. Chemical stability | Material is stable under normal conditions. |
| 10.3. Possibility of hazardous reactions | Hazardous polymerisation does not occur. |
| 10.4. Conditions to avoid | Flames and sparks. Avoid static discharge and uncontrolled exposure to high temperatures. Contact with incompatible materials. |
| 10.5. Incompatible materials | Strong oxidizers, strong acids, and strong bases. Strong reducing agents. |
| 10.6. Hazardous decomposition products | Aluminum oxides. Carbon oxides. Formaldehyde. Silicon oxides. |

SECTION 11: Toxicological information

| | |
|---|--|
| General information | Occupational exposure to the substance or mixture may cause adverse effects. |
| Information on likely routes of exposure | |
| Ingestion | May cause discomfort if swallowed. |
| Inhalation | Harmful if inhaled. When cured: Elevated temperatures or mechanical action may form dust and fumes which may be irritating to the respiratory tract. |

| | |
|---------------------|---|
| Skin contact | Harmful in contact with skin. Causes skin irritation. May cause an allergic skin reaction. |
| Eye contact | May cause eye burns. Risk of serious damage to eyes. |
| Symptoms | Slightly corrosive. Prolonged contact may causes serious eye and tissue damage. Prolonged or repeated inhalation/ingestion may cause central nervous system, blood, lung, liver or kidney damage. |

11.1. Information on toxicological effects

Acute toxicity May cause discomfort if swallowed.

| Components | Species | Test results |
|----------------------------|---------|--------------------|
| Formaldehyde (CAS 50-00-0) | | |
| Acute | | |
| <i>Inhalation</i> | | |
| LC50 | Rat | 0,48 mg/l, 4 Hours |
| <i>Oral</i> | | |
| LD50 | Rat | 100 mg/kg |
| m-Cresol (CAS 108-39-4) | | |
| Acute | | |
| <i>Dermal</i> | | |
| LD50 | Rabbit | 620 mg/kg |
| <i>Oral</i> | | |
| LD50 | Rat | 242 mg/kg |
| p-Cresol (CAS 106-44-5) | | |
| Acute | | |
| <i>Dermal</i> | | |
| LD50 | Rabbit | 300 mg/kg |
| <i>Oral</i> | | |
| LD50 | Rat | 207 mg/kg |

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/irritation May cause eye burns. Risk of serious damage to eyes.

Respiratory sensitisation Not available.

Skin sensitisation May cause an allergic skin reaction.

Germ cell mutagenicity Contains a substance which may have a mutagenic effect.

Carcinogenicity Risk of cancer cannot be excluded with prolonged exposure. When cured: Prolonged breathing of high levels of crystalline silica can cause silicosis. Also, airborne crystalline silica is possibly carcinogenic to humans.

IARC Monographs. Overall Evaluation of Carcinogenicity

Formaldehyde (CAS 50-00-0) 1 Carcinogenic to humans.

Reproductive toxicity No data available.

Specific target organ toxicity - single exposure Not available.

Specific target organ toxicity - repeated exposure Not available.

Aspiration hazard Not available.

Mixture versus substance information Not available.

Other information Be aware that symptoms of lung oedema (shortness of breath) may develop up to 24 hours after exposure. When cured: Chronic lung disease (silicosis) and/or lung cancer may result from prolonged/repeated breathing of the dust of this material.

SECTION 12: Ecological information

12.1. Toxicity The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

| Components | Species | Test results |
|----------------------------|---------|--|
| Formaldehyde (CAS 50-00-0) | | |
| Aquatic | | |
| Crustacea | EC50 | Water flea (Daphnia pulex) 4,3 - 7,8 mg/l, 48 hours |
| Fish | LC50 | American eel (Anguilla rostrata) 0 - 197,79 mg/l, 96 hours |

| Components | Species | Test results |
|--|---|---|
| Hexamethylenetetramine (CAS 100-97-0) | | |
| Aquatic | | |
| Crustacea | EC50 | Water flea (Daphnia magna) 29868 - 43390 mg/l, 48 hours |
| Fish | LC50 | Bleak (Alburnus alburnus) > 10000 mg/l, 96 hours |
| m-Cresol (CAS 108-39-4) | | |
| Aquatic | | |
| Crustacea | EC50 | Scud (Gammarus fasciatus) 7 mg/l, 48 hours |
| Fish | LC50 | Rainbow trout, donaldson trout (Oncorhynchus mykiss) 8,9 mg/l, 96 hours |
| p-Cresol (CAS 106-44-5) | | |
| Aquatic | | |
| Crustacea | EC50 | Water flea (Daphnia magna) 7,7 mg/l, 48 hours |
| Fish | LC50 | Fish (Lepidocephalichthyes guntea) 6,15 - 7,96 mg/l, 96 hours |
| 12.2. Persistence and degradability | No data available. | |
| 12.3. Bioaccumulative potential | No data available. | |
| Partition coefficient n-octanol/water (log Kow) | No data available. | |
| Formaldehyde (CAS 50-00-0) | 0,35 | |
| p-Cresol (CAS 106-44-5) | 1,94 | |
| m-Cresol (CAS 108-39-4) | 1,96 | |
| Bioconcentration factor (BCF) | Not available. | |
| 12.4. Mobility in soil | Not available. | |
| Mobility in general | The product is insoluble or slightly soluble in water. The product contains volatile organic compounds (VOC) which will evaporate easily from all surfaces. | |
| 12.5. Results of PBT and vPvB assessment | Not a PBT or vPvB substance or mixture. | |
| 12.6. Other adverse effects | The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. The product contains volatile organic compounds which have a photochemical ozone creation potential. | |

SECTION 13: Disposal considerations

13.1. Waste treatment methods

| | |
|-------------------------------------|--|
| Residual waste | Dispose of in accordance with local regulations. |
| Contaminated packaging | Since emptied containers may retain product residue, follow label warnings even after container is emptied. |
| EU waste code | 08 04 09* |
| Disposal methods/information | Disposal recommendations are based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal. |

SECTION 14: Transport information

ADR

The product is not covered by international regulation on the transport of dangerous goods.

RID

The product is not covered by international regulation on the transport of dangerous goods.

ADN

The product is not covered by international regulation on the transport of dangerous goods.

IATA

The product is not covered by international regulation on the transport of dangerous goods.

IMDG

The product is not covered by international regulation on the transport of dangerous goods.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code This substance/mixture is not intended to be transported in bulk.

SECTION 15: Regulatory information

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

EU regulations

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I

Not listed.

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex II

Not listed.

Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 1 as amended

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 2 as amended

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 3 as amended

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex V as amended

Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry

Not listed.

Regulation (EC) No. 1907/2006, REACH Article 59(1) Candidate List as currently published by ECHA

Not listed.

Authorisations

Regulation (EC) No. 143/2011 Annex XIV Substances Subject to Authorisation

Not listed.

Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended

Formaldehyde (CAS 50-00-0)

Hexamethylenetetramine (CAS 100-97-0)

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work

Not regulated.

Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breastfeeding

Formaldehyde (CAS 50-00-0)

Other EU regulations

Directive 96/82/EC (Seveso II) on the control of major-accident hazards involving dangerous substances

Not regulated.

Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Formaldehyde (CAS 50-00-0)

Hexamethylenetetramine (CAS 100-97-0)

m-Cresol (CAS 108-39-4)

p-Cresol (CAS 106-44-5)

Directive 94/33/EC on the protection of young people at work

Formaldehyde (CAS 50-00-0)

Hexamethylenetetramine (CAS 100-97-0)

m-Cresol (CAS 108-39-4)

p-Cresol (CAS 106-44-5)

Other regulations

The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended and respective national laws implementing EC directives. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006 as amended.

National regulations

Young people under 18 years old are not allow to work with this product according to the EU Directive 94/33/EC on the protection of young people at work. Follow national regulation for work with chemical agents.

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

List of abbreviations

DNEL: Derived No-Effect Level.

PNEC: Predicted No-Effect Concentration. PBT:

Persistent, bioaccumulative and toxic. vPvB:

Very Persistent and very Bioaccumulative.

References

Not available.

Information on evaluation method leading to the classification of mixture

The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

Full text of any statements or R-phrases and H-statements under Sections 2 to 15

R11 Highly flammable.
R21/22 Harmful in contact with skin and if swallowed.
R23/24/25 Toxic by inhalation, in contact with skin and if swallowed.
R24/25 Toxic in contact with skin and if swallowed.
R34 Causes burns.
R36/38 Irritating to eyes and skin.
R39/23/24/25 Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.
R40 Limited evidence of a carcinogenic effect.
R43 May cause sensitisation by skin contact.
R48/20/21/22 Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.
R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R68 Possible risk of irreversible effects.
H225 - Highly flammable liquid and vapour.
H228 - Flammable solid.
H301 - Toxic if swallowed.
H311 - Toxic in contact with skin.
H314 - Causes severe skin burns and eye damage.
H317 - May cause an allergic skin reaction.
H318 - Causes serious eye damage.
H331 - Toxic if inhaled.
H335 - May cause respiratory irritation.
H341 - Suspected of causing genetic defects.
H351 - Suspected of causing cancer.
H370 - Causes damage to organs.
H373 - May cause damage to organs through prolonged or repeated exposure.
H411 - Toxic to aquatic life with long lasting effects.

Training information

Follow training instructions when handling this material.

Disclaimer

The information in the sheet was written based on the best knowledge and experience currently available.