

**SAFETY DATA SHEET****SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

|   |                 |
|---|-----------------|
| <b>Trade name or designation of the mixture</b> | SEALANT 18X-FG  |
| <b>Registration number</b>                      | -               |
| <b>Synonyms</b>                                 | None.           |
| <b>Product code</b>                             | 800-0044        |
| <b>Issue date</b>                               | 18-January-2013 |
| <b>Version number</b>                           | 00              |
| <b>Revision date</b>                            | 18-January-2013 |
| <b>Supersedes date</b>                          | -               |

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

|                             |                         |
|-----------------------------|-------------------------|
| <b>Identified uses</b>      | Industrial Leak Sealant |
| <b>Uses advised against</b> | None known.             |

**1.3. Details of the supplier of the safety data sheet****Supplier**

|                       |   |
|-----------------------|---|
| <b>Company name</b>   | Team Industrial Services, Inc.                        |
| <b>Address</b>        | Postbus 37 4380 AA Vlissingen 3237<br>The Netherlands |
| <b>Telephone</b>      | +31 (0) 118 48 58 00<br>Fax +31 (0) 118 48 58 86      |
| <b>e-mail</b>         | Not available.  |
| <b>Contact person</b> | 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** Repr. Cat. 3;R63, Xn;R48/20, R52/53

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.   |
| Reproductive toxicity                              | Category 2                          | H361d - Suspected of damaging the unborn child.  |
| Specific target organ toxicity - repeated exposure | Category 2 (Central nervous system) | H373 - May cause damage to organs (Central nervous system) through prolonged or repeated exposure. |

**Environmental hazards**

|  |            |   |
|--|------------|---|
| Hazardous to the aquatic environment, long-term aquatic hazard | Category 3 | H412 - Harmful to aquatic life with long lasting effects. |
|--|------------|---|

**Hazard summary**

|                              |  |
|------------------------------|--|
| <b>Physical hazards</b>      | Not classified for physical hazards.   |
| <b>Health hazards</b>        | Harmful: danger of serious damage to health by prolonged exposure through inhalation. Possible risk of harm to the unborn child. Occupational exposure to the substance or mixture may cause adverse health effects. |
| <b>Environmental hazards</b> | Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  |

**Specific hazards** May cause skin and eye irritation. Prolonged or repeated contact may dry skin and cause dermatitis. Possible risk of harm to the unborn child. When cured: Inhalation of high concentrations of quartz dust can lead to the lung disease known as silicosis, with cough and shortness of breath.

**Main symptoms** Irritation of eyes and mucous membranes. Symptoms include itching, burning, redness and tearing. Skin irritation. Shortness of breath.

## 2.2. Label elements

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

**Hazard pictograms**



**Signal word** Warning

**Hazard statements**  
 H315 - Causes skin irritation.  
 H361d - Suspected of damaging the unborn child.  
 H373 - May cause damage to organs (Central nervous system) through prolonged or repeated exposure.  
 H412 - Harmful to aquatic life with long lasting effects.

### Precautionary statements

**Prevention**  
 P201 - Obtain special instructions before use.  
 P202 - Do not handle until all safety precautions have been read and understood.  
 P264 - Wash thoroughly after handling.  
 P280 - Wear protective gloves.  
 P273 - Avoid release to the environment.

**Response**  
 P308 + P313 - IF exposed or concerned: Get medical advice/attention.  
 P302 + P352 - IF ON SKIN: Wash with plenty of soap and water.  
 P332 + P313 - If skin irritation occurs: Get medical advice/attention.

**Storage** P405 - Store locked up.

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

**Supplemental label information** Not applicable.

**2.3. Other hazards** Not assigned.

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

#### General information

| Chemical name          | %  | CAS-No. / EC No.       | REACH Registration No. | INDEX No.    | Notes |
|------------------------|--|------------------------|------------------------|--------------|-------|
| Polymer                | 50-80  | 25034-71-3             | -                      | -            |       |
| <b>Classification:</b> | <b>DSD:</b> -  |                        |                        |              |       |
|                        | <b>CLP:</b> -  |                        |                        |              |       |
| Graphite               | 25-50  | 7782-42-5<br>231-955-3 | -                      | -            |       |
| <b>Classification:</b> | <b>DSD:</b> -  |                        |                        |              |       |
|                        | <b>CLP:</b> -  |                        |                        |              |       |
| Dicumyl peroxide       | 5-10   | 80-43-3<br>201-279-3   | -                      | 617-006-00-X |       |
| <b>Classification:</b> | <b>DSD:</b> O;R7, Xi;R36/38, N;R51/53  |                        |                        |              |       |
|                        | <b>CLP:</b> Org. Perox. F;H242, Skin Irrit. 2;H315, Eye Irrit. 2;H319, Aquatic Chronic 2;H411                      |                        |                        |              |       |
| Toluene                | 5-10   | 108-88-3<br>203-625-9  | -                      | 601-021-00-3 | #     |
| <b>Classification:</b> | <b>DSD:</b> F;R11, Repr. Cat. 3;R63, Xn;R65-48/20, Xi;R38, R67   |                        |                        |              |       |
|                        | <b>CLP:</b> Flam. Liq. 2;H225, Asp. Tox. 1;H304, Skin Irrit. 2;H315, STOT SE 3;H336, Repr. 2;H361d, STOT RE 2;H373 |                        |                        |              |       |

| Chemical name          | %           | CAS-No. / EC No.       | REACH Registration No. | INDEX No. | Notes |
|------------------------|-------------|------------------------|------------------------|-----------|-------|
| Carbon fiber           | 1-5         | 7440-44-0<br>231-153-3 | -                      | -         |       |
| <b>Classification:</b> | <b>DSD:</b> | -                      |                        |           |       |
|                        | <b>CLP:</b> | -                      |                        |           |       |

DSD: Directive 67/548/EEC.

CLP: Regulation No. 1272/2008.

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

**Composition comments** All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume. The full text for all R- and H-phrases is displayed in section 16.

## SECTION 4: First aid measures

**General information** Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

### 4.1. Description of first aid measures

**Inhalation** Move to fresh air. Get medical attention if any discomfort occurs.

**Skin contact** Remove contaminated clothing and shoes. Flush thoroughly with water for at least 15 minutes. If irritation occurs, get medical assistance.

**Eye contact** Flush thoroughly with water for at least 15 minutes. Get medical attention if irritation develops or persists.

**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** Skin irritation. Irritation of eyes and mucous membranes. Symptoms include itching, burning, redness and tearing. Shortness of breath.

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

## SECTION 5: Firefighting measures

**General fire hazards** The product is combustible, and heating may generate vapours which may form explosive vapour/air mixtures.

### 5.1. Extinguishing media

**Suitable extinguishing media** Extinguish with foam, carbon dioxide, dry powder or water fog.

**Unsuitable extinguishing media** No restrictions known.

**5.2. Special hazards arising from the substance or mixture** Solvent vapours may form explosive mixtures with air. By heating and fire, corrosive vapours/gases may be formed. Carbon oxides. Silicon oxides.

### 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** In the event of fire, cool tanks with water spray. Move containers from fire area if you can do it without risk.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

**For non-emergency personnel** Ventilate closed spaces before entering. Avoid inhalation of vapours and contact with skin and eyes. Wear appropriate protective equipment and clothing during clean-up. See Section 8 for personal protective equipment.

**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.

**6.3. Methods and material for containment and cleaning up** Stop the flow of material, if this is without risk. Prevent entry into waterways, sewers, basements or confined areas. Eliminate sources of ignition. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After removal flush contaminated area thoroughly with water. This material and its container must be disposed of as hazardous waste.

#### 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

#### 7.1. Precautions for safe handling

Pregnant or breastfeeding women must not handle this product. 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. Ground container and transfer equipment to eliminate static electric sparks. Use non-sparking tools and explosion-proof equipment. Use only with adequate ventilation. Wear approved safety goggles. Wear protective gloves and appropriate clothing to prevent skin contact. Avoid generation and spreading of dust. Observe good industrial hygiene practices.

#### 7.2. Conditions for safe storage, including any incompatibilities

Store in tightly closed original container in a dry, cool and 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             |
|------------------------------|------|----------------------------------|------------------|
| Carbon fiber (CAS 7440-44-0) | MAK  | 5 mg/m <sup>3</sup>              | Respirable dust. |
| Graphite (CAS 7782-42-5)     | STEL | 10 mg/m <sup>3</sup>             | Respirable dust. |
|                              | MAK  | 5 mg/m <sup>3</sup>              | Respirable dust. |
| Toluene (CAS 108-88-3)       | STEL | 10 mg/m <sup>3</sup>             | Respirable dust. |
|                              | MAK  | 190 mg/m <sup>3</sup><br>50 ppm  |                  |
|                              | STEL | 380 mg/m <sup>3</sup><br>100 ppm |                  |

###### Belgium. Exposure Limit Values.

| Components                   | Type | Value                            | Form                 |
|------------------------------|------|----------------------------------|----------------------|
| Carbon fiber (CAS 7440-44-0) | TWA  | 2 mg/m <sup>3</sup>              | Respirable fraction. |
| Graphite (CAS 7782-42-5)     | TWA  | 2 mg/m <sup>3</sup>              | Respirable fraction. |
| Toluene (CAS 108-88-3)       | STEL | 384 mg/m <sup>3</sup><br>100 ppm |                      |
|                              | TWA  | 77 mg/m <sup>3</sup><br>20 ppm   |                      |

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

| Components                   | Type | Value                 | Form                |
|------------------------------|------|-----------------------|---------------------|
| Carbon fiber (CAS 7440-44-0) | TWA  | 5 mg/m <sup>3</sup>   | Inhalable fraction. |
| Graphite (CAS 7782-42-5)     | TWA  | 5 mg/m <sup>3</sup>   | Inhalable fraction. |
| Toluene (CAS 108-88-3)       | STEL | 384 mg/m <sup>3</sup> |                     |
|                              | TWA  | 192 mg/m <sup>3</sup> |                     |

###### 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 <sup>3</sup>             |
| Graphite (CAS 7782-42-5)     | TWA  | 10 mg/m <sup>3</sup>             |
| Toluene (CAS 108-88-3)       | TWA  | 375 mg/m <sup>3</sup><br>100 ppm |

###### Czech Republic. OELs. Government Decree 361

| Components                   | Type | Value                | Form             |
|------------------------------|------|----------------------|------------------|
| Carbon fiber (CAS 7440-44-0) | TWA  | 10 mg/m <sup>3</sup> | Respirable dust. |
| Graphite (CAS 7782-42-5)     |      | 10 mg/m <sup>3</sup> | Total dust.      |
|                              |      | 10 mg/m <sup>3</sup> | Respirable dust. |
|                              |      | 10 mg/m <sup>3</sup> | Total dust.      |

**Czech Republic. OELs. Government Decree 361**

| Components             | Type    | Value     | Form |
|------------------------|---------|-----------|------|
| Toluene (CAS 108-88-3) | Ceiling | 500 mg/m3 |      |
|                        | TWA     | 200 mg/m3 |      |

**Denmark. Exposure Limit Values**

| Components                   | Type | Value              | Form        |
|------------------------------|------|--------------------|-------------|
| Carbon fiber (CAS 7440-44-0) | TLV  | 2,5 mg/m3          | Respirable. |
| Graphite (CAS 7782-42-5)     | TLV  | 2,5 mg/m3          | Respirable. |
| Toluene (CAS 108-88-3)       | TLV  | 94 mg/m3<br>25 ppm |             |

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

| Components                   | Type | Value               | Form  |
|------------------------------|------|---------------------|-------|
| Carbon fiber (CAS 7440-44-0) | TWA  | 3 mg/m3             | Dust. |
| Graphite (CAS 7782-42-5)     | TWA  | 5 mg/m3             | Dust. |
| Toluene (CAS 108-88-3)       | STEL | 384 mg/m3           |       |
|                              |      | 100 ppm             |       |
|                              | TWA  | 192 mg/m3<br>50 ppm |       |

**Finland. Workplace Exposure Limits**

| Components                   | Type | Value              | Form |
|------------------------------|------|--------------------|------|
| Carbon fiber (CAS 7440-44-0) | TWA  | 2 mg/m3            |      |
| Graphite (CAS 7782-42-5)     | TWA  | 2 mg/m3            |      |
| Toluene (CAS 108-88-3)       | STEL | 380 mg/m3          |      |
|                              |      | 100 ppm            |      |
|                              | TWA  | 81 mg/m3<br>25 ppm |      |

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

| Components                   | Type | Value                | Form                 |
|------------------------------|------|----------------------|----------------------|
| Carbon fiber (CAS 7440-44-0) | VME  | 2 mg/m3              | Respirable fraction. |
| Graphite (CAS 7782-42-5)     | VME  | 2 mg/m3              | Respirable fraction. |
| Toluene (CAS 108-88-3)       | VLE  | 384 mg/m3            |                      |
|                              |      | 100 ppm              |                      |
|                              | VME  | 76,8 mg/m3<br>20 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                 |
|------------------------------|------|-----------|----------------------|
| Carbon fiber (CAS 7440-44-0) | TWA  | 4 mg/m3   | Inhalable fraction.  |
|                              |      | 1,5 mg/m3 | Respirable fraction. |
| Graphite (CAS 7782-42-5)     | TWA  | 4 mg/m3   | Inhalable fraction.  |
|                              |      | 1,5 mg/m3 | Respirable fraction. |
| Toluene (CAS 108-88-3)       | TWA  | 190 mg/m3 |                      |
|                              |      | 50 ppm    |                      |

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

| Components                   | Type | Value               | Form                 |
|------------------------------|------|---------------------|----------------------|
| Carbon fiber (CAS 7440-44-0) | AGW  | 3 mg/m3             | Respirable fraction. |
| Graphite (CAS 7782-42-5)     | AGW  | 10 mg/m3            | Inhalable fraction.  |
|                              |      | 3 mg/m3             | Respirable fraction. |
| Toluene (CAS 108-88-3)       | AGW  | 10 mg/m3            | Inhalable fraction.  |
|                              |      | 190 mg/m3<br>50 ppm |                      |

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

| Components                   | Type | Value                 | Form        |
|------------------------------|------|-----------------------|-------------|
| Carbon fiber (CAS 7440-44-0) | TWA  | 5 mg/m <sup>3</sup>   | Respirable. |
|                              |      | 10 mg/m <sup>3</sup>  | Inhalable   |
| Graphite (CAS 7782-42-5)     | TWA  | 5 mg/m <sup>3</sup>   | Respirable. |
|                              |      | 10 mg/m <sup>3</sup>  | Inhalable   |
| Toluene (CAS 108-88-3)       | STEL | 560 mg/m <sup>3</sup> |             |
|                              |      | 150 ppm               |             |
|                              |      | 375 mg/m <sup>3</sup> |             |
|                              | TWA  | 100 ppm               |             |

**Hungary. OELs. Joint Decree on Chemical Safety of Workplaces**

| Components             | Type | Value                 |
|------------------------|------|-----------------------|
| Toluene (CAS 108-88-3) | STEL | 380 mg/m <sup>3</sup> |
|                        | TWA  | 190 mg/m <sup>3</sup> |

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

| Components                   | Type | Value                 | Form             |
|------------------------------|------|-----------------------|------------------|
| Carbon fiber (CAS 7440-44-0) | TWA  | 5 mg/m <sup>3</sup>   | Total dust.      |
|                              |      | 2,5 mg/m <sup>3</sup> | Respirable dust. |
| Graphite (CAS 7782-42-5)     | TWA  | 5 mg/m <sup>3</sup>   | Total dust.      |
|                              |      | 2,5 mg/m <sup>3</sup> | Respirable dust. |
|                              |      | 188 mg/m <sup>3</sup> |                  |
| Toluene (CAS 108-88-3)       | STEL | 50 ppm                |                  |
|                              |      | 94 mg/m <sup>3</sup>  |                  |
|                              |      | 25 ppm                |                  |

**Ireland. Occupational Exposure Limits**

| Components                   | Type | Value                 | Form                  |
|------------------------------|------|-----------------------|-----------------------|
| Carbon fiber (CAS 7440-44-0) | TWA  | 4 mg/m <sup>3</sup>   | Respirable dust.      |
|                              |      | 10 mg/m <sup>3</sup>  | Total inhalable dust. |
| Graphite (CAS 7782-42-5)     | TWA  | 4 mg/m <sup>3</sup>   | Respirable dust.      |
|                              |      | 10 mg/m <sup>3</sup>  | Total inhalable dust. |
|                              |      | 384 mg/m <sup>3</sup> |                       |
| Toluene (CAS 108-88-3)       | STEL | 100 ppm               |                       |
|                              |      | 192 mg/m <sup>3</sup> |                       |
|                              |      | 50 ppm                |                       |

**Italy. OELs**

| Components                   | Type | Value                 | Form                  |
|------------------------------|------|-----------------------|-----------------------|
| Carbon fiber (CAS 7440-44-0) | TWA  | 2 mg/m <sup>3</sup>   | Respirable fraction.  |
|                              |      | 10 mg/m <sup>3</sup>  | Total inhalable dust. |
| Graphite (CAS 7782-42-5)     | TWA  | 4 mg/m <sup>3</sup>   | Respirable dust.      |
|                              |      | 10 mg/m <sup>3</sup>  | Total inhalable dust. |
| Toluene (CAS 108-88-3)       | TWA  | 192 mg/m <sup>3</sup> |                       |
|                              |      | 50 ppm                |                       |

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

| Components                   | Type | Value                 | Form                  |
|------------------------------|------|-----------------------|-----------------------|
| Carbon fiber (CAS 7440-44-0) | TWA  | 2 mg/m <sup>3</sup>   | Dust.                 |
|                              |      | 10 mg/m <sup>3</sup>  | Total inhalable dust. |
| Graphite (CAS 7782-42-5)     | TWA  | 2 mg/m <sup>3</sup>   | Dust.                 |
|                              |      | 150 mg/m <sup>3</sup> |                       |
| Toluene (CAS 108-88-3)       | STEL | 40 ppm                |                       |
|                              |      | 50 mg/m <sup>3</sup>  |                       |
|                              |      | 14 ppm                |                       |

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

| Components                   | Type | Value                | Form                  |
|------------------------------|------|----------------------|-----------------------|
| Carbon fiber (CAS 7440-44-0) | TWA  | 3 mg/m <sup>3</sup>  | Dust.                 |
|                              |      | 10 mg/m <sup>3</sup> | Total inhalable dust. |
| Graphite (CAS 7782-42-5)     | TWA  | 3 mg/m <sup>3</sup>  | Dust.                 |

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

| Components             | Type | Value                                      | Form |
|------------------------|------|--|------|
| Toluene (CAS 108-88-3) | STEL | 384 mg/m <sup>3</sup>                      |      |
|                        | TWA  | 100 ppm<br>192 mg/m <sup>3</sup><br>50 ppm |      |

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

| Components             | Type | Value                                      |
|------------------------|------|--|
| Toluene (CAS 108-88-3) | STEL | 384 mg/m <sup>3</sup>                      |
|                        | TWA  | 100 ppm<br>192 mg/m <sup>3</sup><br>50 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                                      |
|------------------------|------|--|
| Toluene (CAS 108-88-3) | STEL | 384 mg/m <sup>3</sup>                      |
|                        | TWA  | 100 ppm<br>192 mg/m <sup>3</sup><br>50 ppm |

**Netherlands. OELs (binding)**

| Components             | Type | Value                 |
|------------------------|------|-----------------------|
| Toluene (CAS 108-88-3) | STEL | 384 mg/m <sup>3</sup> |
|                        | TWA  | 150 mg/m <sup>3</sup> |

**Norway. Administrative Norms for Contaminants in the Workplace**

| Components                   | Type | Value                | Form             |
|------------------------------|------|----------------------|------------------|
| Carbon fiber (CAS 7440-44-0) | TLV  | 2 mg/m <sup>3</sup>  | Respirable dust. |
|                              |      | 10 mg/m <sup>3</sup> | Total dust.      |
| Graphite (CAS 7782-42-5)     | TLV  | 2 mg/m <sup>3</sup>  | Respirable dust. |
|                              |      | 10 mg/m <sup>3</sup> | Total dust.      |
| Toluene (CAS 108-88-3)       | TLV  | 94 mg/m <sup>3</sup> |                  |
|                              |      | 25 ppm               |                  |

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

| Components                   | Type | Value                 | Form             |
|------------------------------|------|-----------------------|------------------|
| Carbon fiber (CAS 7440-44-0) | TWA  | 4 mg/m <sup>3</sup>   | Total dust.      |
|                              |      | 1 mg/m <sup>3</sup>   | Respirable dust. |
| Graphite (CAS 7782-42-5)     | TWA  | 4 mg/m <sup>3</sup>   | Total dust.      |
|                              |      | 1 mg/m <sup>3</sup>   | Respirable dust. |
| Toluene (CAS 108-88-3)       | STEL | 200 mg/m <sup>3</sup> |                  |
|                              | TWA  | 100 mg/m <sup>3</sup> |                  |

**Portugal. OELs. Decree-Law n. 290/2001 (Journal of the Republic - 1 Series A, n.266)**

| Components             | Type | Value                                      |
|------------------------|------|--|
| Toluene (CAS 108-88-3) | STEL | 384 mg/m <sup>3</sup>                      |
|                        | TWA  | 100 ppm<br>192 mg/m <sup>3</sup><br>50 ppm |

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

| Components                   | Type | Value               | Form                 |
|------------------------------|------|---------------------|----------------------|
| Carbon fiber (CAS 7440-44-0) | TWA  | 2 mg/m <sup>3</sup> | Respirable fraction. |
| Graphite (CAS 7782-42-5)     | TWA  | 2 mg/m <sup>3</sup> | Respirable fraction. |

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

| Components             | Type | Value                 |
|------------------------|------|-----------------------|
| Toluene (CAS 108-88-3) | STEL | 384 mg/m <sup>3</sup> |
|                        |      | 100 ppm               |
|                        | TWA  | 192 mg/m <sup>3</sup> |
|                        |      | 50 ppm                |

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

| Components                   | Type | Value                 | Form                 |
|------------------------------|------|-----------------------|----------------------|
| Carbon fiber (CAS 7440-44-0) | TWA  | 2 mg/m <sup>3</sup>   | Respirable fraction. |
|                              |      | 10 mg/m <sup>3</sup>  | Total                |
| Graphite (CAS 7782-42-5)     | TWA  | 2 mg/m <sup>3</sup>   | Respirable fraction. |
|                              |      | 10 mg/m <sup>3</sup>  | Total                |
| Toluene (CAS 108-88-3)       | TWA  | 192 mg/m <sup>3</sup> |                      |
|                              |      | 50 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                 |
|------------------------|------|-----------------------|
| Toluene (CAS 108-88-3) | TWA  | 192 mg/m <sup>3</sup> |
|                        |      | 50 ppm                |

**Spain**

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

**Spain. Occupational Exposure Limits**

| Components                   | Type | Value                 | Form  |
|------------------------------|------|-----------------------|-------|
| Carbon fiber (CAS 7440-44-0) | TWA  | 2 mg/m <sup>3</sup>   | Dust. |
|                              |      |                       |       |
| Toluene (CAS 108-88-3)       | STEL | 384 mg/m <sup>3</sup> |       |
|                              |      | 100 ppm               |       |
|                              | TWA  | 192 mg/m <sup>3</sup> |       |
|                              |      | 50 ppm                |       |

**Sweden. Occupational Exposure Limit Values**

| Components                   | Type | Value                 | Form        |
|------------------------------|------|-----------------------|-------------|
| Carbon fiber (CAS 7440-44-0) | TWA  | 0,2 fibers/mL         |             |
|                              |      | 5 mg/m <sup>3</sup>   | Total dust. |
| Graphite (CAS 7782-42-5)     | TWA  | 0,2 fibers/mL         |             |
|                              |      | 5 mg/m <sup>3</sup>   | Total dust. |
| Toluene (CAS 108-88-3)       | STEL | 384 mg/m <sup>3</sup> |             |
|                              |      | 100 ppm               |             |
|                              | TWA  | 192 mg/m <sup>3</sup> |             |
|                              |      | 50 ppm                |             |

**Switzerland. SUVA Grenzwerte am Arbeitsplatz**

| Components                   | Type | Value                 | Form             |
|------------------------------|------|-----------------------|------------------|
| Carbon fiber (CAS 7440-44-0) | TWA  | 5 mg/m <sup>3</sup>   | Inhalable dust.  |
|                              |      | 2,5 mg/m <sup>3</sup> | Respirable dust. |
| Graphite (CAS 7782-42-5)     | TWA  | 5 mg/m <sup>3</sup>   | Inhalable dust.  |
|                              |      | 2,5 mg/m <sup>3</sup> | Respirable dust. |
|                              |      | 760 mg/m <sup>3</sup> |                  |
| Toluene (CAS 108-88-3)       | STEL | 200 ppm               |                  |
|                              |      | 190 mg/m <sup>3</sup> |                  |
|                              | TWA  | 50 ppm                |                  |



**UK. EH40 Workplace Exposure Limits (WELs)**

| Components                   | Type | Value                                      | Form             |
|------------------------------|------|--|------------------|
| Carbon fiber (CAS 7440-44-0) | TWA  | 4 mg/m <sup>3</sup>                        | Respirable dust. |
|                              |      | 10 mg/m <sup>3</sup>                       | Inhalable dust.  |
| Toluene (CAS 108-88-3)       | STEL | 384 mg/m <sup>3</sup>                      |                  |
|                              | TWA  | 100 ppm<br>191 mg/m <sup>3</sup><br>50 ppm |                  |

**United Kingdom**

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

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

| Components             | Type | Value                            |
|------------------------|------|----------------------------------|
| Toluene (CAS 108-88-3) | STEL | 384 mg/m <sup>3</sup><br>100 ppm |
|                        | TWA  | 192 mg/m <sup>3</sup><br>50 ppm  |

**Biological limit values****Finland. HTP-arvot, App 2., Biological Limit Values, (BRA/BGV) , Social Affairs and Ministry of Health**

| Components             | Value      | Determinant           | Specimen | Sampling time |
|------------------------|------------|-----------------------|----------|---------------|
| Toluene (CAS 108-88-3) | 500 nmol/l | Toluene concentration | Blood    | *             |

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

**France. Biological indicators of exposure (IBE) (National Institute for Research and Security (INRS, ND 2065)**

| Components             | Value     | Determinant      | Specimen            | Sampling time |
|------------------------|-----------|------------------|---------------------|---------------|
| Toluene (CAS 108-88-3) | 2500 mg/g | Acide hippurique | Creatinine in urine | *             |
|                        | 2500 mg/g | Acide hippurique | Creatinine in urine | *             |
|                        | 1 mg/l    | Toluène          | Venous blood        | *             |

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

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

| Components             | Value  | Determinant | Specimen | Sampling time |
|------------------------|--------|-------------|----------|---------------|
| Toluene (CAS 108-88-3) | 3 mg/l | o-Kresol    | Urine    | *             |
|                        | 1 mg/l | Toluol      | Blood    | *             |

\* - 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 |
|------------------------|--------|-------------|---------------------|---------------|
| Toluene (CAS 108-88-3) | 1 mg/g | o-crezol    | Creatinine in urine | *             |

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

**Spain. Biological Limit Values (VLBs), Occupational Exposure Limits for Chemical Agents, Table 4**

| Components             | Value     | Determinant                  | Specimen            | Sampling time |
|------------------------|-----------|------------------------------|---------------------|---------------|
| Toluene (CAS 108-88-3) | 1,6 g/g   | Ácido hipúrico               | Creatinine in urine | *             |
|                        | 0,5 mg/l  | o-cresol (Phenol, 2-methyl-) | Urine               | *             |
|                        | 0,05 mg/l | Tolueno                      | Blood               | *             |

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

## Switzerland. BAT-Werte (Biological Limit Values in the Workplace as per SUVA)

| Components             | Value                | Specimen            | Sampling time |
|------------------------|----------------------|---------------------|---------------|
| Toluene (CAS 108-88-3) | 2 g/g                | Creatinine in urine | *             |
|                        | 0,5 mg/l             | Urine               | *             |
|                        | 600 micrograms/liter | Blood               | *             |

\* - 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                                |
|--------------------------------|---------|------------|-----------------------|-------------------------------------|
| Dicumyl peroxide (CAS 80-43-3) | Workers | Dermal     | 2 mg/kg               | Long term exposure systemic effects |
|                                |         | Inhalation | 1,4 mg/m <sup>3</sup> | Long term exposure systemic effects |
| Graphite (CAS 7782-42-5)       | Workers | Inhalation | 1,2 mg/m <sup>3</sup> | Long term exposure local effects    |
| Toluene (CAS 108-88-3)         | Workers | Dermal     | 384 mg/kg/day         | Long term Systemic effects          |
|                                |         | Inhalation | 384 mg/m <sup>3</sup> | Acute Local effects                 |
|                                |         | Inhalation | 384 mg/m <sup>3</sup> | Acute Systemic effects              |
|                                |         | Inhalation | 192 mg/m <sup>3</sup> | Long term Local effects             |
|                                |         | Inhalation | 192 mg/m <sup>3</sup> | Long term Systemic effects          |

### Predicted no effect concentrations (PNECs)

| Components                     | Type                         | Route          | Value       | Form |
|--------------------------------|------------------------------|----------------|-------------|------|
| Dicumyl peroxide (CAS 80-43-3) | Aqua (freshwater)            | Not applicable | 0,0023 mg/l |      |
|                                | Sediment (freshwater)        | Not applicable | 2,2 mg/l    |      |
|                                | Sewage Treatment Plant       | Not applicable | 100 mg/l    |      |
|                                | Soil                         | Not applicable | 0,44 mg/kg  |      |
| Toluene (CAS 108-88-3)         | Aqua (freshwater)            | Not applicable | 0,68 mg/l   |      |
|                                | Aqua (intermittent releases) | Not applicable | 0,68 mg/l   |      |
|                                | Aqua (marine water)          | Not applicable | 0,68 mg/l   |      |
|                                | Sediment (freshwater)        | Not applicable | 16,39 mg/kg |      |
|                                | Sediment (marine water)      | Not applicable | 16,39 mg/kg |      |
|                                | Sewage Treatment Plant       | Not applicable | 13,61 mg/l  |      |
|                                | Soil                         | Not applicable | 2,89 mg/kg  |      |

## 8.2. Exposure controls

**Appropriate engineering controls** Provide adequate ventilation. Observe Occupational Exposure Limits and minimise the risk of inhalation of vapours.

### Individual protection measures, such as personal protective equipment

|                               |  |
|-------------------------------|--|
| <b>General information</b>    | Personal protective equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.  |
| <b>Eye/face protection</b>    | Wear approved safety goggles.  |
| <b>Skin protection</b>        |  |
| <b>- Hand protection</b>      | Wear protective gloves. Polyvinyl alcohol gloves are recommended. Be aware that the liquid may penetrate the gloves. Frequent change is advisable. Suitable gloves can be recommended by the glove supplier. |
| <b>- Other</b>                | Wear appropriate chemical resistant clothing to prevent any possibility of skin contact.   |
| <b>Respiratory protection</b> | In case of inadequate ventilation or risk of inhalation of vapours, use suitable respiratory equipment with combination filter (type A2/P2).   |
| <b>Thermal hazards</b>        | When material is heated, wear gloves to protect against thermal burns.   |

**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. Private clothes and working clothes should be kept separately.

**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 solvent odor.

**Physical state** Liquid.

**Form** Pliable semi-solid.

**Colour** Black.

**Odour** Solvent.

**Odour threshold** 0,5 - 23 ppm (Toluene).

**pH** Not applicable.

**Melting point/freezing point** Not available.

**Initial boiling point and boiling range** > 110 °C (> 230 °F)

**Flash point** 92,2 °C (198 °F) Closed cup

**Evaporation rate** 1 (Butyl acetate=1)

**Flammability (solid, gas)** Not applicable.

#### Upper/lower flammability or explosive limits

**Flammability limit - lower (%)** Not available.

**Flammability limit - upper (%)** Not available.

**Vapour pressure** 6,0 mm Hg @ 20 °C

**Vapour density** Not applicable.

**Relative density** 0,9

**Solubility(ies)** Negligible.

**Partition coefficient (n-octanol/water)** Not available.

**Auto-ignition temperature** 480 °C (896 °F) (Toluene)

**Decomposition temperature** Not available.

**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.

**10.5. Incompatible materials** Strong oxidising agents.

**10.6. Hazardous decomposition products** Carbon oxides. 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** High concentrations: Vapours may cause drowsiness and dizziness.

**Skin contact** May cause skin irritation. Prolonged or repeated contact may dry skin and cause dermatitis. Components of the product may be absorbed into the body through the skin.

**Eye contact** May cause eye irritation.

**Symptoms** Irritation of eyes and mucous membranes. Symptoms include itching, burning, redness and tearing. Skin irritation. Shortness of breath.

### 11.1. Information on toxicological effects

**Acute toxicity** May cause discomfort if swallowed. Vapours may cause drowsiness and dizziness.

| Components                     | Species | Test results                      |
|--------------------------------|---------|-----------------------------------|
| Dicumyl peroxide (CAS 80-43-3) |         |                                   |
| <b>Acute</b>                   |         |                                   |
| <i>Oral</i>                    |         |                                   |
| LD50                           | Rat     | 4100 mg/kg                        |
| Toluene (CAS 108-88-3)         |         |                                   |
| <b>Acute</b>                   |         |                                   |
| <i>Dermal</i>                  |         |                                   |
| LD50                           | Rabbit  | 14,1 ml/kg                        |
| <i>Inhalation</i>              |         |                                   |
| LC50                           | Rat     | 49000 mg/m <sup>3</sup> , 4 Hours |
| <i>Oral</i>                    |         |                                   |
| LD50                           | Rat     | 636 mg/kg                         |

**Skin corrosion/irritation** May cause skin irritation.

**Serious eye damage/irritation** May cause eye irritation.

**Respiratory sensitisation** Not classified.

**Skin sensitisation** Not a skin sensitiser.

**Germ cell mutagenicity** Not available.

**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

Toluene (CAS 108-88-3) 3 Not classifiable as to carcinogenicity to humans.

**Reproductive toxicity** Suspected of damaging the unborn child.

**Specific target organ toxicity - single exposure** Not available.

**Specific target organ toxicity - repeated exposure** May cause damage to organs through prolonged or repeated exposure: Central nervous system.

**Aspiration hazard** Not classified.

**Mixture versus substance information** Not available.

**Other information** 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** Harmful to aquatic life with long lasting effects.

| Components             | Species | Test results   |
|------------------------|---------|--|
| Toluene (CAS 108-88-3) |         |  |
| <b>Aquatic</b>         |         |  |
| Crustacea              | EC50    | Water flea (Daphnia magna) 5,46 - 9,83 mg/l, 48 hours                |
| Fish                   | LC50    | Coho salmon, silver salmon (Oncorhynchus kisutch) 5,5 mg/l, 96 hours |

**12.2. Persistence and degradability** The product contains inorganic compounds which are not biodegradable.

**12.3. Bioaccumulative potential** No data available on bioaccumulation.

#### Partition coefficient n-octanol/water (log Kow)

Toluene (CAS 108-88-3) 2,73  
Dicumyl peroxide (CAS 80-43-3) 5,5

**Bioconcentration factor (BCF)** Not available.

**12.4. Mobility in soil** No data available.

|   |  |
|---|--|
| <b>Mobility in general</b>                      | The product contains substances which are insoluble in water and which sediment in water systems. The product contains volatile organic compounds (VOC) which will evaporate easily from all surfaces. |
| <b>12.5. Results of PBT and vPvB assessment</b> | Not a PBT or vPvB substance or mixture.  |
| <b>12.6. Other adverse effects</b>              | Not available.   |

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

|                                     |  |
|-------------------------------------|--|
| <b>Residual waste</b>               | Dispose of in accordance with local regulations.   |
| <b>Contaminated packaging</b>       | Since emptied containers may retain product residue, follow label warnings even after container is emptied.  |
| <b>EU waste code</b>                | 08 04 09*  |
| <b>Disposal methods/information</b> | 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**

Toluene (CAS 108-88-3)

**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**

Toluene (CAS 108-88-3)

#### 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**

Dicumyl peroxide (CAS 80-43-3)

Toluene (CAS 108-88-3)

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

Toluene (CAS 108-88-3)

#### 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. Pregnant women should not work with the product, if there is the least risk of exposure. 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. DSD: Directive 67/548/EEC.  
CLP: Regulation No. 1272/2008.

#### 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

R7 May cause fire.  
R11 Highly flammable.  
R36/38 Irritating to eyes and skin.  
R38 Irritating to skin.  
R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.  
R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
R63 Possible risk of harm to the unborn child.  
R65 Harmful: may cause lung damage if swallowed.  
R67 Vapours may cause drowsiness and dizziness.  
H225 - Highly flammable liquid and vapour.  
H242 - Heating may cause a fire.  
H304 - May be fatal if swallowed and enters airways.  
H315 - Causes skin irritation.  
H319 - Causes serious eye irritation.  
H336 - May cause drowsiness or dizziness.  
H361d - Suspected of damaging the unborn child.  
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.