

**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>	S-180
<b>Registration number</b>	-
<b>Synonyms</b>	None.
<b>Product code</b>	900-0029
<b>Issue date</b>	19-August-2013
<b>Version number</b>	02
<b>Revision date</b>	19-August-2013
<b>Supersedes date</b>	15-November-2012

**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**

<b>Manufacturer/Supplier</b>	Team Industrial Services, Inc.
<b>Address</b>	Postbus 37 4380 AA Vlissingen 3237 The Netherlands
<b>Telephone</b>	+31 (0) 118 48 58 00
<b>Fax</b>	+31 (0) 118 48 58 86
<b>e-mail</b>	Not available.
<b>Contact person</b>	Not available.

**1.4. Emergency telephone number** +(61)-290372994, +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** R52/53

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

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

<b>Health hazards</b>			
Reproductive toxicity	Category 2		H361d - Suspected of damaging the unborn child. H361fd - Suspected of damaging fertility. Suspected of damaging the unborn child.
<b>Environmental hazards</b>			
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>	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.
<b>Specific hazards</b>	May cause skin and eye irritation. Prolonged or repeated contact may dry skin and cause dermatitis. Possible risk of harm to the unborn child.
<b>Main symptoms</b>	Irritation of eyes and mucous membranes. Symptoms include itching, burning, redness and tearing. Coughing.

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

**Contains:** Toluene

**Hazard pictograms****Signal word**

Warning

**Hazard statements**

H361d - Suspected of damaging the unborn child.  
 H361fd - Suspected of damaging fertility. Suspected of damaging the unborn child.  
 H412 - Harmful to aquatic life with long lasting effects.

**Precautionary statements****Prevention**

P201 - Obtain special instructions before use.  
 P281 - Use personal protective equipment as required.  
 P273 - Avoid release to the environment.

**Response**

P308 + P313 - IF exposed or concerned: 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 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
Graphite	10-25	7782-42-5 231-955-3	-	-	
<b>Classification:</b>					<b>DSD:</b> - <b>CLP:</b> -
Quartz (SiO <sub>2</sub> )	10-25	14808-60-7 238-878-4	-	-	
<b>Classification:</b>					<b>DSD:</b> - <b>CLP:</b> -
Refractories, Fibers, Aluminosilicate	5-10	142844-00-6	-	650-017-00-8	
<b>Classification:</b>					<b>DSD:</b> Carc. Cat. 2;R49 <b>CLP:</b> Carc. 1B;H350
Carbon fiber	<5	7440-44-0 231-153-3	-	-	
<b>Classification:</b>					<b>DSD:</b> - <b>CLP:</b> -
Dicumyl peroxide	<5	80-43-3 201-279-3	-	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	108-88-3 203-625-9	-	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, Repr. 2;H361d, STOT RE 2;H373

DSD: Directive 67/548/EEC.

CLP: Regulation No. 1272/2008.

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

<b>Composition comments</b>	All concentrations are in percent by weight. The full text for all R- and H-phrases is displayed in section 16. Refractories, Fibers, Aluminosilicate Note R: The classification as a carcinogen does not apply according to Directive 67/548/EEC as it can be shown that fibers have a length weighted geometric mean diameter less two standard geometric errors greater than 6 micrometers.
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## SECTION 4: First aid measures

<b>General information</b>	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.
<b>4.1. Description of first aid measures</b>	
<b>Inhalation</b>	Move injured person into fresh air and keep person calm under observation. Get medical attention if any discomfort occurs.
<b>Skin contact</b>	Remove contaminated clothing and shoes. Flush thoroughly with water for at least 15 minutes. If irritation occurs, get medical assistance.
<b>Eye contact</b>	Flush thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical attention if irritation develops or persists.
<b>Ingestion</b>	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.
<b>4.2. Most important symptoms and effects, both acute and delayed</b>	Coughing. Irritation of eyes and mucous membranes. Symptoms include itching, burning, redness and tearing.
<b>4.3. Indication of any immediate medical attention and special treatment needed</b>	Not available.

## SECTION 5: Firefighting measures

<b>General fire hazards</b>	Combustible liquid.
<b>5.1. Extinguishing media</b>	
<b>Suitable extinguishing media</b>	Extinguish with foam, carbon dioxide, dry powder or water fog.
<b>Unsuitable extinguishing media</b>	No restrictions known.
<b>5.2. Special hazards arising from the substance or mixture</b>	By heating and fire, irritating vapours/gases may be formed.
<b>5.3. Advice for firefighters</b>	
<b>Special protective equipment for firefighters</b>	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.
<b>Special fire fighting procedures</b>	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

<b>6.1. Personal precautions, protective equipment and emergency procedures</b>	
<b>For non-emergency personnel</b>	Ventilate closed spaces before entering. Avoid inhalation of vapours and contact with skin and eyes. Wear appropriate protective equipment and clothing during clean-up.
<b>For emergency responders</b>	Use personal protection as recommended in section 8 of the SDS.
<b>6.2. Environmental precautions</b>	Prevent further leakage or spillage if safe to do so.
<b>6.3. Methods and material for containment and cleaning up</b>	Stop the flow of material, if this is without risk. Prevent entry into waterways, sewers, basements or confined areas. 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.
<b>6.4. Reference to other sections</b>	For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.

## SECTION 7: Handling and storage

<b>7.1. Precautions for safe handling</b>	Pregnant or breastfeeding women must not handle this product. Avoid inhalation of vapours and contact with skin and eyes. 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.
<b>7.2. Conditions for safe storage, including any incompatibilities</b>	Store in tightly closed original container in a dry, cool and well-ventilated place. Keep away from food, drink and animal feeding stuffs. Store away from incompatible materials.

**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/m3	Respirable dust.
Graphite (CAS 7782-42-5)	STEL	10 mg/m3	Respirable dust.
	MAK	5 mg/m3	Respirable dust.
Quartz (SiO <sub>2</sub> ) (CAS 14808-60-7)	STEL	10 mg/m3	Respirable dust.
	MAK	0,15 mg/m3	Respirable dust.
Toluene (CAS 108-88-3)	MAK	190 mg/m3	
	STEL	50 ppm 380 mg/m3 100 ppm	

**Austria. TRK List**

Components	Type	Value	Form
Refractories, Fibers, Aluminosilicate (CAS 142844-00-6)	STEL	2000000 fibers/m3	Fiber.
	TWA	500000 fibers/m3	Fiber.

**Belgium. Exposure Limit Values.**

Components	Type	Value	Form
Carbon fiber (CAS 7440-44-0)	TWA	2 mg/m3	Respirable fraction.
Graphite (CAS 7782-42-5)	TWA	2 mg/m3	Respirable fraction.
Quartz (SiO <sub>2</sub> ) (CAS 14808-60-7)	TWA	0,1 mg/m3	Respirable dust.
Toluene (CAS 108-88-3)	STEL	384 mg/m3 100 ppm	
	TWA	77 mg/m3 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/m3	Inhalable fraction.
Graphite (CAS 7782-42-5)	TWA	5 mg/m3	Inhalable fraction.
Quartz (SiO <sub>2</sub> ) (CAS 14808-60-7)	TWA	0,07 mg/m3	Respirable fraction.
Refractories, Fibers, Aluminosilicate (CAS 142844-00-6)	TWA	1 fibers/cm3	Respirable fraction.
		6 mg/m3	Inhalable fraction.
Toluene (CAS 108-88-3)	STEL	384 mg/m3	
	TWA	192 mg/m3	

**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/m3
Graphite (CAS 7782-42-5)	TWA	10 mg/m3
Toluene (CAS 108-88-3)	TWA	375 mg/m3
		100 ppm

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

Components	Type	Value	Form
Carbon fiber (CAS 7440-44-0)	TWA	10 mg/m3	Respirable dust.
		10 mg/m3	Total dust.

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

Components	Type	Value	Form
Graphite (CAS 7782-42-5)	TWA	10 mg/m <sup>3</sup>	Respirable dust.
		10 mg/m <sup>3</sup>	Total dust.
Quartz (SiO <sub>2</sub> ) (CAS 14808-60-7)	TWA	0,1 mg/m <sup>3</sup>	Respirable dust.
Refractories, Fibers, Aluminosilicate (CAS 142844-00-6)	TWA	0,3 fibers/cm <sup>3</sup>	Respirable fibers.
Toluene (CAS 108-88-3)	Ceiling	500 mg/m <sup>3</sup>	
	TWA	200 mg/m <sup>3</sup>	

**Denmark. Exposure Limit Values**

Components	Type	Value	Form
Carbon fiber (CAS 7440-44-0)	TLV	2,5 mg/m <sup>3</sup>	Respirable.
Graphite (CAS 7782-42-5)	TLV	2,5 mg/m <sup>3</sup>	Respirable.
Quartz (SiO <sub>2</sub> ) (CAS 14808-60-7)	TLV	0,3 mg/m <sup>3</sup>	Total
		0,1 mg/m <sup>3</sup>	Respirable.
Toluene (CAS 108-88-3)	TLV	94 mg/m <sup>3</sup>	
		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/m <sup>3</sup>	Dust.
Graphite (CAS 7782-42-5)	TWA	5 mg/m <sup>3</sup>	Dust.
Quartz (SiO <sub>2</sub> ) (CAS 14808-60-7)	TWA	0,1 mg/m <sup>3</sup>	Respirable dust.
Refractories, Fibers, Aluminosilicate (CAS 142844-00-6)	TWA	1 fibers/mL	
Toluene (CAS 108-88-3)	STEL	384 mg/m <sup>3</sup>	
		100 ppm	
	TWA	192 mg/m <sup>3</sup>	
		50 ppm	

**Finland. Workplace Exposure Limits**

Components	Type	Value	Form
Carbon fiber (CAS 7440-44-0)	TWA	2 mg/m <sup>3</sup>	
Graphite (CAS 7782-42-5)	TWA	2 mg/m <sup>3</sup>	
Quartz (SiO <sub>2</sub> ) (CAS 14808-60-7)	TWA	0,05 mg/m <sup>3</sup>	Respirable.
Refractories, Fibers, Aluminosilicate (CAS 142844-00-6)	TWA	0,2 fibers/cm <sup>3</sup>	Respirable.
Toluene (CAS 108-88-3)	STEL	380 mg/m <sup>3</sup>	
		100 ppm	
	TWA	81 mg/m <sup>3</sup>	
		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/m <sup>3</sup>	Respirable fraction.
Graphite (CAS 7782-42-5)	VME	2 mg/m <sup>3</sup>	Respirable fraction.
Quartz (SiO <sub>2</sub> ) (CAS 14808-60-7)	VME	0,1 mg/m <sup>3</sup>	Respirable fraction.
Refractories, Fibers, Aluminosilicate (CAS 142844-00-6)	VME	1 fibers/cm <sup>3</sup>	Fiber.
		0,1 fibers/cm <sup>3</sup>	Fiber.
Toluene (CAS 108-88-3)	VLE	384 mg/m <sup>3</sup>	

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

Components	Type	Value	Form
	VME	100 ppm 76,8 mg/m <sup>3</sup> 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/m <sup>3</sup>	Inhalable fraction.
Graphite (CAS 7782-42-5)	TWA	1,5 mg/m <sup>3</sup>	Respirable fraction.
		4 mg/m <sup>3</sup>	Inhalable fraction.
Toluene (CAS 108-88-3)	TWA	1,5 mg/m <sup>3</sup>	Respirable fraction.
		190 mg/m <sup>3</sup> 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/m <sup>3</sup>	Respirable fraction.
Graphite (CAS 7782-42-5)	AGW	10 mg/m <sup>3</sup>	Inhalable fraction.
		3 mg/m <sup>3</sup>	Respirable fraction.
Toluene (CAS 108-88-3)	AGW	10 mg/m <sup>3</sup>	Inhalable fraction.
		190 mg/m <sup>3</sup> 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.
Graphite (CAS 7782-42-5)	TWA	10 mg/m <sup>3</sup>	Inhalable
		5 mg/m <sup>3</sup>	Respirable.
Toluene (CAS 108-88-3)	STEL	10 mg/m <sup>3</sup>	Inhalable
		560 mg/m <sup>3</sup> 150 ppm	
	TWA	375 mg/m <sup>3</sup> 100 ppm	

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

Components	Type	Value	Form
Quartz (SiO <sub>2</sub> ) (CAS 14808-60-7)	TWA	0,15 mg/m <sup>3</sup>	Respirable.
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.
Graphite (CAS 7782-42-5)	TWA	2,5 mg/m <sup>3</sup>	Respirable dust.
		5 mg/m <sup>3</sup>	Total dust.
Quartz (SiO <sub>2</sub> ) (CAS 14808-60-7)	TWA	2,5 mg/m <sup>3</sup>	Respirable dust.
		0,3 mg/m <sup>3</sup>	Total dust.
Toluene (CAS 108-88-3)	STEL	0,1 mg/m <sup>3</sup> 188 mg/m <sup>3</sup> 50 ppm	Respirable dust.
	TWA	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.
Graphite (CAS 7782-42-5)	TWA	10 mg/m <sup>3</sup>	Total inhalable dust.
		4 mg/m <sup>3</sup>	Respirable dust.
		10 mg/m <sup>3</sup>	Total inhalable dust.
Quartz (SiO <sub>2</sub> ) (CAS 14808-60-7)	TWA	0,1 mg/m <sup>3</sup>	Respirable dust.
Refractories, Fibers, Aluminosilicate (CAS 142844-00-6)	TWA	1 fibers/cm <sup>3</sup>	
		5 mg/m <sup>3</sup>	
Toluene (CAS 108-88-3)	STEL	5 mg/m <sup>3</sup>	
		384 mg/m <sup>3</sup>	
	TWA	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.
Graphite (CAS 7782-42-5)	TWA	2 mg/m <sup>3</sup>	Respirable fraction.
Quartz (SiO <sub>2</sub> ) (CAS 14808-60-7)	TWA	0,025 mg/m <sup>3</sup>	Respirable fraction.
Refractories, Fibers, Aluminosilicate (CAS 142844-00-6)	TWA	0,2 fibers/cm <sup>3</sup>	Fiber.
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.
Graphite (CAS 7782-42-5)	TWA	2 mg/m <sup>3</sup>	Dust.
		2 mg/m <sup>3</sup>	
Refractories, Fibers, Aluminosilicate (CAS 142844-00-6)	TWA	2 mg/m <sup>3</sup>	
Toluene (CAS 108-88-3)	STEL	150 mg/m <sup>3</sup>	
		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.
Graphite (CAS 7782-42-5)	TWA	3 mg/m <sup>3</sup>	Dust.
Quartz (SiO <sub>2</sub> ) (CAS 14808-60-7)	TWA	0,1 mg/m <sup>3</sup>	Respirable fraction.
Toluene (CAS 108-88-3)	STEL	384 mg/m <sup>3</sup>	
		100 ppm	
		192 mg/m <sup>3</sup> 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>
		100 ppm
		192 mg/m <sup>3</sup> 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>
		100 ppm
	TWA	192 mg/m <sup>3</sup>
		50 ppm

**Netherlands. OELs (binding)**

Components	Type	Value	Form
Quartz (SiO <sub>2</sub> ) (CAS 14808-60-7)	TWA	0,075 mg/m <sup>3</sup>	Respirable dust.
Refractories, Fibers, Aluminosilicate (CAS 142844-00-6)	TWA	0,5 fibers/cc	Respirable fibers.
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.
Quartz (SiO <sub>2</sub> ) (CAS 14808-60-7)	TLV	0,3 mg/m <sup>3</sup>	Total dust.
		0,1 mg/m <sup>3</sup>	Respirable dust.
Refractories, Fibers, Aluminosilicate (CAS 142844-00-6)	TLV	0,1 fibers/cm <sup>3</sup>	Fiber.
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.
Quartz (SiO <sub>2</sub> ) (CAS 14808-60-7)	TWA	2 mg/m <sup>3</sup>	Total dust.
		0,3 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>
		100 ppm
	TWA	192 mg/m <sup>3</sup>
		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.
Quartz (SiO <sub>2</sub> ) (CAS 14808-60-7)	TWA	0,025 mg/m <sup>3</sup>	Respirable fraction.
Toluene (CAS 108-88-3)	TWA	50 ppm	



**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.
Graphite (CAS 7782-42-5)	TWA	10 mg/m <sup>3</sup>	Total
		2 mg/m <sup>3</sup>	Respirable fraction.
		10 mg/m <sup>3</sup>	Total
Quartz (SiO <sub>2</sub> ) (CAS 14808-60-7)	TWA	0,1 mg/m <sup>3</sup>	
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	Form
Quartz (SiO <sub>2</sub> ) (CAS 14808-60-7)	TWA	0,15 mg/m <sup>3</sup>	Respirable fraction.
Refractories, Fibers, Aluminosilicate (CAS 142844-00-6)	TWA	500000 fibers/cm <sup>3</sup>	
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.
Graphite (CAS 7782-42-5)	TWA	2 mg/m <sup>3</sup>	Dust.
Quartz (SiO <sub>2</sub> ) (CAS 14808-60-7)	TWA	0,1 mg/m <sup>3</sup>	Respirable fraction.
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.
		0,1 mg/m <sup>3</sup>	Respirable dust.
Quartz (SiO <sub>2</sub> ) (CAS 14808-60-7)	TWA	0,1 mg/m <sup>3</sup>	
Refractories, Fibers, Aluminosilicate (CAS 142844-00-6)	TWA	0,2 fibers/mL	
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/m3	Inhalable dust.
Graphite (CAS 7782-42-5)	TWA	2,5 mg/m3	Respirable dust.
		5 mg/m3	Inhalable dust.
		2,5 mg/m3	Respirable dust.
Quartz (SiO <sub>2</sub> ) (CAS 14808-60-7)	TWA	0,15 mg/m3	Respirable dust.
Refractories, Fibers, Aluminosilicate (CAS 142844-00-6)	TWA	0,25 fibers/mL	Fiber.
Toluene (CAS 108-88-3)	STEL	760 mg/m3	
		200 ppm	
		TWA	190 mg/m3
		50 ppm	

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

Components	Type	Value	Form
Carbon fiber (CAS 7440-44-0)	TWA	4 mg/m3	Respirable dust.
Graphite (CAS 7782-42-5)	TWA	10 mg/m3	Inhalable dust.
		4 mg/m3	Respirable dust.
		10 mg/m3	Inhalable dust.
Quartz (SiO <sub>2</sub> ) (CAS 14808-60-7)	TWA	0,1 mg/m3	Respirable.
Refractories, Fibers, Aluminosilicate (CAS 142844-00-6)	TWA	2 fibers/mL	
Toluene (CAS 108-88-3)	STEL	5 mg/m3	
		384 mg/m3	
		100 ppm	
	TWA	191 mg/m3	
		50 ppm	

**United Kingdom**

Components	Type	Value	Form
Graphite (CAS 7782-42-5)	TWA	4 mg/m3	Respirable dust.
		10 mg/m3	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/m3
		100 ppm
		TWA
		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.

### Slovakia. BLVs (Biological Limit Value). Regulation no. 355/2006 concerning protection of workers exposed to chemical agents, Annex 2

Components	Value	Determinant	Specimen	Sampling time
Toluene (CAS 108-88-3)	600 µg/l	Toluene	Blood	*
	1600 mg/g	Hippuric acid	Creatinine in urine	*
	1,03 mg/g	o-cresol (Phenol, 2-methyl-)	Creatinine in urine	*
	2401 mg/l	Hippuric acid	Urine	*
	1,5 mg/l	o-cresol (Phenol, 2-methyl-)	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)	600 µg/l	Blood	*
	2 g/g	Creatinine in urine	*
	0,5 mg/l	Urine	*

\* - 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		

## Exposure guidelines

### EU Exposure Limit Values: Skin designation

Toluene (CAS 108-88-3)

Can be absorbed through the skin.

## 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

#### 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 approved safety goggles.

#### Skin protection

##### - Hand protection

Wear protective gloves. Be aware that the liquid may penetrate the gloves. Frequent change is advisable.

##### - Other

Wear protective gloves. Wear appropriate clothing to prevent possibility of skin contact.

#### Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

#### Thermal hazards

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. Observe any medical surveillance requirements.

## 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 (198,0 °F) Closed cup

#### Evaporation rate

1 (Butyl acetate=1)

#### Flammability (solid, gas)

Not available.

**Upper/lower flammability or explosive limits**

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

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

**Vapour pressure** 6 mm Hg @ 20 °C

**Vapour density** Not available.

**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 available.

**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. Strong acids.

**10.6. Hazardous decomposition products** Carbon oxides. Silicon oxides. Aluminum 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. Components of the product may be absorbed into the body by ingestion.

**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. The product contains organic solvents which may be absorbed into the body by skin contact and cause permanent damage to the nervous system, including the brain.

**Eye contact** May cause eye irritation.

**Symptoms** Coughing. Irritation of eyes and mucous membranes. Symptoms include itching, burning, redness and tearing.

**11.1. Information on toxicological effects**

**Acute toxicity** May cause mild central nervous system effects.

Components	Species	Test results
Carbon fiber (CAS 7440-44-0)		
<b>Acute</b>		
<i>Oral</i>		
LD50	Rat	> 10000 mg/kg
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

Components	Species	Test results
<i>Inhalation</i>		
LC50	Rat	49000 mg/m <sup>3</sup> , 4 Hours
<i>Oral</i>		
LD50	Rat	636 mg/kg
<b>Skin corrosion/irritation</b>	May cause skin irritation.	
<b>Serious eye damage/eye irritation</b>	May cause eye irritation.	
<b>Respiratory sensitisation</b>	Not classified.	
<b>Skin sensitisation</b>	May cause eczema-like skin disorders (dermatitis).	
<b>Germ cell mutagenicity</b>	No data available.	
<b>Carcinogenicity</b>	Risk of cancer cannot be excluded with prolonged exposure.	
<b>IARC Monographs. Overall Evaluation of Carcinogenicity</b>		
Refractories, Fibers, Aluminosilicate (CAS 142844-00-6)	2B Possibly carcinogenic to humans.	
Toluene (CAS 108-88-3)	3 Not classifiable as to carcinogenicity to humans.	
<b>Reproductive toxicity</b>	Suspected of damaging the unborn child.	
<b>Specific target organ toxicity - single exposure</b>	Not available.	
<b>Specific target organ toxicity - repeated exposure</b>	Not available.	
<b>Aspiration hazard</b>	Not classified.	
<b>Mixture versus substance information</b>	Not available.	
<b>Other information</b>	May aggravate pre-existing disorders of the skin. Organic solvents may be absorbed into the body by inhalation and ingestion and cause permanent damage to the nervous system, including the brain.	

## 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
		Pink salmon (Oncorhynchus gorbuscha) 6,86 - 8,48 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)**

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

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

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

**Mobility in general** 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.

**12.5. Results of PBT and vPvB assessment** Not a PBT or vPvB substance or mixture.

**12.6. Other adverse effects** 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.

<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* The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.
<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

Not regulated as dangerous goods.

### RID

Not regulated as dangerous goods.

### ADN

Not regulated as dangerous goods.

### IATA

Not regulated as dangerous goods.

### IMDG

Not regulated as dangerous goods.

**14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not applicable.

## 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**

Refractories, Fibers, Aluminosilicate (CAS 142844-00-6)

#### Authorisations

**Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorisation, as amended**

Not listed.

#### Restrictions on use

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

Refractories, Fibers, Aluminosilicate (CAS 142844-00-6)

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)

Refractories, Fibers, Aluminosilicate (CAS 142844-00-6)

Toluene (CAS 108-88-3)

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

Refractories, Fibers, Aluminosilicate (CAS 142844-00-6)

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 allowed 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.

LD50: Lethal Dose, 50%.  
LC50: Lethal Concentration, 50%.  
EC50: Effective concentration, 50%.

### 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.  
R49 May cause cancer by 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.  
H350 May cause cancer.  
H361d Suspected of damaging the unborn child.  
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.