

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

**Trade name or designation of the mixture** S-180 SILICA FREE  
**Registration number** -  
**Synonyms** None.  
**Product code** 900-0039  
**Issue date** 27-February-2013  
**Version number** 01  
**Revision date** 27-February-2013  
**Supersedes date** 12-December-2011

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

**Identified uses** Industrial Leak Sealant  
**Uses advised against** None known.

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

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

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

**SECTION 2: Hazards identification****2.1. Classification of the substance or mixture**

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

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

**Classification** 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**  
Reproductive toxicity Category 2 H361d - Suspected of damaging the unborn child.

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

**Hazard summary**

**Physical hazards** Not classified for physical hazards.  
**Health hazards** Occupational exposure to the substance or mixture may cause adverse health effects.  
**Environmental hazards** 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.  
**Main symptoms** Irritation of eyes and mucous membranes. Symptoms include itching, burning, redness and tearing.

**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.  
 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**

Not available.

**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
Aluminium oxide	25-50	1344-28-1 215-691-6	-	-	
<b>Classification:</b>					
<b>DSD:</b>	-				
<b>CLP:</b>	-				
Polymer	25-50	25034-71-3 -	-	-	
<b>Classification:</b>					
<b>DSD:</b>	-				
<b>CLP:</b>	-				
Graphite	10-25	7782-42-5 231-955-3	-	-	
<b>Classification:</b>					
<b>DSD:</b>	-				
<b>CLP:</b>	-				
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, STOT SE 3;H336, Repr. 2;H361d, STOT RE 2;H373				

DSD: Directive 67/548/EEC.

CLP: Regulation No. 1272/2008.

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

**Composition comments**

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

## 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 to fresh air. 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. 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>	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>	Be aware that symptoms of chemical pneumonia (shortness of breath) may occur several hours after exposure.

## 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>	Solvent vapours may form explosive mixtures with air. By heating and fire, corrosive vapours/gases may be formed. Carbon oxides. Silicon oxides.
<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. See Section 8 for personal protective equipment.
<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. 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.
<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.
<b>7.3. Specific end use(s)</b>	Industrial Leak Sealant

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Occupational exposure limits

##### Austria. MAK List

Components	Type	Value	Form
Aluminium oxide (CAS 1344-28-1)	MAK	5 mg/m <sup>3</sup>	Respirable fume.
		5 mg/m <sup>3</sup>	Respirable fraction.
	10 mg/m <sup>3</sup>	Inhalable fraction.	
	STEL	20 mg/m <sup>3</sup>	Inhalable fraction.
		10 mg/m <sup>3</sup>	Respirable fume.
Carbon fiber (CAS 7440-44-0)	MAK	10 mg/m <sup>3</sup>	Respirable fraction.
	STEL	5 mg/m <sup>3</sup>	Respirable dust.
Graphite (CAS 7782-42-5)	MAK	10 mg/m <sup>3</sup>	Respirable dust.
	STEL	10 mg/m <sup>3</sup>	Respirable dust.
Toluene (CAS 108-88-3)	MAK	190 mg/m <sup>3</sup>	
		50 ppm	
	STEL	380 mg/m <sup>3</sup>	
		100 ppm	

##### Belgium. Exposure Limit Values.

Components	Type	Value	Form
Aluminium oxide (CAS 1344-28-1)	TWA	1 mg/m <sup>3</sup>	Respirable fraction.
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>	
		100 ppm	
	TWA	77 mg/m <sup>3</sup>	
		20 ppm	

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

Components	Type	Value	Form
Aluminium oxide (CAS 1344-28-1)	TWA	10 mg/m <sup>3</sup>	Dust.
		1,5 mg/m <sup>3</sup>	Respirable fraction.
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>
		100 ppm

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

Components	Type	Value	Form
Aluminium oxide (CAS 1344-28-1)	TWA	0,1 mg/m <sup>3</sup>	Respirable dust.
		10 mg/m <sup>3</sup>	Respirable dust.
Carbon fiber (CAS 7440-44-0)	TWA	10 mg/m <sup>3</sup>	Total dust.
		10 mg/m <sup>3</sup>	Respirable dust.
		10 mg/m <sup>3</sup>	Total dust.
Graphite (CAS 7782-42-5)	TWA	500 mg/m <sup>3</sup>	
		200 mg/m <sup>3</sup>	

### Denmark. Exposure Limit Values

Components	Type	Value	Form
Aluminium oxide (CAS 1344-28-1)	TLV	5 mg/m3	Total
Carbon fiber (CAS 7440-44-0)	TLV	2 mg/m3 2,5 mg/m3	Respirable. Respirable.
Graphite (CAS 7782-42-5)	TLV	2,5 mg/m3	Respirable.
Toluene (CAS 108-88-3)	TLV	94 mg/m3 25 ppm	

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

Components	Type	Value	Form
Aluminium oxide (CAS 1344-28-1)	TWA	4 mg/m3	Respirable dust.
Carbon fiber (CAS 7440-44-0)	TWA	10 mg/m3 3 mg/m3	Total dust. 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 50 ppm	

### Finland. Workplace Exposure Limits

Components	Type	Value
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 25 ppm

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

Components	Type	Value	Form
Aluminium oxide (CAS 1344-28-1)	VME	10 mg/m3	
Carbon fiber (CAS 7440-44-0)	VME	2 mg/m3	Respirable fraction.
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 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
Aluminium oxide (CAS 1344-28-1)	TWA	4 mg/m3	Inhalable dust.
Carbon fiber (CAS 7440-44-0)	TWA	1,5 mg/m3 4 mg/m3	Respirable dust. Inhalable fraction.
Graphite (CAS 7782-42-5)	TWA	1,5 mg/m3 4 mg/m3	Respirable fraction. Inhalable fraction.
Toluene (CAS 108-88-3)	TWA	1,5 mg/m3 190 mg/m3 50 ppm	Respirable fraction.

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

Components	Type	Value	Form
Aluminium oxide (CAS 1344-28-1)	AGW	3 mg/m3	Respirable fraction.

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

Components	Type	Value	Form
Carbon fiber (CAS 7440-44-0)	AGW	10 mg/m <sup>3</sup>	Inhalable fraction.
		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
Aluminium oxide (CAS 1344-28-1)	TWA	5 mg/m <sup>3</sup>	Inhalable
		10 mg/m <sup>3</sup>	Respirable.
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	Form
Aluminium oxide (CAS 1344-28-1)	TWA	6 mg/m <sup>3</sup>	Respirable.
Toluene (CAS 108-88-3)	STEL	380 mg/m <sup>3</sup>	
		190 mg/m <sup>3</sup>	

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

Components	Type	Value	Form
Aluminium oxide (CAS 1344-28-1)	TWA	10 mg/m <sup>3</sup>	
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.
Toluene (CAS 108-88-3)	STEL	188 mg/m <sup>3</sup>	
		50 ppm	
		94 mg/m <sup>3</sup>	
	TWA	25 ppm	

**Ireland. Occupational Exposure Limits**

Components	Type	Value	Form
Aluminium oxide (CAS 1344-28-1)	TWA	4 mg/m <sup>3</sup>	Respirable dust.
		10 mg/m <sup>3</sup>	Total inhalable dust.
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.
Toluene (CAS 108-88-3)	STEL	384 mg/m <sup>3</sup>	
		100 ppm	
		192 mg/m <sup>3</sup>	
	TWA	50 ppm	

**Italy. OELs**

Components	Type	Value	Form
Aluminium oxide (CAS 1344-28-1)	TWA	1 mg/m <sup>3</sup>	Respirable fraction.
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)	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
Aluminium oxide (CAS 1344-28-1)	TWA	6 mg/m <sup>3</sup>	Decomposition aerosol.
		4 mg/m <sup>3</sup>	
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.
Toluene (CAS 108-88-3)	STEL	150 mg/m <sup>3</sup> 40 ppm	
	TWA	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
Aluminium oxide (CAS 1344-28-1)	TWA	5 mg/m <sup>3</sup>	Inhalable fraction.
		2 mg/m <sup>3</sup>	Respirable fraction.
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.
Toluene (CAS 108-88-3)	STEL	384 mg/m <sup>3</sup> 100 ppm	
	TWA	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
	TWA	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
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
Aluminium oxide (CAS 1344-28-1)	TLV	10 mg/m <sup>3</sup>	
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.

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

Components	Type	Value	Form
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
Aluminium oxide (CAS 1344-28-1)	TWA	2,5 mg/m <sup>3</sup>	Fume, total dust.
		1,2 mg/m <sup>3</sup>	Respirable dust and/or fume.
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	Form
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
Aluminium oxide (CAS 1344-28-1)	TWA	10 mg/m <sup>3</sup>	
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	Form
Aluminium oxide (CAS 1344-28-1)	STEL	5 mg/m <sup>3</sup>	Aerosol
	TWA	1,2 ppm 2 mg/m <sup>3</sup> 0,5 ppm	Aerosol Aerosol Aerosol
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
Aluminium oxide (CAS 1344-28-1)	TWA	4 mg/m <sup>3</sup>	Inhalable fraction.
		1,5 mg/m <sup>3</sup> 0,1 mg/m <sup>3</sup>	Respirable fraction.
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> 10 mg/m <sup>3</sup>	Respirable fraction. 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
Aluminium oxide (CAS 1344-28-1)	TWA	10 mg/m <sup>3</sup>	
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
Aluminium oxide (CAS 1344-28-1)	TWA	5 mg/m <sup>3</sup>	Total dust.
		2 mg/m <sup>3</sup>	Respirable dust.
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
Aluminium oxide (CAS 1344-28-1)	STEL	24 mg/m <sup>3</sup>	Fume and respirable dust.
	TWA	3 mg/m <sup>3</sup> 3 mg/m <sup>3</sup>	Respirable dust. Fume and respirable dust.
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> 2,5 mg/m <sup>3</sup>	Inhalable dust. Respirable dust.
Toluene (CAS 108-88-3)	STEL	760 mg/m <sup>3</sup> 200 ppm	
	TWA	190 mg/m <sup>3</sup> 50 ppm	

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

Components	Type	Value	Form
Aluminium oxide (CAS 1344-28-1)	TWA	4 mg/m <sup>3</sup>	Respirable dust.
		10 mg/m <sup>3</sup>	Inhalable dust.
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> 100 ppm	
	TWA	191 mg/m <sup>3</sup> 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>
		100 ppm
	TWA	192 mg/m <sup>3</sup>
		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
Aluminium oxide (CAS 1344-28-1)	200 micrograms/liter	Aluminium	Urine	*
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
Aluminium oxide (CAS 1344-28-1)	Workers	Inhalation	15,63 mg/m <sup>3</sup>	Long term exposure local effects
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
Aluminium oxide (CAS 1344-28-1)	Aqua (freshwater)	Not applicable	74,9 µg/l	
	Sewage Treatment Plant	Not applicable	20 mg/l	
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	
Toluene (CAS 108-88-3)	Soil	Not applicable	0,44 mg/kg	
	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****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. 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.

**- Other**

Wear appropriate chemical resistant clothing to prevent any 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.

**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

<b>Appearance</b>	Black pliable semi-solid with solvent odor.
<b>Physical state</b>	Liquid.
<b>Form</b>	Pliable semi-solid.
<b>Colour</b>	Black. <b>Odour</b> Solvent.
<b>Odour threshold</b>	Not available.
<b>pH</b>	Not applicable.
<b>Melting point/freezing point</b>	Not available.
<b>Initial boiling point and boiling range</b>	110 °C (230 °F)
<b>Flash point</b>	92,2 °C (198 °F) Closed cup
<b>Evaporation rate</b>	1 (Butyl acetate=1)
<b>Flammability (solid, gas)</b>	Not applicable.
<b>Upper/lower flammability or explosive limits</b>	
<b>Flammability limit - lower (%)</b>	Not available.
<b>Flammability limit - upper (%)</b>	Not available.
<b>Vapour pressure</b>	6,0 mm Hg @ 20 °C
<b>Vapour density</b>	Not applicable.
<b>Relative density</b>	0,9
<b>Solubility(ies)</b>	Negligible.
<b>Partition coefficient (n-octanol/water)</b>	Not available.
<b>Decomposition temperature</b>	Not available.
<b>Viscosity</b>	Not applicable.
<b>Explosive properties</b>	Not available.
<b>Oxidizing properties</b>	Not available.
<b>9.2. Other information</b>	No relevant additional information available.

## SECTION 10: Stability and reactivity

<b>10.1. Reactivity</b>	The product is non-reactive under normal conditions of use, storage and transport.
<b>10.2. Chemical stability</b>	Material is stable under normal conditions.
<b>10.3. Possibility of hazardous reactions</b>	Hazardous polymerisation does not occur.
<b>10.4. Conditions to avoid</b>	Flames and sparks.
<b>10.5. Incompatible materials</b>	Strong oxidising agents.
<b>10.6. Hazardous decomposition products</b>	Carbon oxides.

## SECTION 11: Toxicological information

<b>General information</b>	Occupational exposure to the substance or mixture may cause adverse effects.
<b>Information on likely routes of exposure</b>	
<b>Ingestion</b>	May cause discomfort if swallowed.
<b>Inhalation</b>	High concentrations: Vapours may cause drowsiness and dizziness.
<b>Skin contact</b>	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.
<b>Eye contact</b>	May cause eye irritation.
<b>Symptoms</b>	Irritation of eyes and mucous membranes. Symptoms include itching, burning, redness and tearing.
<b>11.1. Information on toxicological effects</b>	
<b>Acute toxicity</b>	May cause discomfort if swallowed.

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
<b>Skin corrosion/irritation</b>	May cause skin irritation.	
<b>Serious eye damage/irritation</b>	May cause eye irritation.	
<b>Respiratory sensitisation</b>	Not classified.	
<b>Skin sensitisation</b>	Not a skin sensitiser.	
<b>Germ cell mutagenicity</b>	Not available.	
<b>Carcinogenicity</b>	Not classified.	
<b>IARC Monographs. Overall Evaluation of Carcinogenicity</b>		
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>	Not available.	

## 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
<b>12.2. Persistence and degradability</b>	The product contains inorganic compounds which are not biodegradable.	
<b>12.3. Bioaccumulative potential</b>	No data available on bioaccumulation.	
<b>Partition coefficient n-octanol/water (log Kow)</b>		
Toluene (CAS 108-88-3)	2,73	
Dicumyl peroxide (CAS 80-43-3)	5,5	
<b>Bioconcentration factor (BCF)</b>	Not available.	
<b>12.4. Mobility in soil</b>	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>	The product contains volatile organic compounds which have a photochemical ozone creation potential.	

## 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 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.

### 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.