TEAM® Industrial Services

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	Valve Pack 6
Registration number	-
Synonyms	None.
Product code	901-0020
Issue date	06-March-2013
Version number	00
Revision date	06-March-2013
Supersedes date	-

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 Repr. Cat. 3;R63, 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	Possible risk of harm to the unborn child. 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. 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.

2.2. Label elements

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

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 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
Graphite	10-25	7782-42-5 231-955-3	-	-	
Classification: **DSD:** -					
CLP: -					
Quartz (SiO2)	10-25	14808-60-7 238-878-4	-	-	
Classification: **DSD:** -					
CLP: -					
Refractories, Fibers, Aluminosilicate	5-10	142844-00-6 -	-	650-017-00-8	
Classification: **DSD:** Carc. Cat. 2;R49					
CLP: Carc. 1B;H350					
Carbon fiber	<5	7440-44-0 231-153-3	-	-	
Classification: **DSD:** -					
CLP: -					
Dicumyl peroxide	<5	80-43-3 201-279-3	-	617-006-00-X	
Classification: **DSD:** O;R7, Xi;R36/38, N;R51/53					
CLP: 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	#
Classification: **DSD:** F;R11, Repr. Cat. 3;R63, Xn;R65-48/20, Xi;R38, R67					
CLP: 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. 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.

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. Remove contact lenses, if present and easy to do. 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	Irritation of eyes and mucous membranes. Symptoms include itching, burning, redness and tearing.
4.3. Indication of any immediate medical attention and special treatment needed	Be aware that symptoms of chemical pneumonia (shortness of breath) may occur several hours after exposure.

SECTION 5: Firefighting measures

General fire hazards	Combustible liquid. Intensive heat and fire may release toxic and corrosive gases.

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	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. 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. 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/m3	Respirable dust.
	STEL	10 mg/m3	Respirable dust.
Graphite (CAS 7782-42-5)	MAK	5 mg/m3	Respirable dust.
	STEL	10 mg/m3	Respirable dust.
Quartz (SiO2) (CAS 14808-60-7)	MAK	0,15 mg/m3	Respirable dust.
Toluene (CAS 108-88-3)	MAK	190 mg/m3 50 ppm	
	STEL	380 mg/m3 100 ppm	

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 (SiO2) (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 (SiO2) (CAS 14808-60-7)	TWA	0,07 mg/m3	Respirable 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.
Graphite (CAS 7782-42-5)	TWA	10 mg/m3	Respirable dust.
		10 mg/m3	Total dust.
Quartz (SiO2) (CAS 14808-60-7)	TWA	0,1 mg/m3	Respirable dust.
Refractories, Fibers, Aluminosilicate (CAS 142844-00-6)	TWA	0,3 fibers/cm3	Respirable fibers.
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.
Quartz (SiO2) (CAS 14808-60-7)	TLV	0,3 mg/m3	Total
		0,1 mg/m3	Respirable.
Refractories, Fibers, Aluminosilicate (CAS 142844-00-6)	TLV	1 fibers/cm3	Fiber.
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
Carbon fiber (CAS 7440-44-0)	TWA	3 mg/m3	Dust.
Graphite (CAS 7782-42-5)	TWA	5 mg/m3	Dust.
Quartz (SiO2) (CAS 14808-60-7)	TWA	0,1 mg/m3	Respirable 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	Form
Carbon fiber (CAS 7440-44-0)	TWA	2 mg/m3	
Graphite (CAS 7782-42-5)	TWA	2 mg/m3	
Quartz (SiO2) (CAS 14808-60-7)	TWA	0,05 mg/m3	Respirable.
Refractories, Fibers, Aluminosilicate (CAS 142844-00-6)	TWA	0,2 fibers/cm3	Respirable.
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
Carbon fiber (CAS 7440-44-0)	VME	2 mg/m3	Respirable fraction.
Graphite (CAS 7782-42-5)	VME	2 mg/m3	Respirable fraction.
Quartz (SiO2) (CAS 14808-60-7)	VME	0,1 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
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.
		10 mg/m3	Inhalable fraction.
Graphite (CAS 7782-42-5)	AGW	3 mg/m3	Respirable fraction.
		10 mg/m3	Inhalable fraction.
Toluene (CAS 108-88-3)	AGW	190 mg/m3	
		50 ppm	

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

Components	Type	Value	Form
Carbon fiber (CAS 7440-44-0)	TWA	5 mg/m3	Respirable.
		10 mg/m3	Inhalable
Graphite (CAS 7782-42-5)	TWA	5 mg/m3	Respirable.
		10 mg/m3	Inhalable
Toluene (CAS 108-88-3)	STEL	560 mg/m3	
		150 ppm	
	TWA	375 mg/m3	
		100 ppm	

Hungary. OELs. Joint Decree on Chemical Safety of Workplaces

Components	Type	Value	Form
Quartz (SiO2) (CAS 14808-60-7)	TWA	0,15 mg/m3	Respirable.
Toluene (CAS 108-88-3)	STEL	380 mg/m3	
	TWA	190 mg/m3	

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

Components	Type	Value	Form
Carbon fiber (CAS 7440-44-0)	TWA	5 mg/m3	Total dust.
		2,5 mg/m3	Respirable dust.
Graphite (CAS 7782-42-5)	TWA	5 mg/m3	Total dust.
		2,5 mg/m3	Respirable dust.
Quartz (SiO2) (CAS 14808-60-7)	TWA	0,3 mg/m3	Total dust.
		0,1 mg/m3	Respirable dust.
Refractories, Fibers, Aluminosilicate (CAS 142844-00-6)	TWA	1 fibers/cm3	Fiber.
Toluene (CAS 108-88-3)	STEL	188 mg/m3	
		50 ppm	
	TWA	94 mg/m3	
		25 ppm	

Ireland. Occupational Exposure Limits

Components	Type	Value	Form
Carbon fiber (CAS 7440-44-0)	TWA	4 mg/m3	Respirable dust.
		10 mg/m3	Total inhalable dust.
Graphite (CAS 7782-42-5)	TWA	4 mg/m3	Respirable dust.
		10 mg/m3	Total inhalable dust.
Quartz (SiO2) (CAS 14808-60-7)	TWA	0,1 mg/m3	Respirable dust.
Toluene (CAS 108-88-3)	STEL	384 mg/m3	
		100 ppm	
	TWA	192 mg/m3	
		50 ppm	

Italy. OELs

Components	Type	Value	Form
Carbon fiber (CAS 7440-44-0)	TWA	2 mg/m3	Respirable fraction.

Italy. OELs

Components	Type	Value	Form
Graphite (CAS 7782-42-5)	TWA	2 mg/m3	Respirable fraction.
Quartz (SiO2) (CAS 14808-60-7)	TWA	0,025 mg/m3	Respirable fraction.
Refractories, Fibers, Aluminosilicate (CAS 142844-00-6)	TWA	0,2 fibers/cm3	Fiber.
Toluene (CAS 108-88-3)	TWA	192 mg/m3 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/m3	Dust.
Graphite (CAS 7782-42-5)	TWA	2 mg/m3	Dust.
Refractories, Fibers, Aluminosilicate (CAS 142844-00-6)	TWA	2 mg/m3	
Toluene (CAS 108-88-3)	STEL	150 mg/m3 40 ppm	
	TWA	50 mg/m3 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/m3	Dust.
Graphite (CAS 7782-42-5)	TWA	3 mg/m3	Dust.
Quartz (SiO2) (CAS 14808-60-7)	TWA	0,1 mg/m3	Respirable fraction.
Toluene (CAS 108-88-3)	STEL	384 mg/m3 100 ppm	
	TWA	192 mg/m3 50 ppm	

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

Components	Type	Value
Toluene (CAS 108-88-3)	STEL	384 mg/m3 100 ppm
	TWA	192 mg/m3 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/m3 100 ppm
	TWA	192 mg/m3 50 ppm

Netherlands. OELs (binding)

Components	Type	Value	Form
Quartz (SiO2) (CAS 14808-60-7)	TWA	0,075 mg/m3	Respirable dust.
Refractories, Fibers, Aluminosilicate (CAS 142844-00-6)	TWA	0,5 fibers/cc	Respirable fibers.
Toluene (CAS 108-88-3)	STEL	384 mg/m3	
	TWA	150 mg/m3	

Norway. Administrative Norms for Contaminants in the Workplace

Components	Type	Value	Form
Carbon fiber (CAS 7440-44-0)	TLV	2 mg/m3	Respirable dust.

Norway. Administrative Norms for Contaminants in the Workplace

Components	Type	Value	Form
		10 mg/m3	Total dust.
Graphite (CAS 7782-42-5)	TLV	2 mg/m3	Respirable dust.
		10 mg/m3	Total dust.
Quartz (SiO2) (CAS 14808-60-7)	TLV	0,3 mg/m3	Total dust.
		0,1 mg/m3	Respirable dust.
Refractories, Fibers, Aluminosilicate (CAS 142844-00-6)	TLV	0,1 fibers/cm3	Fiber.
Toluene (CAS 108-88-3)	TLV	94 mg/m3	
		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/m3	Total dust.
		1 mg/m3	Respirable dust.
Graphite (CAS 7782-42-5)	TWA	4 mg/m3	Total dust.
		1 mg/m3	Respirable dust.
Quartz (SiO2) (CAS 14808-60-7)	TWA	2 mg/m3	Total dust.
		0,3 mg/m3	Respirable dust.
Toluene (CAS 108-88-3)	STEL	200 mg/m3	
	TWA	100 mg/m3	

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/m3
		100 ppm
	TWA	192 mg/m3
		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/m3	Respirable fraction.
Graphite (CAS 7782-42-5)	TWA	2 mg/m3	Respirable fraction.
Quartz (SiO2) (CAS 14808-60-7)	TWA	0,025 mg/m3	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/m3
		100 ppm
	TWA	192 mg/m3
		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/m3	Respirable fraction.
		10 mg/m3	Total
Graphite (CAS 7782-42-5)	TWA	2 mg/m3	Respirable fraction.
		10 mg/m3	Total
Quartz (SiO2) (CAS 14808-60-7)	TWA	0,1 mg/m3	
Toluene (CAS 108-88-3)	TWA	192 mg/m3	
		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 (SiO2) (CAS 14808-60-7)	TWA	0,15 mg/m3	Respirable fraction.
Toluene (CAS 108-88-3)	TWA	192 mg/m3 50 ppm	

Spain

Components	Type	Value	Form
Graphite (CAS 7782-42-5)	TWA (VLA-ED)	2 mg/m3	Dust.

Spain. Occupational Exposure Limits

Components	Type	Value	Form
Carbon fiber (CAS 7440-44-0)	TWA	2 mg/m3	Dust.
Quartz (SiO2) (CAS 14808-60-7)	TWA	0,1 mg/m3	Respirable fraction.
Toluene (CAS 108-88-3)	STEL	384 mg/m3 100 ppm	
	TWA	192 mg/m3 50 ppm	

Sweden. Occupational Exposure Limit Values

Components	Type	Value	Form
Carbon fiber (CAS 7440-44-0)	TWA	0,2 fibers/mL	
		5 mg/m3	Total dust.
Graphite (CAS 7782-42-5)	TWA	0,2 fibers/mL	
		5 mg/m3	Total dust.
Quartz (SiO2) (CAS 14808-60-7)	TWA	0,1 mg/m3	Respirable dust.
Toluene (CAS 108-88-3)	STEL	384 mg/m3 100 ppm	
	TWA	192 mg/m3 50 ppm	

Switzerland. SUVA Grenzwerte am Arbeitsplatz

Components	Type	Value	Form
Carbon fiber (CAS 7440-44-0)	TWA	5 mg/m3	Inhalable dust.
		2,5 mg/m3	Respirable dust.
Graphite (CAS 7782-42-5)	TWA	5 mg/m3	Inhalable dust.
		2,5 mg/m3	Respirable dust.
Quartz (SiO2) (CAS 14808-60-7)	TWA	0,15 mg/m3	Respirable dust.
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.
		10 mg/m3	Inhalable dust.
Quartz (SiO2) (CAS 14808-60-7)	TWA	0,1 mg/m3	Respirable.
Toluene (CAS 108-88-3)	STEL	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	192 mg/m3
		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/m3	Long term exposure systemic effects
Graphite (CAS 7782-42-5)	Workers	Inhalation	1,2 mg/m3	Long term exposure local effects
Toluene (CAS 108-88-3)	Workers	Dermal	384 mg/kg/day	Long term Systemic effects
		Inhalation	384 mg/m3	Acute Local effects
		Inhalation	384 mg/m3	Acute Systemic effects
		Inhalation	192 mg/m3	Long term Local effects
		Inhalation	192 mg/m3	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

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.

- Other 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.

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 Blackish/grey pliable semi-solid with solvent odor.

Physical state Liquid.

Form Pliable semi-solid.

Colour Blackish/grey.

Odour	Solvent. **Odour**
threshold	Not available.
pH	Not applicable.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
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.
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.

11.1. Information on toxicological effects

Acute toxicity	May cause discomfort if swallowed. May cause skin and eye irritation. May cause central nervous system effects.

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

Components	Species	Test results
Dicumyl peroxide (CAS 80-43-3)		
Acute		
Oral		
LD50	Rat	4100 mg/kg
Toluene (CAS 108-88-3)		
Acute		
Dermal		
LD50	Rabbit	14,1 ml/kg
Inhalation		
LC50	Rat	49000 mg/m³, 4 Hours
Oral		
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

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.

Reproductive toxicity Suspected of damaging the unborn child.

Specific target organ toxicity - single exposure Not available.

Specific target organ toxicity - repeated exposure Not available.

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)			
Aquatic			
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.

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.

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied.

EU waste code 08 04 09*

Disposal methods/information Disposal recommendations are based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

SECTION 14: Transport information

ADR

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

RID

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

ADN

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

IATA

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

IMDG

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

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

SECTION 15: Regulatory information

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

EU regulations

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

Not listed.

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

Not listed.

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

Not listed.

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

Not listed.

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

Not listed.

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

Not listed.

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

Not listed.

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

Not listed.

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

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

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

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 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. 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. H336 - May cause drowsiness or dizziness. H350 - May cause cancer. 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.