

Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

1.1 Product identifier

Product Name • **NLC Modified**
Synonyms • Thread Compound, Sealant, Anti-Seize, Lubricant

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

Relevant identified use(s) • Anti-Seize, Lubricant, Sealant, sealant and lubricant for API casing, tubing, and line pipe connections

1.3 Details of the supplier of the safety data sheet

Manufacturer • Topco Oilsite Products Ltd.
Bay 7, 3401 - 19th Street N.E.
Calgary, Alberta T2E 6S8
Canada
www.topcooilsite.com
msds@topcooilsite.com

Telephone (General) • 403-219-0255

1.4 Emergency telephone number

Manufacturer • 403-219-0255 - Manufacturer
Manufacturer • 1-800-332-1414 - Poison & Drug Information Service (Alberta Health Services)

Section 2: Hazards Identification

EU/EEC

According to: Regulation (EC) No 1272/2008 (CLP)/REACH 1907/2006 [amended by 2015/830]

2.1 Classification of the substance or mixture

CLP • Carcinogenicity 2 - H351
Hazardous to the aquatic environment Acute 1 - H400
Hazardous to the aquatic environment Chronic 1 - H410

2.2 Label Elements

CLP

WARNING



Hazard statements • H351 - Suspected of causing cancer.
H400 - Very toxic to aquatic life
H410 - Very toxic to aquatic life with long lasting effects

Precautionary statements

Prevention • P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.

P273 - Avoid release to the environment.

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

Response • P308+P313 - IF exposed or concerned: Get medical advice/attention.
P391 - Collect spillage.

Storage/Disposal • P405 - Store locked up.

P501 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

2.3 Other Hazards

CLP • According to Regulation (EC) No. 1272/2008 (CLP) this material is considered hazardous.

UN GHS Revision 4

According to: UN Globally Harmonized System of Classification and Labelling of Chemicals (GHS): Fourth Revised Edition

2.1 Classification of the substance or mixture

UN GHS

- Skin Mild Irritation 3
- Carcinogenicity 2
- Reproductive Toxicity 2
- Hazardous to the aquatic environment Acute 1
- Hazardous to the aquatic environment Chronic 1

2.2 Label elements

UN GHS

WARNING



Hazard statements • Causes mild skin irritation
Suspected of causing cancer.
Very toxic to aquatic life
Very toxic to aquatic life with long lasting effects

Precautionary statements

Prevention • Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Avoid release to the environment.
Wear protective gloves/protective clothing/eye protection/face protection.

Response • IF exposed or concerned: Get medical advice/attention.
Collect spillage.

Storage/Disposal • Store locked up.

Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

2.3 Other hazards

UN GHS • According to the Globally Harmonized System for Classification and Labeling (GHS) this product is considered hazardous

United States (US)

According to: OSHA 29 CFR 1910.1200 HCS

2.1 Classification of the substance or mixture

- OSHA HCS 2012
- Carcinogenicity 2
 - Reproductive Toxicity 2

2.2 Label elements

OSHA HCS 2012

WARNING



- Hazard statements**
- Suspected of causing cancer.
 - Suspected of damaging fertility or the unborn child.

Precautionary statements

- Prevention**
- Obtain special instructions before use.
 - Do not handle until all safety precautions have been read and understood.
 - Wear protective gloves/protective clothing/eye protection/face protection.

- Response**
- IF exposed or concerned: Get medical advice/attention.

- Storage/Disposal**
- Store locked up.
 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

2.3 Other hazards

- OSHA HCS 2012
- Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.

Canada

According to: WHMIS 2015

2.1 Classification of the substance or mixture

- WHMIS 2015
- Carcinogenicity 2
 - Reproductive Toxicity 2

2.2 Label elements

WHMIS 2015

WARNING



- Hazard statements**
- Suspected of causing cancer.
 - Suspected of damaging fertility or the unborn child.

Precautionary statements

- Prevention**
- Obtain special instructions before use.
 - Do not handle until all safety precautions have been read and understood.
 - Wear protective gloves/protective clothing/eye protection/face protection.

- Response**
- IF exposed or concerned: Get medical advice/attention.

- Storage/Disposal**
- Store locked up.
 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

2.3 Other hazards

Section 3 - Composition/Information on Ingredients

3.1 Substances

- Material does not meet the criteria of a substance.

3.2 Mixtures

Composition					
Chemical Name	Identifiers	%	LD50/LC50	Classifications According to Regulation/Directive	Comments
Crystalline silica	CAS:14808-60-7 EC Number:238-878-4	20.15% TO 64.65%	NDA	EU CLP: Carc. 1A, H350i; STOT RE 1, H372 (Lungs/Inhl) UN GHS Revision 4: Carc. 1A; STOT RE 1 (Lungs/Inhl) OSHA HCS 2012: Carc. 1A; STOT RE 1 (Lungs/Inhl) WHMIS 2015: Carc. 1A; STOT RE 1 (Lungs/Inhl)	NDA
Zinc powder, stabilized	CAS:7440-66-6 EC Number:231-175-3	19% TO 25%	NDA	EU CLP: Annex VI, Table 3.1: Aquatic Acute 1, H400; Aquatic Chronic 1, H410 UN GHS Revision 4: Skin Irrit. 3; Aquatic Acute 1; Aquatic Chronic 1 OSHA HCS 2012: Comb. Dust; Hazard Not Otherwise Classified - Health Hazard - Metal fume fever WHMIS 2015: Comb. Dust; Hazard Not Otherwise Classified - Health Hazard - Metal fume fever	NDA
Graphite	CAS:7782-42-5 EC Number:231-955-3	6% TO 19%	NDA	EU CLP: STOT RE 1 (Lungs / Inhl), H372 UN GHS Revision 4: STOT RE 1 (Lungs / Inhl) OSHA HCS 2012: Comb. Dust; STOT RE 1 (Lungs / Inhl) WHMIS 2015: Comb. Dust; STOT RE 1 (Lungs / Inhl)	NDA
Talc	CAS:14807-96-6 EC Number:238-877-9	3% TO 15%	NDA	EU CLP: STOT RE 1 (Lungs / Inhl), H372 UN GHS Revision 4: STOT RE 1 (Lungs / Inhl); Skin Irrit. 3 OSHA HCS 2012: STOT RE 1 (Lungs / Inhl) WHMIS 2015: STOT RE 1 (Lungs / Inhl)	NDA
Ethene, homopolymer	CAS:9002-88-4	1% TO 10%	Ingestion/Oral-Rat LD50 • >8 g/kg Inhalation-Rat LC50 • 75.5 g/m ³ 30 Minute(s)	EU CLP: Not Classified UN GHS Revision 4: Not Classified OSHA HCS 2012: Not Classified WHMIS 2015: Not Classified	NDA
Copper oxide	CAS:1317-38-0 EU Index:029-016-00-6 EINECS:215-269-1	0.9% TO 10%	Ingestion/Oral-Rat LD50 • 470 mg/kg	EU CLP: Annex VI, Table 3.1: Aquatic Acute 1, H400; Aquatic Chronic 1, H410 UN GHS Revision 4: Acute Tox. 4 (Orl); Aquatic Acute 1 (M=10); Aquatic Chronic 1 (M=1) OSHA HCS 2012: Acute Tox. 4 (Orl); Hazard Not Otherwise Classified - Health Hazard - Metal Fume Fever WHMIS 2015: Acute Tox. 4 (Orl); Hazard Not Otherwise Classified - Health Hazard - Metal Fume Fever	NDA
Naturally occurring mineral (inert ash)	CAS:999999-99-4	0.5% TO 8%	NDA	EU CLP: Not Classified UN GHS Revision 4: Not Classified	NDA

				OSHA HCS 2012: Not Classified WHMIS 2015: Not Classified	
Chlorite	CAS: 1318-59-8 EINECS: 215-285-9	0.5% TO 4.5%	NDA	EU CLP: Not Classified UN GHS Revision 4: Not Classified OSHA HCS 2012: Not Classified WHMIS 2015: Not Classified	NDA
Asphalt	CAS: 8052-42-4 EINECS: 232-490-9	1.4% TO 4.41%	Ingestion/Oral-Rat LD50 • >5000 mg/kg Skin-Rabbit LD50 • 2000 mg/kg	EU CLP: Carc. 2, H351 UN GHS Revision 4: Carc. 2 (Dermal) OSHA HCS 2012: Carc. 2 (Dermal) WHMIS 2015: Carc. 2 (Dermal)	NDA
Dolomite	CAS: 16389-88-1 EINECS: 240-440-2	0.25% TO 1.5%		EU CLP: Not Classified UN GHS Revision 4: Not Classified OSHA HCS 2012: Not Classified WHMIS 2015: Not Classified	NDA
Zinc O,O-bis(mixed iso-butyl and pentyl) phosphorodithioate	CAS: 68457-79-4 EINECS: 270-608-0	0.357% TO 1.12455%	NDA	EU CLP: Not Classified UN GHS Revision 4: Acute Tox. 5 (Orl) OSHA HCS 2012: Not Classified WHMIS 2015: Not Classified	NDA
Zinc oxide	CAS: 1314-13-2 EC Number: 215-222-5 EU Index: 030-013-00-7	0.4% TO 1%	Ingestion/Oral-Rat LD50 • >5000 mg/kg	EU CLP: Annex VI, Table 3.1: Aquatic Acute 1, H400; Aquatic Chronic 1, H410 UN GHS Revision 4: Eye Irrit. 2B; Muta. 2 (Inhl); Repr. 2 (Orl); Skin Irrit. 3; Aquatic Acute 1, H400 (M=10); Aquatic Chronic 1, H410 (M=1) OSHA HCS 2012: Eye Irrit. 2B; Muta. 2 (Inhl); Repr. 2 (Orl); Hazard Not Otherwise Classified - Health Hazard - Metal fume fever WHMIS 2015: Eye Irrit. 2B; Muta. 2 (Inhl); Repr. 2 (Orl); Hazard Not Otherwise Classified - Health Hazard - Metal fume fever	NDA
Carbonic acid, magnesium salt (1:1)	CAS: 546-93-0 EC Number: 208-915-9	0.05% TO 0.75%	Ingestion/Oral-Rat LD50 • 8000 mg/kg	EU CLP: Not Classified UN GHS Revision 4: Not Classified OSHA HCS 2012: Not Classified WHMIS 2015: Not Classified	NDA
Mineral oil, white	CAS: 8042-47-5 EC Number: 232-455-8	0.01% TO 0.5%	Ingestion/Oral-Rat LD50 • >5000 mg/kg	EU CLP: Not Classified UN GHS Revision 4: Asp. Tox. 2 OSHA HCS 2012: Not Classified WHMIS 2015: Not Classified	NDA
Lead, powder	CAS: 7439-92-1 EC Number: 231-100-4	0% TO 0.0005%	NDA	EU CLP: Union workplace exposure limit OSHA HCS 2012: Exposure limit	NDA
Iron	CAS: 7439-89-6 EC Number: 231-096-4	0% TO 0.0005%	NDA	EU CLP: Union workplace exposure limit OSHA HCS 2012: Exposure limit	NDA
Copper	CAS: 7440-50-8 EC Number: 231-159-6	0% TO 0.00025%	NDA	EU CLP: Union workplace exposure limit OSHA HCS 2012: Exposure limit	NDA
Cadmium (pyrophoric)	CAS: 7440-43-9 EC Number: 231-152-8	0% TO 0.00025%	Ingestion/Oral-Rat LD50 • 2330 mg/kg	EU CLP: Union workplace exposure limit OSHA HCS 2012: Exposure limit	NDA

See Section 16 for full text of H-statements.

Section 4 - First Aid Measures

4.1 Description of first aid measures

- Inhalation** • Move victim to fresh air. Administer oxygen if breathing is difficult. Give artificial respiration if victim is not breathing. If signs/symptoms continue, get medical attention.
- Skin** • In case of contact with substance, immediately flush skin with running water for at least 20 minutes. Get medical attention if symptoms occur.
- Eye** • In case of contact with substance, immediately flush eyes with running water for at least 20 minutes. Get medical attention if symptoms occur.
- Ingestion** • Obtain medical attention immediately if ingested.

4.2 Most important symptoms and effects, both acute and delayed

- Refer to Section 11 - Toxicological Information.

4.3 Indication of any immediate medical attention and special treatment needed

- Notes to Physician** • All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Section 5 - Firefighting Measures

5.1 Extinguishing media

- Suitable Extinguishing Media** • In case of fire use media as appropriate for surrounding fire.
- Unsuitable Extinguishing Media** • No data available

5.2 Special hazards arising from the substance or mixture

- Unusual Fire and Explosion Hazards** • None
- Hazardous Combustion Products** • No data available

5.3 Advice for firefighters

- Structural firefighters' protective clothing will only provide limited protection. Wear positive pressure self-contained breathing apparatus (SCBA).

Section 6 - Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

- Personal Precautions** • Ventilate the area. Do not walk through spilled material. Wear appropriate personal protective equipment, avoid direct contact.
- Emergency Procedures** • Keep unauthorized personnel away. Stay upwind.

6.2 Environmental precautions

- Avoid run off to waterways and sewers.

6.3 Methods and material for containment and cleaning up

- Containment/Clean-up Measures** • Carefully shovel or sweep up spilled material and place in suitable container.

6.4 Reference to other sections

- Refer to Section 8 - Exposure Controls/Personal Protection and Section 13 - Disposal Considerations.

Section 7 - Handling and Storage

7.1 Precautions for safe handling

- Handling** • Use only with adequate ventilation. Use good safety and industrial hygiene practices. Wear appropriate personal protective equipment, avoid direct contact. Avoid contact with skin, eyes, and clothing. Do not eat, drink or smoke when using this product. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco.

7.2 Conditions for safe storage, including any incompatibilities

- Storage** • Keep container tightly closed. Store in a cool, dry, well-ventilated place.

7.3 Specific end use(s)

- Refer to Section 1.2 - Relevant identified uses.

Section 8 - Exposure Controls/Personal Protection

8.1 Control parameters

Exposure Limits/Guidelines						
	Result	ACGIH	Argentina	Australia	Canada Alberta	Canada British Columbia
Copper (7440-50-8)	TWAs	0.2 mg/m3 TWA (fume)	0.2 mg/m3 TWA [CMP] (fume); 1 mg/m3 TWA [CMP] (dust and mist)	1 mg/m3 TWA (dust and mist); 0.2 mg/m3 TWA (fume)	0.2 mg/m3 TWA (fume); 1 mg/m3 TWA (dust and mist)	1 mg/m3 TWA (dust and mist); 0.2 mg/m3 TWA (fume)
Cadmium (pyrophoric)	TWAs	0.01 mg/m3 TWA; 0.002 mg/m3 TWA (respirable particulate matter)	0.01 mg/m3 TWA [CMP]	0.01 mg/m3 TWA	0.01 mg/m3 TWA	0.01 mg/m3 TWA; 0.002 mg/m3 TWA (respirable)
Lead, powder (7439-92-1)	TWAs	0.05 mg/m3 TWA	0.05 mg/m3 TWA [CMP]	0.15 mg/m3 TWA (dust and fume)	0.05 mg/m3 TWA	0.05 mg/m3 TWA
Carbonic acid, magnesium salt (1:1) (546-93-0)	TWAs	Not established	Not established	10 mg/m3 TWA (containing no asbestos and <1% crystalline silica, inhalable dust, listed under Magnesite)	Not established	10 mg/m3 TWA (total dust, listed under Magnesite); 3 mg/m3 TWA (respirable fraction, listed under Magnesite)
Zinc oxide (1314-13-2)	STELs	10 mg/m3 STEL (respirable particulate matter)	10 mg/m3 STEL [CMP-CPT] (fume)	10 mg/m3 STEL (fume)	10 mg/m3 STEL (respirable)	10 mg/m3 STEL (respirable)
	TWAs	2 mg/m3 TWA (respirable particulate matter)	5 mg/m3 TWA [CMP] (fume); 10 mg/m3 TWA [CMP] (dust)	10 mg/m3 TWA (containing no asbestos and <1% crystalline silica, inhalable dust); 5 mg/m3 TWA (fume)	2 mg/m3 TWA (respirable)	2 mg/m3 TWA (respirable)
Copper oxide	TWAs	1 mg/m3 TWA (dust and mist, as Cu) <i>as Copper compounds</i>	Not established	Not established	Not established	Not established
Asphalt (8052-42-4)	TWAs	0.5 mg/m3 TWA (fume, inhalable particulate matter, as benzene-soluble aerosol)	0.5 mg/m3 TWA [CMP] (Bitumen, inhalable fraction, as soluble aerosol in benzene)	5 mg/m3 TWA (fume)	5 mg/m3 TWA (Petroleum; Bitumen, fume)	0.5 mg/m3 TWA (inhalable fume, as Benzene-soluble aerosol)
Talc (14807-96-6)	TWAs	2 mg/m3 TWA (particulate matter containing no asbestos and <1% crystalline silica, respirable particulate matter)	2 mg/m3 TWA [CMP] (respirable fraction, particulate matter containing no asbestos and less than 1% crystalline silica)	2.5 mg/m3 TWA (containing no asbestos fibers)	2 mg/m3 TWA (respirable particulate)	2 mg/m3 TWA (particulate matter containing no Asbestos and <1% Crystalline silica, respirable particulate)
Graphite	TWAs	2 mg/m3 TWA (all forms except graphite fibers, respirable particulate matter)	2 mg/m3 TWA [CMP] (all forms except fibers, respirable fraction)	3 mg/m3 TWA (containing no asbestos and <1% crystalline silica; all forms except fibres; natural and synthetic, respirable dust)	2 mg/m3 TWA (all forms except Graphite fibres, respirable)	2 mg/m3 TWA (all forms except Graphite fibres, respirable)
Crystalline silica (14808-60-7)	TWAs	0.025 mg/m3 TWA (respirable particulate matter)	0.05 mg/m3 TWA [CMP] (respirable fraction)	0.1 mg/m3 TWA (respirable dust)	0.025 mg/m3 TWA (respirable particulate)	0.025 mg/m3 TWA (respirable)
Exposure Limits/Guidelines (Con't.)						
	Result	Canada Manitoba	Canada New Brunswick	Canada Northwest Territories	Canada Nova Scotia	Canada Nunavut
Copper (7440-50-8)	TWAs	0.2 mg/m3 TWA (fume)	0.2 mg/m3 TWA (fume); 1 mg/m3 TWA (dust and mist)	0.2 mg/m3 TWA (fume); 1 mg/m3 TWA (dust and mist)	0.2 mg/m3 TWA (fume)	0.2 mg/m3 TWA (fume); 1 mg/m3 TWA (dust and mist)

	STELs	Not established	Not established	3 mg/m3 STEL (dust and mist); 0.6 mg/m3 STEL (fume)	Not established	3 mg/m3 STEL (dust and mist); 0.6 mg/m3 STEL (fume)
Cadmium (pyrophoric)	TWAs	0.002 mg/m3 TWA (respirable particulate matter); 0.01 mg/m3 TWA	0.01 mg/m3 TWA (inhalable fraction); 0.002 mg/m3 TWA (respirable fraction)	0.01 mg/m3 TWA (total fraction); 0.002 mg/m3 TWA (respirable fraction)	0.002 mg/m3 TWA (respirable particulate matter); 0.01 mg/m3 TWA	0.01 mg/m3 TWA (total fraction); 0.002 mg/m3 TWA (respirable fraction)
	STELs	Not established	Not established	0.03 mg/m3 STEL (total fraction); 0.006 mg/m3 STEL (respirable fraction)	Not established	0.03 mg/m3 STEL (total fraction); 0.006 mg/m3 STEL (respirable fraction)
Lead, powder (7439-92-1)	TWAs	0.05 mg/m3 TWA	0.05 mg/m3 TWA	0.05 mg/m3 TWA	0.05 mg/m3 TWA	0.05 mg/m3 TWA
	STELs	Not established	Not established	0.15 mg/m3 STEL	Not established	0.15 mg/m3 STEL
Carbonic acid, magnesium salt (1:1) (546-93-0)	TWAs	Not established	10 mg/m3 TWA (particulate matter containing no Asbestos and <1% Crystalline silica)	10 mg/m3 TWA (listed under Magnesite)	Not established	10 mg/m3 TWA (listed under Magnesite)
	STELs	Not established	Not established	20 mg/m3 STEL (listed under Magnesite)	Not established	20 mg/m3 STEL (listed under Magnesite)
Zinc oxide (1314-13-2)	STELs	10 mg/m3 STEL (respirable particulate matter)	10 mg/m3 STEL (fume)	10 mg/m3 STEL (dust and fume; respirable fraction)	10 mg/m3 STEL (respirable particulate matter)	10 mg/m3 STEL (dust and fume; respirable fraction)
	TWAs	2 mg/m3 TWA (respirable particulate matter)	10 mg/m3 TWA (particulate matter containing no Asbestos and <1% Crystalline silica, dust); 5 mg/m3 TWA (fume)	2 mg/m3 TWA (dust and fume; respirable fraction)	2 mg/m3 TWA (respirable particulate matter)	2 mg/m3 TWA (dust and fume; respirable fraction)
Copper oxide	TWAs	1 mg/m3 TWA (dust and mist, as Cu) <i>as Copper compounds</i>	Not established	Not established	1 mg/m3 TWA (dust and mist, as Cu) <i>as Copper compounds</i>	Not established
Asphalt (8052-42-4)	TWAs	0.5 mg/m3 TWA (fume, inhalable particulate matter, as Benzene-soluble aerosol)	5 mg/m3 TWA (petroleum fumes)	0.5 mg/m3 TWA (Bitumen, fume, as Benzene soluble aerosol (inhalable fraction))	0.5 mg/m3 TWA (fume, inhalable particulate matter, as Benzene-soluble aerosol)	0.5 mg/m3 TWA (Bitumen, fume, as Benzene soluble aerosol (inhalable fraction))
	STELs	Not established	Not established	1.5 mg/m3 STEL (Bitumen, fume, as Benzene soluble aerosol (inhalable fraction))	Not established	1.5 mg/m3 STEL (Bitumen, fume, as Benzene soluble aerosol (inhalable fraction))
Talc (14807-96-6)	TWAs	2 mg/m3 TWA (particulate matter containing no Asbestos and <1% Crystalline silica,, particulate matter, respirable particulate matter)	2 mg/m3 TWA (particulate matter containing no Asbestos and <1% Crystalline silica, respirable fraction)	2 mg/m3 TWA (respirable fraction)	2 mg/m3 TWA (particulate matter containing no Asbestos and <1% Crystalline silica,, particulate matter, respirable particulate matter)	2 mg/m3 TWA (respirable fraction)
Graphite	TWAs	2 mg/m3 TWA (all forms except Graphite fibers, respirable particulate matter)	2 mg/m3 TWA (all forms except graphite fibres)	2 mg/m3 TWA (natural, all forms, except Graphite fibres, respirable fraction)	2 mg/m3 TWA (all forms except Graphite fibers, respirable particulate matter)	2 mg/m3 TWA (natural, all forms, except Graphite fibres, respirable fraction)
	STELs	Not established	Not established	4 mg/m3 STEL (natural, all forms, except Graphite fibres, respirable fraction)	Not established	4 mg/m3 STEL (natural, all forms, except Graphite fibres, respirable fraction)

Crystalline silica (14808-60-7)	TWAs	0.025 mg/m ³ TWA (respirable particulate matter)	0.1 mg/m ³ TWA (respirable fraction)	0.05 mg/m ³ TWA (respirable fraction, listed under Silica - crystalline)	0.025 mg/m ³ TWA (respirable particulate matter)	0.05 mg/m ³ TWA (respirable fraction, listed under Silica - crystalline)
Exposure Limits/Guidelines (Con't.)						
	Result	Canada Ontario	Canada Quebec	Canada Saskatchewan	Canada Yukon	China
Copper (7440-50-8)	STELs	Not established	Not established	0.6 mg/m ³ STEL (fume); 3 mg/m ³ STEL (dust and mist)	0.2 mg/m ³ STEL (fume); 2 mg/m ³ STEL (dust and mist)	2.5 mg/m ³ STEL (dust); 0.6 mg/m ³ STEL (fume)
	TWAs	0.2 mg/m ³ TWA (fume); 1 mg/m ³ TWA (dust and mist)	0.2 mg/m ³ TWAEV (fume); 1 mg/m ³ TWAEV (dust and mist)	0.2 mg/m ³ TWA (fume); 1 mg/m ³ TWA (dust and mist)	0.2 mg/m ³ TWA (fume); 1 mg/m ³ TWA (dust and mist)	1 mg/m ³ TWA (dust); 0.2 mg/m ³ TWA (fume)
Cadmium (pyrophoric)	STELs	Not established	Not established	0.03 mg/m ³ STEL (total); 0.006 mg/m ³ STEL (respirable fraction)	0.15 mg/m ³ STEL (dust)	0.02 mg/m ³ STEL
	TWAs	0.01 mg/m ³ TWA; 0.002 mg/m ³ TWA (respirable)	0.025 mg/m ³ TWAEV	0.01 mg/m ³ TWA (total); 0.002 mg/m ³ TWA (respirable fraction)	0.05 mg/m ³ TWA (dust)	0.01 mg/m ³ TWA
Lead, powder (7439-92-1)	STELs	Not established	Not established	0.15 mg/m ³ STEL	0.45 mg/m ³ STEL (dust and fume)	0.15 mg/m ³ STEL (dust); 0.09 mg/m ³ STEL (fume)
	TWAs	0.05 mg/m ³ TWA (designated substances regulation); 0.05 mg/m ³ TWA (applies to workplaces to which the designated substances regulation does not apply)	0.05 mg/m ³ TWAEV	0.05 mg/m ³ TWA	0.15 mg/m ³ TWA (dust and fume)	0.05 mg/m ³ TWA (dust); 0.03 mg/m ³ TWA (fume)
Carbonic acid, magnesium salt (1:1) (546-93-0)	TWAs	Not established	10 mg/m ³ TWAEV (containing no Asbestos and <1% Crystalline silica, total dust, listed under Magnesite)	Not established	Not established	Not established
Dolomite (16389-88-1)	STELs	Not established	Not established	Not established	Not established	16 mg/m ³ STEL (total dust); 8 mg/m ³ STEL (respirable dust)
	TWAs	Not established	Not established	Not established	Not established	8 mg/m ³ TWA (total dust); 4 mg/m ³ TWA (respirable dust)
Zinc oxide (1314-13-2)	STELs	10 mg/m ³ STEL (respirable)	10 mg/m ³ STEV (fume)	10 mg/m ³ STEL (dust and fume, respirable fraction)	10 mg/m ³ STEL (fume)	5 mg/m ³ STEL
	TWAs	2 mg/m ³ TWA (respirable)	10 mg/m ³ TWAEV (containing no Asbestos and <1% Crystalline silica, total dust); 5 mg/m ³ TWAEV (fume)	2 mg/m ³ TWA (dust and fume, respirable fraction)	5 mg/m ³ TWA (fume); 30 mppcf TWA (dust); 10 mg/m ³ TWA (dust)	3 mg/m ³ TWA
Ethene, homopolymer (9002-88-4)	STELs	Not established	Not established	Not established	Not established	10 mg/m ³ STEL (total dust)
	TWAs	Not established	Not established	Not established	Not established	5 mg/m ³ TWA (total dust)
Asphalt (8052-42-4)	STELs	Not established	Not established	1.5 mg/m ³ STEL (fume and inhalable fraction, as Benzene soluble aerosol)	10 mg/m ³ STEL (fume)	12.5 mg/m ³ STEL (fume, as Benzene soluble matter)

	TWAs	0.5 mg/m3 TWA (fume, inhalable, as Benzene-soluble aerosol)	5 mg/m3 TWAEV (fume)	0.5 mg/m3 TWA (fume and inhalable fraction, as Benzene soluble aerosol)	5 mg/m3 TWA (fume)	5 mg/m3 TWA (fume, as Benzene soluble matter)
Talc (14807-96-6)	STELs	Not established	Not established	Not established	Not established	6 mg/m3 STEL (free SiO2 <10%, total dust); 2 mg/m3 STEL (free SiO2 <10%, respirable dust)
	TWAs	2 mg/m3 TWA (containing no Asbestos and <1% Crystalline silica, respirable)	3 mg/m3 TWAEV (respirable dust)	2 mg/m3 TWA (respirable fraction)	20 mppcf TWA	3 mg/m3 TWA (free SiO2 <10%, total dust); 1 mg/m3 TWA (free SiO2 <10%, respirable dust)
Graphite	STELs	Not established	Not established	4 mg/m3 STEL (natural, except Graphite fibres, respirable fraction)	Not established	8 mg/m3 STEL (total dust); 4 mg/m3 STEL (respirable dust)
	TWAs	2 mg/m3 TWA (except Graphite fibres, respirable)	2 mg/m3 TWAEV (containing no Asbestos and <1% Crystalline silica, except Graphite fibres, respirable dust)	2 mg/m3 TWA (natural, except Graphite fibres, respirable fraction)	20 mppcf TWA; 30 mppcf TWA (synthetic); 10 mg/m3 TWA (synthetic)	4 mg/m3 TWA (total dust); 2 mg/m3 TWA (respirable dust)
Crystalline silica (14808-60-7)	STELs	Not established	Not established	Not established	Not established	1.4 mg/m3 STEL (containing 50-80% free SiO2, total dust); 0.6 mg/m3 STEL (containing 50-80% free SiO2, respirable dust); 2 mg/m3 STEL (containing 10-50% free SiO2, total dust); 1.4 mg/m3 STEL (containing 10-50% free SiO2, respirable dust); 1 mg/m3 STEL (containing >80% free SiO2, total dust); 0.4 mg/m3 STEL (containing >80% free SiO2, respirable dust)
	TWAs	0.10 mg/m3 TWA (designated substances regulation, respirable, listed under Silica, crystalline)	0.1 mg/m3 TWAEV (respirable dust)	0.05 mg/m3 TWA (respirable fraction, listed under Silica - crystalline (Trydimite removed))	300 particle/mL TWA (listed under Silica - Quartz, crystalline)	0.7 mg/m3 TWA (containing 50-80% free SiO2, total dust); 0.3 mg/m3 TWA (containing 50-80% free SiO2, respirable dust); 1 mg/m3 TWA (containing 10-50% free SiO2, total dust); 0.7 mg/m3 TWA (containing 10-50% free SiO2, respirable dust); 0.5 mg/m3 TWA (containing >80% free SiO2, total dust); 0.2 mg/m3 TWA (containing >80% free SiO2, respirable dust)
Exposure Limits/Guidelines (Con't.)						
	Result	China Highly Toxic Goods	Egypt	France	Germany DFG	Germany TRGS
Copper (7440-50-8)	STELs	Not established	Not established	2 mg/m3 STEL [VLCT] (dust, as Cu)	Not established	Not established

	TWAs	Not established	Not established	0.2 mg/m ³ TWA [VME] (fume); 1 mg/m ³ TWA [VME] (dust, as Cu)	Not established	Not established
	Ceilings	Not established	Not established	Not established	0.02 mg/m ³ Peak (respirable fraction)	Not established
	MAKs	Not established	Not established	Not established	0.01 mg/m ³ TWA MAK (including inorganic copper compounds, respirable fraction)	Not established
Cadmium (pyrophoric)	TWAs	0.01 mg/m ³ TWA	Not established	0.05 mg/m ³ TWA [VME]	Not established	Not established
	STELs	0.02 mg/m ³ STEL	Not established	Not established	Not established	Not established
Lead, powder (7439-92-1)	TWAs	Not established	Not established	0.1 mg/m ³ TWA [VME] (restrictive limit)	Not established	Not established
	Ceilings	0.05 mg/m ³ Ceiling (dust); 0.03 mg/m ³ Ceiling (fume)	Not established	Not established	Not established	Not established
Mineral oil, white (8042-47-5)	TWAs	Not established	Not established	Not established	Not established	5 mg/m ³ TWA AGW (The risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed, respirable fraction, exposure factor 4)
	Ceilings	Not established	Not established	Not established	20 mg/m ³ Peak (respirable fraction)	Not established
	MAKs	Not established	Not established	Not established	5 mg/m ³ TWA MAK (respirable fraction)	Not established
Carbonic acid, magnesium salt (1:1) (546-93-0)	TWAs	Not established	Not established	10 mg/m ³ TWA [VME]	Not established	Not established
Zinc oxide (1314-13-2)	STELs	Not established	10 mg/m ³ STEL (fume)	Not established	Not established	Not established
	TWAs	Not established	Not established	5 mg/m ³ TWA [VME] (fume); 10 mg/m ³ TWA [VME] (dust)	Not established	Not established
Graphite (7782-42-5)	TWAs	Not established	Not established	2 mg/m ³ TWA [VME] (alveolar fraction)	Not established	Not established
	MAKs	Not established	Not established	Not established	1.5 mg/m ³ TWA MAK (respirable fraction); 4 mg/m ³ TWA MAK (inhalable fraction)	Not established
Zinc powder, stabilized (7440-66-6)	Ceilings	Not established	Not established	Not established	0.4 mg/m ³ Peak (respirable fraction); 4 mg/m ³ Peak (inhalable fraction)	Not established
	MAKs	Not established	Not established	Not established	0.1 mg/m ³ TWA MAK (respirable fraction); 2 mg/m ³ TWA MAK (inhalable fraction)	Not established
Crystalline silica (14808-60-7)	TWAs	Not established	Not established	0.1 mg/m ³ TWA [VME] (restrictive limit, alveolar fraction)	Not established	Not established
Exposure Limits/Guidelines (Con't.)						
	Result	India	Indonesia	Israel	Italy	Japan

Copper	TWAs	0.2 mg/m3 TWA (fume)	0.2 mg/m3 TWA (fume); 1 mg/m3 TWA (dust and mist)	0.2 mg/m3 TWA (fume)	Not established	Not established
Cadmium (pyrophoric)	TWAs	0.05 mg/m3 TWA (dust)	0.01 mg/m3 TWA (inhalable particulate); 0.002 mg/m3 TWA (respirable particulate)	0.01 mg/m3 TWA (inhalable fraction); 0.005 mg/m3 TWA (for women of childbearing age as well as pregnant and breastfeeding women, inhalable fraction, as Cd); 0.002 mg/m3 TWA (respirable fraction)	Not established	0.05 mg/m3 OEL
Lead, powder (7439-92-1)	TWAs	Not established	0.05 mg/m3 TWA	0.05 mg/m3 TWA	0.075 mg/m3 TWA Media Ponderata nel Tempo	0.03 mg/m3 OEL
Iron (7439-89-6)	TWAs	Not established	1 mg/m3 TWA	Not established	Not established	Not established
Carbonic acid, magnesium salt (1:1) (546-93-0)	TWAs	Not established	10 mg/m3 TWA	Not established	Not established	Not established
Zinc oxide (1314-13-2)	TWAs	5.0 mg/m3 TWA (fume); 10.00 mg/m3 TWA (total dust)	5 mg/m3 TWA (fume); 10 mg/m3 TWA (not containing Asbestos and the crystal content is <1%, dust)	2 mg/m3 TWA (respirable fraction)	Not established	OEL (Present; pending, fume); 4 mg/m3 OEL (Class 2 Dust, total dust); 1 mg/m3 OEL (Class 2 Dust, respirable dust)
	STELs	10 mg/m3 STEL (fume)	Not established	10 mg/m3 STEL (respirable fraction)	Not established	Not established
Copper oxide	TWAs	Not established	Not established	1 mg/m3 TWA (dust and mist, as Cu) <i>as Copper compounds</i>	Not established	Not established
Asphalt (8052-42-4)	TWAs	Not established	0.5 mg/m3 TWA (soluble aerosol, fume)	0.5 mg/m3 TWA (fume, inhalable fraction, as benzene soluble aerosol)	Not established	Not established
Talc (14807-96-6)	TWAs	Not established	2 mg/m3 TWA (not containing fiber Asbestos, use NAB asbestos for talc containing fiber asbestos, respirable particulate)	4 mg/m3 TWA (airborne dust no otherwise classified); 2 mg/m3 TWA (particulate matter containing no Asbestos and <1% crystalline silica, respirable fraction)	Not established	0.5 mg/m3 OEL (Class 1 Dust, respirable dust); 2 mg/m3 OEL (Class 1 Dust, total dust)
Graphite (7782-42-5)	TWAs	Not established	2 mg/m3 TWA	2 mg/m3 TWA (respirable fraction, all forms except graphite fibers)	Not established	2 mg/m3 OEL (Class 1 Dust, total dust); 0.5 mg/m3 OEL (Class 1 Dust, respirable dust)
Crystalline silica	TWAs	(10600)/(%Quartz + 10) mppcm TWA, dust count; (10)/(%Quartz + 2) mg/m3 TWA, respirable dust; (30)/(%Quartz + 3) mg/m3 TWA, total dust	0.1 mg/m3 TWA (respirable particulate)	0.025 mg/m3 TWA (respirable fraction)	Not established	0.03 mg/m3 OEL (respirable dust) <i>as Silica, crystalline (general form)</i>
Exposure Limits/Guidelines (Con't.)						
	Result	Malaysia	Mexico	Netherlands	NIOSH	OSHA
Copper (7440-50-8)	STELs	Not established	2 mg/m3 STEL [PPT-CT] (fume, as	Not established	Not established	Not established

			Cu); 2 mg/m3 STEL [PPT-CT] (dust and mist, as Cu)			
	TWAs	0.2 mg/m3 TWA (fume); 1 mg/m3 TWA (dust and mist)	0.2 mg/m3 TWA VLE-PPT (fume, as Cu); 1 mg/m3 TWA VLE-PPT (dust and mist, as Cu)	0.1 mg/m3 TWA (inhalable fraction)	1 mg/m3 TWA (dust and mist); 0.1 mg/m3 TWA (fume)	0.1 mg/m3 TWA (fume); 1 mg/m3 TWA (dust and mist)
Cadmium (pyrophoric) (7440-43-9)	TWAs	0.01 mg/m3 TWA; 0.002 mg/m3 TWA (respirable fraction)	0.01 mg/m3 TWA VLE-PPT (total dust); 0.002 mg/m3 TWA VLE-PPT (respirable dust)	0.004 mg/m3 TWA	Not established	0.1 mg/m3 TWA (fume, applies to any operations or sectors for which the Cadmium standard is stayed or otherwise not in effect); 0.2 mg/m3 TWA (dust, applies to any operations or sectors for which the Cadmium standard is stayed or otherwise not in effect); 5 µg/m3 TWA
	Ceilings	Not established	Not established	Not established	Not established	0.3 mg/m3 Ceiling (applies to any operations or sectors for which the Cadmium standard is stayed or otherwise not in effect, fume); 0.6 mg/m3 Ceiling (applies to any operations or sectors for which the Cadmium standard is stayed or otherwise not in effect, dust)
Lead, powder (7439-92-1)	TWAs	0.05 mg/m3 TWA	0.15 mg/m3 TWA VLE-PPT (dust and fume, as Pb)	0.15 mg/m3 TWA	0.050 mg/m3 TWA	50 µg/m3 TWA
Carbonic acid, magnesium salt (1:1) (546-93-0)	TWAs	10 mg/m3 TWA (particulate matter containing no Asbestos and <1% crystalline Silica)	Not established	Not established	10 mg/m3 TWA (total dust, listed under Magnesite); 5 mg/m3 TWA (respirable dust, listed under Magnesite)	Not established
Zinc oxide (1314-13-2)	STELs	Not established	10 mg/m3 STEL [PPT-CT] (fume)	Not established	10 mg/m3 STEL (fume)	Not established
	TWAs	5 mg/m3 TWA (fume); 10 mg/m3 TWA (dust)	5 mg/m3 TWA VLE-PPT (fume); 10 mg/m3 TWA VLE-PPT (dust)	Not established	5 mg/m3 TWA (dust and fume)	5 mg/m3 TWA (fume); 15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)
	Ceilings	Not established	Not established	Not established	15 mg/m3 Ceiling (dust)	Not established
Copper oxide	TWAs	Not established	Not established	Not established	0.1 mg/m3 TWA (fume, as Cu)	Not established
Asphalt (8052-42-4)	STELs	Not established	10 mg/m3 STEL [PPT-CT]	Not established	Not established	Not established
	TWAs	5 mg/m3 TWA (fume)	5 mg/m3 TWA VLE-PPT	Not established	Not established	Not established
	Ceilings	Not established	Not established	Not established	5 mg/m3 Ceiling (fume, 15 min)	Not established
Talc (14807-96-6)	TWAs	2 mg/m3 TWA (respirable fraction of particulate matter)	2 mg/m3 TWA VLE-PPT (respirable fraction)	0.25 mg/m3 TWA	2 mg/m3 TWA (containing no Asbestos and <1%	Not established

					Quartz, respirable dust)	
Graphite	TWAs	2 mg/m3 TWA (all forms except Graphite fibres, respirable fraction)	2 mg/m3 TWA VLE-PPT (synthetic and natural)	Not established	2.5 mg/m3 TWA (natural, respirable dust)	15 mg/m3 TWA (synthetic, total dust); 5 mg/m3 TWA (synthetic, respirable fraction)
Crystalline silica	TWAs	0.1 mg/m3 TWA (respirable fraction)	0.1 mg/m3 TWA VLE-PPT (respirable fraction)	0.075 mg/m3 TWA (respirable dust, listed under Silicium dioxide)	0.05 mg/m3 TWA (respirable dust)	50 µg/m3 TWA (listed under Respirable crystalline silica)
Exposure Limits/Guidelines (Con't.)						
	Result	OSHA Vacated	Portugal	Russia	Singapore	Thailand
Copper (7440-50-8)	TWAs	0.1 mg/m3 TWA (dust, fume, mist, as Cu)	0.2 mg/m3 TWA [VLE-MP] (fume); 1 mg/m3 TWA [VLE-MP] (dust and mist, as Cu)	0.5 mg/m3 TWA (aerosol)	0.2 mg/m3 PEL (fume); 1 mg/m3 PEL (dust and mist)	Not established
	STELs	Not established	Not established	1 mg/m3 STEL (aerosol)	Not established	Not established
Cadmium (pyrophoric) (7440-43-9)	TWAs	Not established	0.01 mg/m3 TWA [VLE-MP]	0.01 mg/m3 TWA (aerosol)	0.01 mg/m3 PEL	0.005 mg/m3 TWA (Cd)
	STELs	0.3 ppm STEL (fume)	Not established	0.05 mg/m3 STEL (aerosol)	Not established	Not established
Lead, powder (7439-92-1)	TWAs	Not established	0.15 mg/m3 TWA [VLE-MP] (mandatory indicative limit value)	0.05 mg/m3 TWA (aerosol)	0.15 mg/m3 PEL	Not established
Iron (7439-89-6)	TWAs	Not established	Not established	10 mg/m3 TWA (aerosol)	Not established	Not established
Dolomite (16389-88-1)	TWAs	Not established	Not established	6 mg/m3 TWA (aerosol)	Not established	Not established
Zinc oxide (1314-13-2)	TWAs	5 mg/m3 TWA (fume); 10 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)	2 mg/m3 TWA [VLE-MP] (respirable fraction)	0.5 mg/m3 TWA (aerosol)	5 mg/m3 PEL (fume); 10 mg/m3 PEL (dust)	5 mg/m3 TWA (fume); 15 mg/m3 TWA (inhalable dust); 5 mg/m3 TWA (respirable dust)
	STELs	10 mg/m3 STEL (fume)	10 mg/m3 STEL [VLE-CD] (respirable fraction)	1.5 mg/m3 STEL (aerosol)	10 mg/m3 STEL (fume)	Not established
Asphalt (8052-42-4)	TWAs	Not established	0.5 mg/m3 TWA [VLE-MP] (fumes, inhalable fraction, as Benzene soluble aerosol)	Not established	5 mg/m3 PEL (fume)	0.5 mg/m3 TWA (Benzene soluble aerosol)
Talc (14807-96-6)	TWAs	2 mg/m3 TWA (<1% Crystalline silica, containing no Asbestos, respirable dust)	2 mg/m3 TWA [VLE-MP] (respirable fraction, particulate matter containing no Asbestos and <1% Crystalline silica)	Not established	2 mg/m3 PEL	2 mg/m3 TWA (containing no asbestos fibres, respirable dust); 0.1 fiber/cm3 TWA (containing asbestos fibres, respirable dust)
Graphite	TWAs	2.5 mg/m3 TWA (natural, respirable dust); 10 mg/m3 TWA (synthetic, total dust); 5 mg/m3 TWA (synthetic, respirable fraction)	2 mg/m3 TWA [VLE-MP] (all forms except Graphite fibers, respirable fraction)	Not established	2 mg/m3 PEL (respirable dust)	Not established
Crystalline silica	TWAs	0.1 mg/m3 TWA (respirable dust)	0.025 mg/m3 TWA [VLE-MP] (respirable fraction)	1 mg/m3 TWA (quartz glass, disintegration aerosol, total mass of aerosols, listed under Silicon dioxide)	0.1 mg/m3 PEL (respirable dust)	0.025 mg/m3 TWA (respirable dust)

				amorphous and vitreous); 1 mg/m ³ TWA (containing >70% Silicon dioxide in dust, total mass of aerosols, listed under Crystalline silicon dioxide)		
	STELs	Not established	Not established	3 mg/m ³ STEL (quartz glass, disintegration aerosol, total mass of aerosols, listed under Silicon dioxide amorphous and vitreous); 3 mg/m ³ STEL (containing >70% Silicon dioxide in dust, total mass of aerosols, listed under Silicon dioxide crystalline)	Not established	Not established

Exposure Limits/Guidelines (Con't.)

	Result	United Kingdom	United States - California	Venezuela
Copper (7440-50-8)	TWAs	1 mg/m ³ TWA (dust and mists); 0.2 mg/m ³ TWA (fume)	0.1 mg/m ³ PEL (fume); 1 mg/m ³ PEL (dust and mist)	0.2 mg/m ³ TWA [VTRE-L-8/40 (fume)]; 1 mg/m ³ TWA [VTRE-L-8/40 (dust and mist)]
	STELs	0.6 mg/m ³ STEL (calculated, fume); 2 mg/m ³ STEL (dust and mist)	Not established	Not established
Cadmium (pyrophoric)	TWAs	0.025 mg/m ³ TWA	0.005 mg/m ³ PEL (dust)	0.01 mg/m ³ TWA [VTRE-L-8/40 (except Sulfoselenide (CdS and CdSe) mixed sulfide Cd and Zn (CdS and ZnS), the mixed sulfide Cd and Hg (CdS and HgS), and those especially indicated in this document)]
	STELs	0.075 mg/m ³ STEL (calculated)	Not established	Not established
Lead, powder (7439-92-1)	TWAs	0.15 mg/m ³ TWA	0.05 mg/m ³ PEL (dust and fume)	0.05 ppm TWA [VTRE-L-8/40 (protection of the health and safety of workers from risks related to this chemical agent at work)]
	STELs	0.45 mg/m ³ STEL (calculated)	Not established	Not established
Zinc oxide (1314-13-2)	STELs	Not established	10 mg/m ³ STEL (fume)	10 mg/m ³ STEL [VTRE-LB (fume)]
	TWAs	Not established	5 mg/m ³ PEL (respirable fraction, listed under Particulates not otherwise regulated); 5 mg/m ³ PEL (fume); 10 mg/m ³ PEL (total dust, listed under Particulates not otherwise regulated)	2 mg/m ³ TWA [VTRE-L-8/40 (fume)]; 10 mg/m ³ TWA [VTRE-L-8/40 (dust)]
Asphalt (8052-42-4)	TWAs	5 mg/m ³ TWA (fumes)	5 mg/m ³ PEL (fume)	0.5 mg/m ³ TWA [VTRE-L-8/40 (fume, as Benzene soluble aerosols)]
	STELs	10 mg/m ³ STEL (fumes)	Not established	Not established
Talc (14807-96-6)	TWAs	1 mg/m ³ TWA (respirable dust)	2 mg/m ³ PEL (respirable dust, containing no Asbestos fibers, <1% Crystalline silica)	2 mg/m ³ TWA [VTRE-L-8/40 (respirable fraction; particulate containing no Asbestos and <1% Crystalline silica)]
	STELs	3 mg/m ³ STEL (calculated, respirable dust)	Not established	Not established
Graphite (7782-42-5)	TWAs	10 mg/m ³ TWA (inhalable dust); 4 mg/m ³ TWA (respirable dust)	2.5 mg/m ³ PEL (natural, respirable dust); 10 mg/m ³ PEL (synthetic total dust); 5 mg/m ³	2 mg/m ³ TWA [VTRE-L-8/40 (dust)]

			PEL (synthetic respirable fraction)	
	STELs	30 mg/m3 STEL (calculated, inhalable dust); 12 mg/m3 STEL (calculated, respirable dust)	Not established	Not established
Crystalline silica	TWAs	0.1 mg/m3 TWA (respirable) <i>as Silica, crystalline (general form)</i>	0.3 mg/m3 PEL (total dust); 0.1 mg/m3 PEL (respirable dust)	0.025 mg/m3 TWA [VTRE-L-8/40 (respirable fraction)]
	STELs	0.3 mg/m3 STEL (calculated, respirable) <i>as Silica, crystalline (general form)</i>	Not established	Not established

Exposure Control Notations

Japan

- Copper oxide as Copper compounds: **Sensitizers:** (Group 2 skin sensitizer (Evaluation does not necessarily apply to all individuals within the group))
- Crystalline silica as Silica, crystalline (general form): **Carcinogens:** (Group 1 - Carcinogenic to Humans)
- Lead, powder (7439-92-1): **Carcinogens:** (Group 2B - Possibly Carcinogenic to Humans)
- Cadmium (pyrophoric) (7440-43-9): **Carcinogens:** (Group 1 - Carcinogenic to Humans)
- Cadmium (pyrophoric) as Cadmium compounds: **Carcinogens:** (Group 1 - Carcinogenic to Humans (Evaluation does not necessarily apply to all individuals within the group))
- Copper (7440-50-8): **Sensitizers:** (Group 2 skin sensitizer)
- Copper as Copper compounds: **Sensitizers:** (Group 2 skin sensitizer (Evaluation does not necessarily apply to all individuals within the group))

Mexico

- Lead, powder (7439-92-1): **Carcinogens:** (A3 - Confirmed animal carcinogen)
- Cadmium (pyrophoric) (7440-43-9): **Carcinogens:** (A2 - Suspected human carcinogen)
- Cadmium (pyrophoric) as Cadmium compounds: **Carcinogens:** (A2 - Suspected human carcinogen)
- Talc (14807-96-6): **Carcinogens:** (A4 - Not classifiable as a human carcinogen)
- Asphalt (8052-42-4): **Carcinogens:** (A4 - Not classifiable as a human carcinogen)

Egypt

- Graphite (7782-42-5): **Nuisance Dusts:** (10 mg/m3 TWA (synthetic, containing <1% Quartz, total dust); 30 mppcf TWA (synthetic, containing <1% Quartz, total dust); 3 mg/m3 TWA (synthetic, containing <1% Quartz, total dust))
- Zinc oxide (1314-13-2): **Nuisance Dusts:** (10 mg/m3 TWA (containing <1% Quartz, total dust); 30 mppcf TWA (containing <1% Quartz, total dust); 3 mg/m3 TWA (containing <1% Quartz, inhalable dust))
- Lead, powder (7439-92-1): **Carcinogens:** (Animal Carcinogen)
- Cadmium (pyrophoric) (7440-43-9): **Carcinogens:** (Suspected Human Carcinogen)
- Cadmium (pyrophoric) as Cadmium compounds: **Carcinogens:** (Suspected Human Carcinogen)

Portugal

- Crystalline silica (14808-60-7): **Carcinogens:** (A2 - Suspected Human Carcinogen)
- Lead, powder (7439-92-1): **Carcinogens:** (A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans)
- Cadmium (pyrophoric) (7440-43-9): **Carcinogens:** (A2 - Suspected Human Carcinogen)
- Cadmium (pyrophoric) as Cadmium compounds: **Carcinogens:** (A2 - Suspected Human Carcinogen)
- Talc (14807-96-6): **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen)
- Asphalt (8052-42-4): **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen (fumes))

Russia

- Mineral oil, white (8042-47-5): **Skin:** (Skin notation)
- Cadmium (pyrophoric) (7440-43-9): **Carcinogens:** (Carcinogen)

United Kingdom

- Cadmium (pyrophoric) (7440-43-9): **Carcinogens:** (Capable of causing cancer and/or heritable genetic damage)

Indonesia

- Lead, powder (7439-92-1): **Carcinogens:** (A3 - confirmed animal carcinogen)
- Cadmium (pyrophoric) (7440-43-9): **Carcinogens:** (A2 - suspected human carcinogen)
- Cadmium (pyrophoric) as Cadmium compounds: **Carcinogens:** (A2 - suspected human carcinogen)
- Talc (14807-96-6): **Carcinogens:** (A4 - not classifiable as a human carcinogen (not containing asbestos fiber))
- Asphalt (8052-42-4): **Carcinogens:** (A4 - not classifiable as a human carcinogen)

Argentina

- Crystalline silica (14808-60-7): **Carcinogens:** (A2 - Suspected human carcinogen)
- Lead, powder (7439-92-1): **Carcinogens:** (A3 - Confirmed animal carcinogen with unknown relevance to humans)
- Cadmium (pyrophoric) (7440-43-9): **Carcinogens:** (A2 - Suspected human carcinogen)
- Cadmium (pyrophoric) as Cadmium compounds: **Carcinogens:** (A2 - Suspected human carcinogen)
- Talc (14807-96-6): **Carcinogens:** (A1 - Confirmed human carcinogen)
- Asphalt (8052-42-4): **Carcinogens:** (A4 - Not classifiable as a human carcinogen (fumes))

Canada Alberta

- Crystalline silica as Silica, crystalline (general form): **Designated Substances:** (Designated substance - requires code of practice (respirable))
- Lead, powder (7439-92-1): **Designated Substances:** (Designated substance - requires code of practice)
- Cadmium (pyrophoric) (7440-43-9): **Designated Substances:** (Designated substance - requires code of practice)

Canada British Columbia

- Crystalline silica (14808-60-7): **Carcinogens:** (ACGIH Category A2 - Suspected Human Carcinogen; IARC Category 1 - Human Carcinogen) | **Designated Substances:** (ACGIH Category A2 - Suspected Human Carcinogen; IARC Category 1 - Human Carcinogen)
- Lead, powder (7439-92-1): **Carcinogens:** (IARC Category 2B - Possible Human Carcinogen) | **Designated Substances:** (IARC Category 2B - Possible Human Carcinogen; Adverse reproductive effect) | **Substances with Reproductive Critical Effects:** (Adverse reproductive effect)
- Cadmium (pyrophoric) (7440-43-9): **Carcinogens:** (ACGIH Category A2 - Suspected Human Carcinogen; IARC Category 1 - Human Carcinogen) | **Designated Substances:** (ACGIH Category A2 - Suspected Human Carcinogen; IARC Category 1 - Human Carcinogen)
- Cadmium (pyrophoric) as Cadmium compounds: **Carcinogens:** (ACGIH Category A2 - Suspected Human Carcinogen; IARC Category 1 - Human Carcinogen) | **Designated Substances:** (ACGIH Category A2 - Suspected Human Carcinogen; IARC Category 1 - Human Carcinogen)
- Asphalt (8052-42-4): **Carcinogens:** (IARC Category 2A - Probable Human Carcinogen (fume; occupational exposure to oxidized Bitumens and their emissions during road paving); IARC Category 2B - Possible Human Carcinogen (fume; occupational exposure to straight-run Bitumens and their emissions during road paving)) | **Designated Substances:** (IARC Category 2B - Possible Human Carcinogen (fume; occupational exposure to straight-run Bitumens and their emissions during road paving); IARC Category 2A - Probable Human Carcinogen (fume; occupational exposure to oxidized Bitumens and their emissions during road paving))

Canada Manitoba

- Crystalline silica (14808-60-7): **Carcinogens:** (A2 Suspected Human Carcinogen)
- Lead, powder (7439-92-1): **Carcinogens:** (A3 Confirmed Animal Carcinogen with Unknown Relevance to Humans)
- Cadmium (pyrophoric) (7440-43-9): **Carcinogens:** (A2 Suspected Human Carcinogen)
- Cadmium (pyrophoric) as Cadmium compounds: **Carcinogens:** (A2 Suspected Human Carcinogen)
- Talc (14807-96-6): **Carcinogens:** (A4 Not Classifiable as a Human Carcinogen (containing no Asbestos fibers))
- Asphalt (8052-42-4): **Carcinogens:** (A4 Not Classifiable as a Human Carcinogen (fume, Coal tar-free))

Canada New Brunswick

- Lead, powder (7439-92-1): **Carcinogens:** (A3 - Animal Carcinogen)
- Cadmium (pyrophoric) (7440-43-9): **Carcinogens:** (A2 - Suspected Human Carcinogen)
- Cadmium (pyrophoric) as Cadmium compounds: **Carcinogens:** (A2 - Suspected Human Carcinogen)
- Talc (14807-96-6): **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen)
- Asphalt (8052-42-4): **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen (fumes))

Canada Nova Scotia

- Crystalline silica (14808-60-7): **Carcinogens:** (A2 - Suspected Human Carcinogen)
- Lead, powder (7439-92-1): **Carcinogens:** (A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans)
- Cadmium (pyrophoric) (7440-43-9): **Carcinogens:** (A2 - Suspected Human Carcinogen)
- Cadmium (pyrophoric) as Cadmium compounds: **Carcinogens:** (A2 - Suspected Human Carcinogen)
- Talc (14807-96-6): **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen (containing no Asbestos fibers))
- Asphalt (8052-42-4): **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen (fume, Coal tar-free))

Canada Ontario

- Crystalline silica (14808-60-7): **Designated Substances:** (0.10 mg/m3 TWA (respirable fraction, listed under Silica, crystalline))
- Lead, powder (7439-92-1): **Designated Substances:** (0.05 mg/m3 TWA)

Canada Quebec

- Crystalline silica (14808-60-7): **Carcinogens:** (C2 carcinogen - effect suspected in humans)
- Lead, powder (7439-92-1): **Carcinogens:** (C3 carcinogen - effect detected in animals)
- Cadmium (pyrophoric) (7440-43-9): **Carcinogens:** (C2 carcinogen - effect suspected in humans)
- Cadmium (pyrophoric) as Cadmium compounds: **Carcinogens:** (C2 carcinogen - effect suspected in humans)

Canada Saskatchewan

- Crystalline silica as Silica, crystalline (general form): **Designated Substances:** (Present (respirable size))
- Lead, powder (7439-92-1): **Designated Substances:** (Present)
- Cadmium (pyrophoric) (7440-43-9): **Designated Substances:** (Present)
- Cadmium (pyrophoric) as Cadmium compounds: **Designated Substances:** (Present)

France

- Lead, powder (7439-92-1): **Carcinogens:** (Carcinogen categories 1A, 1B, 2) | **Reproductive Toxins:** (Reproductive Toxin categories 1A, 1B, 2)
- Cadmium (pyrophoric) (7440-43-9): **Carcinogens:** (Carcinogen categories 1A, 1B, 2) | **Mutagens:** (Mutagen categories 1A, 1B, 2) | **Reproductive Toxins:** (Reproductive Toxin categories 1A, 1B, 2)
- Cadmium (pyrophoric) as Cadmium compounds: **Carcinogens:** (Carcinogen categories 1A, 1B, 2) | **Mutagens:** (Mutagen categories 1A, 1B, 2) | **Reproductive Toxins:** (Reproductive Toxin categories 1A, 1B, 2)

Venezuela

- Crystalline silica (14808-60-7): **Ceilings:** (Present)
- Lead, powder (7439-92-1): **Ceilings:** (Present)
- Cadmium (pyrophoric) (7440-43-9): **Ceilings:** (Present)
- Cadmium (pyrophoric) as Cadmium compounds: **Ceilings:** (Present)
- Talc (14807-96-6): **Ceilings:** (Present)
- Asphalt (8052-42-4): **Ceilings:** (Present)

ACGIH

- Crystalline silica (14808-60-7): **Carcinogens:** (A2 - Suspected Human Carcinogen)
- Lead, powder (7439-92-1): **Carcinogens:** (A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans)
- Cadmium (pyrophoric) (7440-43-9): **Carcinogens:** (A2 - Suspected Human Carcinogen)
- Cadmium (pyrophoric) as Cadmium compounds: **Carcinogens:** (A2 - Suspected Human Carcinogen)
- Talc (14807-96-6): **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen (containing no asbestos fibers))
- Asphalt (8052-42-4): **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen (fume, coal tar-free))

Germany TRGS

- Lead, powder (7439-92-1): **Developmental Toxins:** (Category 1A (metal)) | **Reproductive Toxins:** (Category 2 (metal))
- Cadmium (pyrophoric) as Cadmium compounds: **Carcinogens:** (Category 1B (as inhalable dust/aerosol; except the ones listed in Annex VI, Part 3 of the CLP Regulation, as far as they are classified as "lower"; substances falling under this entry may not be bioavailable and in this case can not be classified as CMR))

Germany DFG

- Mineral oil, white (8042-47-5): **Pregnancy:** (no risk to embryo/fetus if exposure limits adhered to (respirable fraction))
- Graphite (7782-42-5): **Pregnancy:** (no risk to embryo/fetus if exposure limits adhered to (inhalable fraction; respirable fraction))
- Crystalline silica (14808-60-7): **Carcinogens:** (Category 1 (causes cancer in man; alveola fraction))
- Zinc powder, stabilized (7440-66-6): **Pregnancy:** (no risk to embryo/fetus if exposure limits adhered to (respirable; inhalable))
- Lead, powder (7439-92-1): **Carcinogens:** (Category 2 (considered to be carcinogenic for man))
- Cadmium (pyrophoric) (7440-43-9): **Carcinogens:** (Category 1 (causes cancer in man)) | **Skin:** (skin notation)
- Copper (7440-50-8): **Pregnancy:** (no risk to embryo/fetus if exposure limits adhered to)
- Talc (14807-96-6): **Carcinogens:** (Category 3B (could be carcinogenic for man; free of asbestos fibers))
- Asphalt (8052-42-4): **Carcinogens:** (Category 2 (considered to be carcinogenic for man; aerosol and vapor)) | **Skin:** (skin notation (aerosol and vapour))

Exposure Limits Supplemental

Thailand

- Graphite (7782-42-5): **Mineral Dusts:** (15 mppcf TWA)
- Graphite as Particulates not otherwise classified (PNOC): **Mineral Dusts:** (15 mppcf TWA (respirable dust); 15 mg/m³ TWA (total dust); 50 mppcf TWA (total dust); 5 mg/m³ TWA (respirable dust))
- Crystalline silica (14808-60-7): **Mineral Dusts:** (TWA ((250/(%SiO₂ + 5)), mppcf, respirable dust); TWA ((10/(%SiO₂ + 2)), mg/m³, respirable dust); TWA ((30/(%SiO₂ + 2)), mg/m³, total dust))
- Talc (14807-96-6): **Mineral Dusts:** (20 mppcf TWA)

Singapore

- Cadmium (pyrophoric) (7440-43-9): **Biological Threshold Limit Values (BTLV):** (290 µg/g Creatinine Medium: urine Parameter: B2 microglobulin; 5 µg/L Medium: blood Parameter: Cadmium)

Argentina

- Lead, powder (7439-92-1): **BEIs:** (30 µg/100 mL blood not critical Pb (Women of child bearing potential, whose blood Pb level exceeds 10 mg/dL, are at risk of delivering a child with blood Pb level over the current CDC guideline. If the blood Pb of such children remains elevated, they may be at increased risk of cognitive deficiencies. The blood Pb of these children should be closely monitored and appropriate steps should be taken to minimize the child's exposure to environmental lead.))
- Cadmium (pyrophoric) (7440-43-9): **BEIs:** (5 µg/g Creatinine urine not critical Cd (Background); 5 µg/L blood not critical Cd (Background))

Canada Yukon

- Lead, powder (7439-92-1): **Miximum Acceptable Body Burdens:** (80 µg/100 mL Medium: blood; 200 µg/L Medium: urine)
- Cadmium (pyrophoric) (7440-43-9): **Miximum Acceptable Body Burdens:** (10 µg/100 mL Medium: blood; 35 µg/L Medium: urine)

Israel

- Zinc oxide (1314-13-2): **Substances Requiring Environmental - Occu:** (Present)
- Lead, powder (7439-92-1): **Action Levels:** (0.025 mg/m³ AL (as Pb)) | **Biological Markers of Occupational Exposure:** (30 µg/100 mL Medium: blood Parameter: Lead)
- Cadmium (pyrophoric) (7440-43-9): **Action Levels:** (0.005 mg/m³ AL (inhalable, as Cd)) | **Biological Markers of Occupational Exposure:** (5 µg/g Creatinine Medium: urine Time: not critical Parameter: Cadmium (background); 5 µg/L Medium: blood Time: not critical Parameter: Cadmium (background))
- Cadmium (pyrophoric) as Cadmium compounds: **Action Levels:** (0.005 mg/m³ AL (inhalable, as Cd))
- Asphalt (8052-42-4): **Biological Markers of Occupational Exposure:** (Medium: urine Time: end of shift at end of workweek Parameter: 1-Hydroxypyrene with hydrolysis (nonquantitative))

Venezuela

- Lead, powder (7439-92-1): **Biological Exposure Indices:** (30 µg/100 mL blood not critical Lead (Note: Women of reproductive age, whose levels of blood Pb exceed 10 µg/dL are at risk of giving birth to children with Pb blood values exceeding said level, which was established by the Center of Disease Control in the United States. If Pb levels in said children remain elevated, they may be at an increased risk of cognitive deficits. The Pb in the blood of those children must be watched very closely and the children must be kept from being exposed to environmental lead.))
- Cadmium (pyrophoric) (7440-43-9): **Biological Exposure Indices:** (5 µg/g Creatinine urine not critical Cadmium (F); 5 µg/L blood not critical Cadmium (F))

OSHA

- Graphite (7782-42-5): **Mineral Dusts:** (15 mppcf TWA (natural))
- Graphite as Particulates not otherwise classified (PNOC): **Mineral Dusts:** (15 mppcf TWA (respirable fraction); 5 mg/m³ TWA (respirable fraction); 50 mppcf TWA (total dust); 15 mg/m³ TWA (total dust))
- Crystalline silica (14808-60-7): **Mineral Dusts:** ((250)/(SiO₂ + 5)) mppcf TWA, respirable fraction; (10)/(SiO₂ + 2) mg/m³ TWA, respirable fraction)
- Talc (14807-96-6): **Mineral Dusts:** (20 mppcf TWA (if 1% Quartz or more; use Quartz limit))

ACGIH

- Copper oxide as Copper compounds: **TLV Basis - Critical Effects:** (gastrointestinal (dust and mist); irritation (dust and mist))
- Graphite (7782-42-5): **TLV Basis - Critical Effects:** (pneumoconiosis (all forms except graphite fibers))
- Crystalline silica (14808-60-7): **TLV Basis - Critical Effects:** (lung cancer; pulmonary fibrosis)
- Zinc oxide (1314-13-2): **TLV Basis - Critical Effects:** (metal fume fever)
- Lead, powder (7439-92-1): **BEIs:** (200 µg/L Medium: blood Time: not critical Parameter: Lead (Note: Persons applying this BEI are encouraged to counsel female workers of child-bearing age about the risk of delivering a child with a PbB (lead in blood level) over the current CDC reference value.)) | **TLV Basis - Critical Effects:** (CNS and PNS impairment; hematologic effects)
- Cadmium (pyrophoric) (7440-43-9): **BEIs:** (5 µg/g creatinine Medium: urine Time: not critical Parameter: Cadmium (background); 5 µg/L Medium: blood Time: not critical Parameter: Cadmium (background)) | **TLV Basis - Critical Effects:** (kidney damage)
- Cadmium (pyrophoric) as Cadmium compounds: **TLV Basis - Critical Effects:** (kidney damage)
- Copper (7440-50-8): **TLV Basis - Critical Effects:** (metal fume fever (fume))
- Copper as Copper compounds: **TLV Basis - Critical Effects:** (gastrointestinal (dust and mist); irritation (dust and mist))
- Talc (14807-96-6): **TLV Basis - Critical Effects:** (pulmonary fibrosis (containing no asbestos fibers); pulmonary function (containing no asbestos fibers))
- Asphalt (8052-42-4): **BEIs:** (Medium: urine Time: end of shift at end of workweek Parameter: 1-Hydroxypyrene with hydrolysis (nonquantitative)) | **TLV Basis - Critical Effects:** (eye and upper respiratory tract irritation (fume))

Germany TRGS

- Lead, powder (7439-92-1): **BEIs:** (300 µg/L Medium: whole blood Time: no restriction Parameter: Lead (women age below 45 years); 400 µg/L Medium: whole blood Time: no restriction Parameter: Lead)

8.2 Exposure controls

Engineering

- Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Measures/Controls

Personal Protective Equipment

Respiratory

- In case of insufficient ventilation, wear suitable respiratory equipment.

Eye/Face

- Wear protective eyewear (goggles, face shield, or safety glasses).

Skin/Body

- Rubber or cloth. Wear long sleeves and/or protective coveralls.

Environmental

Exposure Controls

- Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways. Follow best practice for site management and disposal of waste.

Key to abbreviations

ACGIH = American Conference of Governmental Industrial Hygiene

BEI = Biological Exposure Indices

MAK = Maximale Arbeitsplatz Konzentration is the maximum permissible concentration

NIOSH = National Institute of Occupational Safety and Health

OSHA = Occupational Safety and Health Administration

PEL = Permissible Exposure Level determined by the Occupational Safety and Health Administration (OSHA)

STEL = Short Term Exposure Limits are based on 15-minute exposures

STEV = Short Term Exposure Value

TLV = Threshold Limit Value determined by the American Conference of Governmental Industrial Hygienists (ACGIH)

TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures

TWAEV = Time-Weighted Average Exposure Value

Section 9 - Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

Material Description			
Physical Form	Solid	Appearance/Description	Light brown/copper semi-solid paste with mild petroleum odor.
Color	Light brown/copper.	Odor	Mild, petroleum.
Odor Threshold	Data lacking		
General Properties			
Boiling Point	Data lacking	Melting Point/Freezing Point	Data lacking
Decomposition Temperature	Data lacking	pH	Data lacking
Specific Gravity/Relative Density	Data lacking	Water Solubility	Data lacking
Viscosity	Data lacking	Explosive Properties	Data lacking
Oxidizing Properties:	Data lacking		
Volatility			

Vapor Pressure	Data lacking	Vapor Density	Data lacking
Evaporation Rate	Data lacking		
Flammability			
Flash Point	Data lacking	UEL	Data lacking
LEL	Data lacking	Autoignition	Data lacking
Flammability (solid, gas)	Data lacking		
Environmental			
Octanol/Water Partition coefficient	Data lacking		

9.2 Other Information

- No additional physical and chemical parameters noted.

Section 10: Stability and Reactivity

10.1 Reactivity

- No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

- Stable under normal temperatures and pressures.

10.3 Possibility of hazardous reactions

- Hazardous polymerization will not occur.

10.4 Conditions to avoid

- Keep away from heat, sparks and flame.

10.5 Incompatible materials

- Strong oxidising agents.

10.6 Hazardous decomposition products

- Carbon monoxide, carbon dioxide, oxides of zinc.

Section 11 - Toxicological Information

11.1 Information on toxicological effects

		Components
Copper oxide (0.9% TO 10%)	1317-38-0	Acute Toxicity: Ingestion/Oral-Rat LD50 • 470 mg/kg
Mineral oil, white (0.01% TO 0.5%)	8042-47-5	Acute Toxicity: Ingestion/Oral-Rat LD50 • >5000 mg/kg; Multi-dose Toxicity: Ingestion/Oral-Rat TDL0 • 92 g/kg 92 Day(s)-Continuous; <i>Liver:Changes in liver weight; Blood:Changes in leucocyte (WBC) count; Nutritional and Gross Metabolic:Gross Metabolite Changes:Weight loss or decreased weight gain;</i> Inhalation-Rat TCl0 • 1000 mg/m ³ 4 Week(s)-Intermittent; <i>Lungs, Thorax, or Respiration:Changes in lung weight</i>
Crystalline silica (20.15% TO 64.65%)	14808-60-7	Acute Toxicity: Inhalation-Human TCl0 • 16 mppcf 8 Hour(s) 17.9 Year(s)-Intermittent; <i>Lungs, Thorax, or Respiration:Fibrosis, focal (pneumoconiosis); Lungs, Thorax, or Respiration:Cough; Lungs, Thorax, or Respiration:Dyspnea;</i> Inhalation-Rat TCl0 • 200 mg/kg; <i>Lungs, Thorax, or Respiration:Fibrosis, focal (pneumoconiosis); Lungs, Thorax, or Respiration:Other changes; Nutritional and Gross Metabolic:Changes in Chemistry or Temperature:Fe;</i> Multi-dose Toxicity: Inhalation-Hamster TCl0 • 3 mg/m ³ 6 Hour(s) 78 Week(s)-Intermittent; <i>Lungs, Thorax, or Respiration:Fibrosis (interstitial); Lungs, Thorax, or Respiration:Changes in lung weight;</i> Inhalation-Rat TCl0 • 6.2 mg/m ³ 6 Hour(s) 6 Week(s)-Intermittent; <i>Lungs, Thorax, or Respiration:Other changes; Blood:Changes in spleen; Immunological Including Allergic:Increase in cellular immune response;</i> Inhalation-Rat TCl0 • 80 mg/m ³ 26 Week(s)-Intermittent; <i>Lungs, Thorax, or Respiration:Fibrosis, focal (pneumoconiosis); Blood:Changes in spleen; Immunological Including Allergic:Decrease in cellular immune response;</i> Mutagen: Micronucleus test • Unreported Route-Hamster • Lung (Somatic cell) • 160 µg/cm ³ ; DNA damage • Unreported Route-Human • Other Cell Type • 120 mg/L 24 Hour(s); Micronucleus test • Unreported Route-Human • Lung (Somatic cell) • 40 µg/cm ³ ; Tumorigen / Carcinogen: Inhalation-Rat TCl0 • 50 mg/m ³ 6 Hour(s) 71 Week(s)-Intermittent; <i>Tumorigenic:Carcinogenic by RTECS criteria; Liver:Tumors</i>
Zinc powder, stabilized (19% TO 25%)	7440-66-6	Irritation: Skin-Human • 300 µg 3 Day(s)-Intermittent • Mild irritation; Tumorigen / Carcinogen: Ingestion/Oral-Mouse TDL0 • 12.6 mg/kg 46 Week(s)-Continuous;

		<i>Tumorigenic:Carcinogenic by RTECS criteria; Gastrointestinal:Tumors; Tumorigenic:Facilitates action of known carcinogen</i>
Zinc oxide (0.4% TO 1%)	1314-13-2	Acute Toxicity: Ingestion/Oral-Rat LD50 • >5000 mg/kg; Inhalation-Mouse LC50 • 2500 mg/m ³ ; Inhalation-Human TClO • 600 mg/m ³ ; <i>Lungs, Thorax, or Respiration:Cough; Lungs, Thorax, or Respiration:Dyspnea; Lungs, Thorax, or Respiration:Other changes;</i> Irritation: Eye-Rabbit • 500 mg 24 Hour(s) • Mild irritation; Skin-Rabbit • 500 mg 24 Hour(s) • Mild irritation; Multi-dose Toxicity: Inhalation-Mammal TClO • 15 mg/m ³ 1 Hour(s) 84 Day(s)-Intermittent; <i>Lungs, Thorax, or Respiration:Dyspnea; Lungs, Thorax, or Respiration:Other changes;</i> Mutagen: Unscheduled DNA synthesis • Inhalation-Guinea Pig • 5300 µg/m ³ 3 Hour(s) 6 Day(s); Cytogenetic analysis • Inhalation-Rat • 100 µg/m ³ ; Reproductive: Ingestion/Oral-Rat TDLo • 6846 mg/kg (1-22D preg); <i>Reproductive Effects:Specific Developmental Abnormalities:Homeostasis; Reproductive Effects:Effects on Newborn:Stillbirth; Reproductive Effects:Effects on Newborn:Growth statistics (e.g., reduced weight gain)</i>
Talc (3% TO 15%)	14807-96-6	Irritation: Skin-Human • 300 µg 3 Day(s)-Intermittent • Mild irritation; Tumorigen / Carcinogen: Inhalation-Rat • 11 mg/m ³ 1 Year(s)-Intermittent; <i>Tumorigenic:Equivocal tumorigenic agent by RTECS criteria; Lungs, Thorax, or Respiration:Tumors;</i> Inhalation-Rat TClO • 18 mg/m ³ 6 Hour(s) 2 Year(s)-Intermittent; <i>Tumorigenic:Carcinogenic by RTECS criteria; Lungs, Thorax, or Respiration:Bronchiogenic carcinoma; Endocrine:Tumors</i>
Asphalt (1.4% TO 4.41%)	8052-42-4	Acute Toxicity: Ingestion/Oral-Rat LD50 • >5000 mg/kg; <i>Gastrointestinal:Hypermotility, diarrhea;</i> Skin-Rabbit LD50 • 2000 mg/kg; Multi-dose Toxicity: Inhalation-Rat TClO • 100 mg/m ³ 6 Hour(s) 14 Week(s)-Intermittent; <i>Sense Organs and Special Senses:Olfaction:Tumors; Behavioral:Food intake (animal); Nutritional and Gross Metabolic:Gross Metabolite Changes:Weight loss or decreased weight gain;</i> Inhalation-Human TDLo • 10 mg/m ³ 5.5 Year(s)-Intermittent; <i>Sense Organs and Special Senses:Eye:Conjunctive irritation; Lungs, Thorax, or Respiration:Cough;</i> <i>Gastrointestinal:Changes in structure or function of salivary glands;</i> Tumorigen / Carcinogen: Skin-Mouse • 69 g/kg 43 Week(s)-Intermittent; <i>Tumorigenic:Equivocal tumorigenic agent by RTECS criteria; Lungs, Thorax, or Respiration:Tumors; Skin and Appendages:Other:Tumors</i>
Zinc O,O-bis(mixed iso-butyl and pentyl) phosphorodithioate (0.357% TO 1.12455%)	68457-79-4	Acute Toxicity: Ingestion/Oral-Rat LD50 • 3.6 g/kg; <i>Behavioral:Somnolence (general depressed activity); Lungs, Thorax, or Respiration:Other changes; Gastrointestinal:Hypermotility, diarrhea</i>

GHS Properties	Classification
Acute toxicity	EU/CLP•Data lacking UN GHS 4•Data lacking OSHA HCS 2012•Data lacking WHMIS 2015•Data lacking
Skin corrosion/Irritation	EU/CLP•Data lacking UN GHS 4•Skin Mild Irritation 3 OSHA HCS 2012•Data lacking WHMIS 2015•Data lacking
Serious eye damage/Irritation	EU/CLP•Data lacking UN GHS 4•Data lacking OSHA HCS 2012•Data lacking WHMIS 2015•Data lacking
Skin sensitization	EU/CLP•Data lacking UN GHS 4•Data lacking OSHA HCS 2012•Data lacking WHMIS 2015•Data lacking
Respiratory sensitization	EU/CLP•Data lacking UN GHS 4•Data lacking OSHA HCS 2012•Data lacking WHMIS 2015•Data lacking
Aspiration Hazard	EU/CLP•Data lacking UN GHS 4•Data lacking

	OSHA HCS 2012•Data lacking WHMIS 2015•Data lacking
Carcinogenicity	EU/CLP•Carcinogenicity 2; Suspected of causing cancer UN GHS 4•Carcinogenicity 2 OSHA HCS 2012•Carcinogenicity 2 WHMIS 2015•Carcinogenicity 2
Germ Cell Mutagenicity	EU/CLP•Data lacking UN GHS 4•Data lacking OSHA HCS 2012•Data lacking WHMIS 2015•Data lacking
Toxicity for Reproduction	EU/CLP•Data lacking UN GHS 4•Toxic to Reproduction 2 OSHA HCS 2012•Toxic to Reproduction 2 WHMIS 2015•Toxic to Reproduction 2
STOT-SE	EU/CLP•Data lacking UN GHS 4•Data lacking OSHA HCS 2012•Data lacking WHMIS 2015•Data lacking
STOT-RE	EU/CLP•Data lacking UN GHS 4•Data lacking OSHA HCS 2012•Data lacking WHMIS 2015•Data lacking

Potential Health Effects

Inhalation

Acute (Immediate) • Under normal conditions of use, no health effects are expected.

Chronic (Delayed) • No data available

Skin

Acute (Immediate) • Causes mild skin irritation.

Chronic (Delayed) • No data available

Eye

Acute (Immediate) • Under normal conditions of use, no health effects are expected.

Chronic (Delayed) • No data available

Ingestion

Acute (Immediate) • Under normal conditions of use, no health effects are expected.

Chronic (Delayed) • No data available

Carcinogenic Effects • Repeated and prolonged exposure may cause cancer.

Carcinogenic Effects				
	CAS	OSHA	IARC	NTP
Cadmium (pyrophoric)	7440-43-9	Specifically Regulated Carcinogen	Group 1-Carcinogenic	Known Human Carcinogen
Lead, powder	7439-92-1	Not Listed	Group 2A-Probable Carcinogen	Reasonably Anticipated to be Human Carcinogen
Asphalt	8052-42-4	Not Listed	Group 2B-Possible Carcinogen	Not Listed
Crystalline silica	14808-60-7	Not Listed	Group 1-Carcinogenic	Known Human Carcinogen

Reproductive Effects • Repeated and prolonged exposure may cause reproductive effects.

Key to abbreviations

LC = Lethal Concentration

LD = Lethal Dose

TC = Toxic Concentration

TD = Toxic Dose

Section 12 - Ecological Information

12.1 Toxicity

Components		
Copper oxide (0.9% TO 10%)	1317-38-0	<p>Aquatic Toxicity-Fish: 96 Hour(s) LC50 <i>Gambusia affinis</i> (Western Mosquitofish) >56000 mg/L 15 Day(s) NOEC <i>Cyprinus carpio</i> (Common Carp) 0.0128 mg/L</p> <p>Aquatic Toxicity-Crustacea: 48 Hour(s) EC50 <i>Daphnia magna</i> (Water Flea) 92.7 mg/L</p> <p>Aquatic Toxicity-Algae and Other Aquatic Plant(s): 72 Hour(s) EC50 <i>Pseudokirchneriella subcapitata</i> (Green Algae) 0.014 mg/L 3 Day(s) NOEC <i>Pseudokirchneriella subcapitata</i> (Green Algae) 0.421 mg/L</p>
Zinc powder, stabilized (19% TO 25%)	7440-66-6	<p>Aquatic Toxicity-Fish: 96 Hour(s) LC50 <i>Pimephales promelas</i> (Fathead Minnow) 0.238 mg/L 28 Day(s) NOEC <i>Cyprinus carpio</i> (Common Carp) 0.0026 mg/L</p> <p>Aquatic Toxicity-Crustacea: 21 Day(s) NOEC <i>Daphnia magna</i> (Water Flea) 0.062 mg/L 48 Hour(s) EC50 <i>Ceriodaphnia dubia</i> 0.07 mg/L</p> <p>Aquatic Toxicity-Algae and Other Aquatic Plant(s): 72 Hour(s) EC50 <i>Pseudokirchneriella subcapitata</i> (Green Algae) 0.106 mg/L 14 Day(s) NOEC <i>Euglena gracilis</i> (Flagellate Euglenoid) 0.0075 mg/L</p>
Zinc oxide (0.4% TO 1%)	1314-13-2	<p>Aquatic Toxicity-Fish: 96 Hour(s) LC50 <i>Oncorhynchus mykiss</i> (Rainbow Trout) 1.1 mg/L Comments: Pesticide Ecotoxicity Database (Formerly: Environmental Effects Database (EEDB)) 14 Day(s) NOEC <i>Oncorhynchus mykiss</i> (Rainbow Trout) 771.9 ppm Comments: Effects of Different Ligands on the Bioaccumulation and Subsequent Depuration of Dietary Cu and Zn in Juvenile Rainbow Trout (<i>Oncorhynchus mykiss</i>)</p> <p>Aquatic Toxicity-Crustacea: 100 Day(s) NOEC <i>Corophium volutator</i> (Scud) 0.5 mg/L Comments: Sequestration of Zinc from Zinc Oxide Nanoparticles and Life Cycle Effects in the Sediment Dweller Amphipod <i>Corophium volutator</i> 48 Hour(s) EC50 Water Flea 1 mg/L Comments: Acute and Chronic Effects of Nano- and Non-Nano-Scale TiO₂ and ZnO Particles on Mobility and Reproduction of the Freshwater Invertebrate <i>Daphnia magna</i></p> <p>Aquatic Toxicity-Algae and Other Aquatic Plant(s): 72 Hour(s) EC50 <i>Pseudokirchneriella subcapitata</i> (Green Algae) 0.042 mg/L Comments: Toxicity of Nanoparticles of CuO, ZnO and TiO₂ to Microalgae <i>Pseudokirchneriella subcapitata</i></p>

- Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

12.2 Persistence and degradability

- Material data lacking.

12.3 Bioaccumulative potential

- Material data lacking.

12.4 Mobility in Soil

- Material data lacking.

12.5 Results of PBT and vPvB assessment

- No PBT and vPvB assessment has been conducted.

12.6 Other adverse effects

- No studies have been found.

Section 13 - Disposal Considerations

13.1 Waste treatment methods

Product waste • Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Packaging waste • Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Section 14 - Transport Information

	14.1 UN number	14.2 UN proper shipping name	14.3 Transport hazard class(es)	14.4 Packing group	14.5 Environmental hazards
DOT	UN3077	Environmentally hazardous substance, solid, n.o.s. (Zinc powder)	9	III	NDA
TDG	UN3077	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc powder)	9	III	NDA

IMO/IMDG	UN3077	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc powder)	9	III	NDA
IATA/ICAO	UN3077	Environmentally hazardous substance, solid, n.o.s. (Zinc powder)	9	III	NDA

14.6 Special precautions for user

• None specified.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

• Data lacking.

Section 15 - Regulatory Information

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

State Right To Know		
Component	CAS	PA
Asphalt	8052-42-4	Yes
Cadmium (pyrophoric)	7440-43-9	Yes
Carbonic acid, magnesium salt (1:1)	546-93-0	No
Chlorite	1318-59-8	No
Copper	7440-50-8	Yes
Copper oxide	1317-38-0	No
Crystalline silica	14808-60-7	Yes
Dolomite	16389-88-1	No
Ethene, homopolymer	9002-88-4	No
Graphite	7782-42-5	Yes
Iron	7439-89-6	No
Lead, powder	7439-92-1	Yes
Mineral oil, white	8042-47-5	No
Naturally occurring mineral (inert ash)	999999-99-4	No
Talc	14807-96-6	Yes
Zinc O,O-bis(mixed iso-butyl and pentyl) phosphorodithioate	68457-79-4	No
Zinc oxide	1314-13-2	Yes
Zinc powder, stabilized	7440-66-6	Yes

Inventory						
Component	CAS	Australia AICS	Canada DSL	Canada NDSL	China	EU EINECS
Asphalt	8052-42-4	Yes	Yes	No	Yes	Yes
Cadmium (pyrophoric)	7440-43-9	Yes	Yes	No	Yes	Yes
Carbonic acid, magnesium salt (1:1)	546-93-0	Yes	Yes	No	Yes	Yes
Chlorite	1318-59-8	No	No	No	Yes	Yes
Copper	7440-50-8	Yes	Yes	No	Yes	Yes
Copper oxide	1317-38-0	Yes	Yes	No	Yes	Yes
Crystalline silica	14808-60-7	Yes	Yes	No	Yes	Yes

Dolomite	16389-88-1	Yes	No	Yes	Yes	Yes
Ethene, homopolymer	9002-88-4	Yes	Yes	No	Yes	No
Graphite	7782-42-5	Yes	Yes	No	Yes	Yes
Iron	7439-89-6	Yes	Yes	No	Yes	Yes
Lead, powder	7439-92-1	Yes	Yes	No	Yes	Yes
Mineral oil, white	8042-47-5	Yes	Yes	No	Yes	Yes
Naturally occurring mineral (inert ash)	999999-99-4	No	No	No	No	Yes
Talc	14807-96-6	Yes	Yes	No	Yes	Yes
Zinc O,O-bis(mixed iso-butyl and pentyl) phosphorodithioate	68457-79-4	Yes	Yes	No	Yes	Yes
Zinc oxide	1314-13-2	Yes	Yes	No	Yes	Yes
Zinc powder, stabilized	7440-66-6	Yes	Yes	No	Yes	Yes

Inventory (Con't.)

Component	CAS	EU ELNICS	Japan ENCS	TSCA
Asphalt	8052-42-4	No	Yes	Yes
Cadmium (pyrophoric)	7440-43-9	No	No	Yes
Carbonic acid, magnesium salt (1:1)	546-93-0	No	Yes	Yes
Chlorite	1318-59-8	No	No	No
Copper	7440-50-8	No	No	Yes
Copper oxide	1317-38-0	No	Yes	Yes
Crystalline silica	14808-60-7	No	Yes	Yes
Dolomite	16389-88-1	No	No	Yes
Ethene, homopolymer	9002-88-4	No	Yes	Yes
Graphite	7782-42-5	No	No	Yes
Iron	7439-89-6	No	No	Yes
Lead, powder	7439-92-1	No	No	Yes
Mineral oil, white	8042-47-5	No	Yes	Yes
Naturally occurring mineral (inert ash)	999999-99-4	No	No	No
Talc	14807-96-6	No	Yes	Yes
Zinc O,O-bis(mixed iso-butyl and pentyl) phosphorodithioate	68457-79-4	No	Yes	Yes
Zinc oxide	1314-13-2	No	Yes	Yes
Zinc powder, stabilized	7440-66-6	No	No	Yes

United States - California

Environment

U.S. - California - Proposition 65 - Carcinogens List

•Chlorite	1318-59-8	Not Listed
•Dolomite	16389-88-1	Not Listed
•Copper oxide	1317-38-0	Not Listed
•Copper	7440-50-8	Not Listed
•Cadmium (pyrophoric)	7440-43-9	carcinogen, 10/1/1987
•Lead, powder	7439-92-1	carcinogen, 10/1/1992
•Talc	14807-96-6	Not Listed
•Zinc oxide	1314-13-2	Not Listed
•Asphalt	8052-42-4	Not Listed
•Carbonic acid, magnesium salt (1:1)	546-93-0	Not Listed
•Zinc powder, stabilized	7440-66-6	Not Listed

•Mineral oil, white	8042-47-5	Not Listed
•Iron	7439-89-6	Not Listed
•Zinc O,O-bis(mixed iso-butyl and pentyl) phosphorodithioate	68457-79-4	Not Listed
•Ethene, homopolymer	9002-88-4	Not Listed
•Crystalline silica	14808-60-7	Not Listed
•Graphite	7782-42-5	Not Listed
•Naturally occurring mineral (inert ash)	999999-99-4	Not Listed
U.S. - California - Proposition 65 - Developmental Toxicity		
•Chlorite	1318-59-8	Not Listed
•Dolomite	16389-88-1	Not Listed
•Copper oxide	1317-38-0	Not Listed
•Copper	7440-50-8	Not Listed
•Cadmium (pyrophoric)	7440-43-9	developmental toxicity, 5/1/1997
•Lead, powder	7439-92-1	developmental toxicity, 2/27/1987
•Talc	14807-96-6	Not Listed
•Zinc oxide	1314-13-2	Not Listed
•Asphalt	8052-42-4	Not Listed
•Carbonic acid, magnesium salt (1:1)	546-93-0	Not Listed
•Zinc powder, stabilized	7440-66-6	Not Listed
•Mineral oil, white	8042-47-5	Not Listed
•Iron	7439-89-6	Not Listed
•Zinc O,O-bis(mixed iso-butyl and pentyl) phosphorodithioate	68457-79-4	Not Listed
•Ethene, homopolymer	9002-88-4	Not Listed
•Crystalline silica	14808-60-7	Not Listed
•Graphite	7782-42-5	Not Listed
•Naturally occurring mineral (inert ash)	999999-99-4	Not Listed
U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)		
•Chlorite	1318-59-8	Not Listed
•Dolomite	16389-88-1	Not Listed
•Copper oxide	1317-38-0	Not Listed
•Copper	7440-50-8	Not Listed
•Cadmium (pyrophoric)	7440-43-9	4.1 µg/day MADL (oral)
•Lead, powder	7439-92-1	0.5 µg/day MADL
•Talc	14807-96-6	Not Listed
•Zinc oxide	1314-13-2	Not Listed
•Asphalt	8052-42-4	Not Listed
•Carbonic acid, magnesium salt (1:1)	546-93-0	Not Listed
•Zinc powder, stabilized	7440-66-6	Not Listed
•Mineral oil, white	8042-47-5	Not Listed
•Iron	7439-89-6	Not Listed
•Zinc O,O-bis(mixed iso-butyl and pentyl) phosphorodithioate	68457-79-4	Not Listed
•Ethene, homopolymer	9002-88-4	Not Listed
•Crystalline silica	14808-60-7	Not Listed
•Graphite	7782-42-5	Not Listed
•Naturally occurring mineral (inert ash)	999999-99-4	Not Listed
U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)		
•Chlorite	1318-59-8	Not Listed
•Dolomite	16389-88-1	Not Listed
•Copper oxide	1317-38-0	Not Listed
•Copper	7440-50-8	Not Listed
•Cadmium (pyrophoric)	7440-43-9	0.05 µg/day NSRL (inhalation)
•Lead, powder	7439-92-1	15 µg/day NSRL (oral)
•Talc	14807-96-6	Not Listed
•Zinc oxide	1314-13-2	Not Listed
•Asphalt	8052-42-4	Not Listed
•Carbonic acid, magnesium salt (1:1)	546-93-0	Not Listed
•Zinc powder, stabilized	7440-66-6	Not Listed
•Mineral oil, white	8042-47-5	Not Listed
•Iron	7439-89-6	Not Listed
•Zinc O,O-bis(mixed iso-butyl and pentyl) phosphorodithioate	68457-79-4	Not Listed

•Ethene, homopolymer	9002-88-4	Not Listed
•Crystalline silica	14808-60-7	Not Listed
•Graphite	7782-42-5	Not Listed
•Naturally occurring mineral (inert ash)	999999-99-4	Not Listed
U.S. - California - Proposition 65 - Reproductive Toxicity - Female		
•Chlorite	1318-59-8	Not Listed
•Dolomite	16389-88-1	Not Listed
•Copper oxide	1317-38-0	Not Listed
•Copper	7440-50-8	Not Listed
•Cadmium (pyrophoric)	7440-43-9	Not Listed
•Lead, powder	7439-92-1	female reproductive toxicity 2/27/87
•Talc	14807-96-6	Not Listed
•Zinc oxide	1314-13-2	Not Listed
•Asphalt	8052-42-4	Not Listed
•Carbonic acid, magnesium salt (1:1)	546-93-0	Not Listed
•Zinc powder, stabilized	7440-66-6	Not Listed
•Mineral oil, white	8042-47-5	Not Listed
•Iron	7439-89-6	Not Listed
•Zinc O,O-bis(mixed iso-butyl and pentyl) phosphorodithioate	68457-79-4	Not Listed
•Ethene, homopolymer	9002-88-4	Not Listed
•Crystalline silica	14808-60-7	Not Listed
•Graphite	7782-42-5	Not Listed
•Naturally occurring mineral (inert ash)	999999-99-4	Not Listed
U.S. - California - Proposition 65 - Reproductive Toxicity - Male		
•Chlorite	1318-59-8	Not Listed
•Dolomite	16389-88-1	Not Listed
•Copper oxide	1317-38-0	Not Listed
•Copper	7440-50-8	Not Listed
•Cadmium (pyrophoric)	7440-43-9	male reproductive toxicity, 5/1/97
•Lead, powder	7439-92-1	male reproductive toxicity, 2/27/87
•Talc	14807-96-6	Not Listed
•Zinc oxide	1314-13-2	Not Listed
•Asphalt	8052-42-4	Not Listed
•Carbonic acid, magnesium salt (1:1)	546-93-0	Not Listed
•Zinc powder, stabilized	7440-66-6	Not Listed
•Mineral oil, white	8042-47-5	Not Listed
•Iron	7439-89-6	Not Listed
•Zinc O,O-bis(mixed iso-butyl and pentyl) phosphorodithioate	68457-79-4	Not Listed
•Ethene, homopolymer	9002-88-4	Not Listed
•Crystalline silica	14808-60-7	Not Listed
•Graphite	7782-42-5	Not Listed
•Naturally occurring mineral (inert ash)	999999-99-4	Not Listed

15.2 Chemical Safety Assessment

- No Chemical Safety Assessment has been carried out.

15.3 Other Information

- WARNING: This product contains a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

Section 16 - Other Information

Relevant Phrases (code & full text)

- H350i - May cause cancer by inhalation.
- H372 - Causes damage to organs through prolonged or repeated exposure.

Revision Date

- 06/July/2018

Last Revision Date

- 06/July/2018

Preparation Date

- 01/August/2016

**Disclaimer/Statement
of Liability**

- The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Key to abbreviations

NDA = No Data Available