

## Safety Data Sheet



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

#### 1.1 Product identifier

- Product Name** • Tuf-Lon
- Synonyms** • Grease; Lubricant; Sealant

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

- Relevant identified use(s)** • Lubricate and seal pipe threads

#### 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.topcoilsite.com  
 msds@topcoilsite.com
- Telephone (General)** • 403-219-0255

#### 1.4 Emergency telephone number

- Manufacturer** • 403-219-0255 - 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

#### 2.2 Label Elements

**CLP**

#### WARNING



- Hazard statements** • H351 - Suspected of causing cancer.

#### Precautionary statements

- Prevention** • P201 - Obtain special instructions before use.  
 P202 - Do not handle until all safety precautions have been read and understood.  
 P280 - Wear protective gloves/protective clothing/eye protection/face protection.
- Response** • P308+P313 - IF exposed or concerned: Get medical advice/attention.
- 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**
- Carcinogenicity 2

### 2.2 Label elements

**UN GHS**

#### WARNING



- Hazard statements**
- Suspected of causing cancer.

#### 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

- 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

### 2.2 Label elements

**OSHA HCS 2012**

#### WARNING



- Hazard statements**
- Suspected of causing cancer.

#### 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

## 2.2 Label elements

### WHMIS 2015

### WARNING



- Hazard statements** • Suspected of causing cancer.

### 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

### WHMIS 2015

- In Canada, the product mentioned above is considered hazardous under the Workplace Hazardous Materials Information System (WHMIS).

## 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	60.1% TO 60.9%	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	NDA

Ethene, homopolymer	CAS:9002-88-4	15% TO 30%	Ingestion/Oral-Rat LD50 • >8 g/kg Inhalation-Rat LC50• 75.5 g/m <sup>3</sup> 30 Minute(s)	RE 1 (Lungs/Inhl) EU CLP: Not Classified UN GHS Revision 4: Not Classified OSHA HCS 2012: Comb. Dust WHMIS 2015: Comb. Dust	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
Naturally occurring mineral (inert ash)	CAS:999999-99 -4	0.5% TO 8%	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	4.2%	Ingestion/Oral-Rat LD50 • >5000 mg/kg Skin-Rabbit LD50• 2000 mg/kg	EU CLP: Carc. 2 (Dermal), H351 UN GHS Revision 4: Carc. 2 (Dermal) OSHA HCS 2012: Carc. 2 (Dermal) WHMIS 2015: Carc. 2 (Dermal)	NDA
Zinc O,O-bis(mixed iso-butyl and pentyl) phosphorodithioate	CAS:68457-79- 4 EINECS:270-608 -0	1.071%	NDA	EU CLP: Not Classified UN GHS Revision 4: Acute Tox. 5 (Orl) OSHA HCS 2012: Not Classified WHMIS 2015: Not Classified	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.

#### 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
Asphalt (8052-42-4)	TWAs	0.5 mg/m <sup>3</sup> TWA (fume, inhalable particulate matter, as benzene-soluble aerosol)	0.5 mg/m <sup>3</sup> TWA [CMP] (Bitumen, inhalable fraction, as soluble aerosol in benzene)	5 mg/m <sup>3</sup> TWA (fume)	5 mg/m <sup>3</sup> TWA (Petroleum; Bitumen, fume)	0.5 mg/m <sup>3</sup> TWA (inhalable fume, as Benzene-soluble aerosol)
Graphite	TWAs	2 mg/m <sup>3</sup> TWA (all forms except graphite fibres, respirable particulate matter)	2 mg/m <sup>3</sup> TWA [CMP] (all forms except fibres, respirable fraction)	3 mg/m <sup>3</sup> TWA (containing no asbestos and <1% crystalline silica; all forms except fibres; natural and synthetic, respirable dust)	2 mg/m <sup>3</sup> TWA (all forms except Graphite fibres, respirable)	2 mg/m <sup>3</sup> TWA (all forms except Graphite fibres, respirable)
Crystalline silica (14808-60-7)	TWAs	0.025 mg/m <sup>3</sup> TWA (respirable particulate matter)	0.05 mg/m <sup>3</sup> TWA [CMP] (respirable fraction)	0.1 mg/m <sup>3</sup> TWA (respirable dust)	0.025 mg/m <sup>3</sup> TWA (respirable particulate)	0.025 mg/m <sup>3</sup> TWA (respirable)
Exposure Limits/Guidelines (Con't.)						
	Result	Canada Manitoba	Canada New Brunswick	Canada Northwest Territories	Canada Nova Scotia	Canada Nunavut
Asphalt (8052-42-4)	TWAs	0.5 mg/m <sup>3</sup> TWA (fume, inhalable particulate matter, as Benzene soluble aerosol)	5 mg/m <sup>3</sup> TWA (petroleum fumes)	0.5 mg/m <sup>3</sup> TWA (Bitumen, fume, as Benzene soluble aerosol (inhalable fraction))	0.5 mg/m <sup>3</sup> TWA (fume, inhalable particulate matter, as Benzene soluble aerosol)	0.5 mg/m <sup>3</sup> TWA (Bitumen, fume, as Benzene soluble aerosol (inhalable fraction))
	STELs	Not established	Not established	1.5 mg/m <sup>3</sup> STEL (Bitumen, fume, as Benzene soluble aerosol (inhalable fraction))	Not established	1.5 mg/m <sup>3</sup> STEL (Bitumen, fume, as Benzene soluble aerosol (inhalable fraction))
Graphite	TWAs	2 mg/m <sup>3</sup> TWA (all forms except Graphite fibres, respirable particulate matter)	2 mg/m <sup>3</sup> TWA (all forms except graphite fibres)	2 mg/m <sup>3</sup> TWA (natural, all forms, except Graphite fibres, respirable fraction)	2 mg/m <sup>3</sup> TWA (all forms except Graphite fibres, respirable particulate matter)	2 mg/m <sup>3</sup> TWA (natural, all forms, except Graphite fibres, respirable fraction)
	STELs	Not established	Not established	4 mg/m <sup>3</sup> STEL (natural, all forms, except Graphite fibres, respirable fraction)	Not established	4 mg/m <sup>3</sup> STEL (natural, all forms, except Graphite fibres, respirable fraction)
Crystalline silica (14808-60-7)	TWAs	0.025 mg/m <sup>3</sup> TWA (respirable particulate matter)	0.1 mg/m <sup>3</sup> TWA (respirable fraction)	0.05 mg/m <sup>3</sup> TWA (respirable fraction, listed under Silica - crystalline)	0.025 mg/m <sup>3</sup> TWA (respirable particulate matter)	0.05 mg/m <sup>3</sup> TWA (respirable fraction, listed under Silica - crystalline)
Exposure Limits/Guidelines (Con't.)						
	Result	Canada Ontario	Canada Quebec	Canada Saskatchewan	Canada Yukon	China
Asphalt	STELs	Not established	Not established	1.5 mg/m <sup>3</sup> STEL (fume and inhalable fraction, as Benzene soluble aerosol)	10 mg/m <sup>3</sup> STEL (fume)	12.5 mg/m <sup>3</sup> STEL (fume, as Benzene soluble matter)

(8052-42-4)	TWAs	0.5 mg/m <sup>3</sup> TWA (fume, inhalable, as Benzene-soluble aerosol)	5 mg/m <sup>3</sup> TWAEV (fume)	0.5 mg/m <sup>3</sup> TWA (fume and inhalable fraction, as Benzene soluble aerosol)	5 mg/m <sup>3</sup> TWA (fume)	5 mg/m <sup>3</sup> TWA (fume, as Benzene soluble matter)
Graphite	STELs	Not established	Not established	4 mg/m <sup>3</sup> STEL (natural, except Graphite fibres, respirable fraction)	Not established	8 mg/m <sup>3</sup> STEL (total dust); 4 mg/m <sup>3</sup> STEL (respirable dust)
	TWAs	2 mg/m <sup>3</sup> TWA (except Graphite fibres, respirable)	2 mg/m <sup>3</sup> TWAEV (containing no Asbestos and <1% Crystalline silica, except Graphite fibres, respirable dust)	2 mg/m <sup>3</sup> TWA (natural, except Graphite fibres, respirable fraction)	20 mppcf TWA; 30 mppcf TWA (synthetic); 10 mg/m <sup>3</sup> TWA (synthetic)	4 mg/m <sup>3</sup> TWA (total dust); 2 mg/m <sup>3</sup> TWA (respirable dust)
Ethene, homopolymer (9002-88-4)	STELs	Not established	Not established	Not established	Not established	10 mg/m <sup>3</sup> STEL (total dust)
	TWAs	Not established	Not established	Not established	Not established	5 mg/m <sup>3</sup> TWA (total dust)
Crystalline silica (14808-60-7)	STELs	Not established	Not established	Not established	Not established	2 mg/m <sup>3</sup> STEL (containing 10 - 50% free SiO <sub>2</sub> , total dust); 1.4 mg/m <sup>3</sup> STEL (containing 50 - 80% free SiO <sub>2</sub> , total dust); 1 mg/m <sup>3</sup> STEL (containing >80% free SiO <sub>2</sub> , total dust); 1.4 mg/m <sup>3</sup> STEL (containing 10 - 50% free SiO <sub>2</sub> , respirable dust); 0.6 mg/m <sup>3</sup> STEL (containing 50 - 80% free SiO <sub>2</sub> , respirable dust); 0.4 mg/m <sup>3</sup> STEL (containing >80% free SiO <sub>2</sub> , respirable dust)
	TWAs	0.10 mg/m <sup>3</sup> TWA (designated substances regulation, respirable, listed under Silica, crystalline)	0.1 mg/m <sup>3</sup> TWAEV (respirable dust)	0.05 mg/m <sup>3</sup> TWA (respirable fraction, listed under Silica - crystalline (Trydimite removed))	300 particle/mL TWA (listed under Silica - Quartz, crystalline)	0.7 mg/m <sup>3</sup> TWA (containing 50 - 80% free SiO <sub>2</sub> , total dust); 0.3 mg/m <sup>3</sup> TWA (containing 50 - 80% free SiO <sub>2</sub> , respirable dust); 1 mg/m <sup>3</sup> TWA (containing 10 - 50% free SiO <sub>2</sub> , total dust); 0.7 mg/m <sup>3</sup> TWA (containing 10 - 50% free SiO <sub>2</sub> , respirable dust); 0.5 mg/m <sup>3</sup> TWA (containing >80% free SiO <sub>2</sub> , total dust); 0.2 mg/m <sup>3</sup> TWA (containing >80% free SiO <sub>2</sub> , respirable dust)

Exposure Limits/Guidelines (Con't.)						
	Result	France	Germany DFG	India	Indonesia	Israel
Asphalt (8052-42-4)	TWAs	Not established	Not established	Not established	0.5 mg/m3 TWA (soluble aerosol, fume)	0.5 mg/m3 TWA (fume, inhalable fraction, as benzene soluble aerosol)
Graphite (7782-42-5)	TWAs	2 mg/m3 TWA [VME] (alveolar fraction)	Not established	Not established	2 mg/m3 TWA	2 mg/m3 TWA (respirable fraction, all forms except graphite fibers)
	MAKs	Not established	1.5 mg/m3 TWA MAK (respirable fraction); 4 mg/m3 TWA MAK (inhalable fraction)	Not established	Not established	Not established
Crystalline silica (14808-60-7)	TWAs	0.1 mg/m3 TWA [VME] (restrictive limit, alveolar fraction)	Not established	(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)
Exposure Limits/Guidelines (Con't.)						
	Result	Japan	Malaysia	Mexico	Netherlands	NIOSH
Asphalt (8052-42-4)	STELs	Not established	Not established	10 mg/m3 STEL [PPT-CT]	Not established	Not established
	TWAs	Not established	5 mg/m3 TWA (fume)	5 mg/m3 TWA VLE-PPT	Not established	Not established
	Ceilings	Not established	Not established	Not established	Not established	5 mg/m3 Ceiling (fume, 15 min)
Graphite (7782-42-5)	TWAs	2 mg/m3 OEL (Class 1 Dust, total dust); 0.5 mg/m3 OEL (Class 1 Dust, respirable dust)	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)
Crystalline silica (14808-60-7)	TWAs	0.03 mg/m3 OEL (respirable dust) as <i>Silica, crystalline (general form)</i>	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)
Exposure Limits/Guidelines (Con't.)						
	Result	OSHA	OSHA Vacated	Portugal	Russia	Singapore
Asphalt (8052-42-4)	TWAs	Not established	Not established	0.5 mg/m3 TWA [VLE-MP] (fumes, inhalable fraction, as Benzene soluble aerosol)	Not established	5 mg/m3 PEL (fume)
Graphite	TWAs	15 mg/m3 TWA (synthetic, total dust); 5 mg/m3 TWA (synthetic, respirable fraction)	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)



Crystalline silica	TWAs	50 µg/m <sup>3</sup> TWA (listed under Respirable crystalline silica)	0.1 mg/m <sup>3</sup> TWA (respirable dust)	0.025 mg/m <sup>3</sup> TWA [VLE-MP] (respirable fraction)	1 mg/m <sup>3</sup> TWA (quartz glass, disintegration aerosol, total mass of aerosols, listed under Silicon dioxide amorphous and vitreous); 1 mg/m <sup>3</sup> TWA (containing >70% Silicon dioxide in dust, total mass of aerosols, listed under Crystalline silicon dioxide)	0.1 mg/m <sup>3</sup> PEL (respirable dust)
	STELs	Not established	Not established	Not established	3 mg/m <sup>3</sup> STEL (quartz glass, disintegration aerosol, total mass of aerosols, listed under Silicon dioxide amorphous and vitreous); 3 mg/m <sup>3</sup> STEL (containing >70% Silicon dioxide in dust, total mass of aerosols, listed under Silicon dioxide crystalline)	Not established

### Exposure Limits/Guidelines (Con't.)

	Result	Thailand	United Kingdom	United States - California	Venezuela
Asphalt (8052-42-4)	TWAs	0.5 mg/m <sup>3</sup> TWA (as Benzene soluble aerosol)	5 mg/m <sup>3</sup> TWA (fumes)	5 mg/m <sup>3</sup> PEL (fume)	0.5 mg/m <sup>3</sup> TWA [VTRE-L-8/40 (fume, as Benzene soluble aerosols)
	STELs	Not established	10 mg/m <sup>3</sup> STEL (fumes)	Not established	Not established
Graphite (7782-42-5)	TWAs	Not established	10 mg/m <sup>3</sup> TWA (inhalable dust); 4 mg/m <sup>3</sup> TWA (respirable dust)	2.5 mg/m <sup>3</sup> PEL (natural, respirable dust); 10 mg/m <sup>3</sup> PEL (synthetic total dust); 5 mg/m <sup>3</sup> PEL (synthetic respirable fraction)	2 mg/m <sup>3</sup> TWA [VTRE-L-8/40 (dust)]
	STELs	Not established	30 mg/m <sup>3</sup> STEL (calculated, inhalable dust); 12 mg/m <sup>3</sup> STEL (calculated, respirable dust)	Not established	Not established
Crystalline silica	TWAs	0.025 mg/m <sup>3</sup> TWA (respirable dust)	0.1 mg/m <sup>3</sup> TWA (respirable) <i>as Silica, crystalline (general form)</i>	0.3 mg/m <sup>3</sup> PEL (total dust); 0.1 mg/m <sup>3</sup> PEL (respirable dust)	0.025 mg/m <sup>3</sup> TWA [VTRE-L-8/40 (respirable fraction)]
	STELs	Not established	0.3 mg/m <sup>3</sup> STEL (calculated, respirable) <i>as Silica, crystalline (general form)</i>	Not established	Not established

### Exposure Control Notations Japan

- Crystalline silica as Silica, crystalline (general form): **Carcinogens:** (Group 1 - Carcinogenic to Humans)

#### Mexico

- Asphalt (8052-42-4): **Carcinogens:** (A4 - Not classifiable as a human carcinogen)

#### Egypt

- Graphite (7782-42-5): **Nuisance Dusts:** (10 mg/m<sup>3</sup> TWA (synthetic, containing <1% Quartz, total dust); 30 mppcf TWA (synthetic, containing <1% Quartz, total dust); 3 mg/m<sup>3</sup> TWA (synthetic, containing <1% Quartz, total dust))

#### Portugal

- Crystalline silica (14808-60-7): **Carcinogens:** (A2 - Suspected Human Carcinogen)
- Asphalt (8052-42-4): **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen (fumes))

#### Indonesia

- Asphalt (8052-42-4): **Carcinogens:** (A4 - not classifiable as a human carcinogen)

#### Argentina

- Crystalline silica (14808-60-7): **Carcinogens:** (A2 - Suspected 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))

#### 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)
- 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)
- Asphalt (8052-42-4): **Carcinogens:** (A4 Not Classifiable as a Human Carcinogen (fume, Coal tar-free))

#### Canada New Brunswick

- 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)
- 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/m<sup>3</sup> TWA (respirable fraction, listed under Silica, crystalline))

#### Canada Quebec

- Crystalline silica (14808-60-7): **Carcinogens:** (C2 carcinogen - effect suspected in humans)

#### Canada Saskatchewan

- Crystalline silica as Silica, crystalline (general form): **Designated Substances:** (Present (respirable size))

#### Venezuela

- Crystalline silica (14808-60-7): **Ceilings:** (Present)
- Asphalt (8052-42-4): **Ceilings:** (Present)

#### ACGIH

- Crystalline silica (14808-60-7): **Carcinogens:** (A2 - Suspected Human Carcinogen)
- Asphalt (8052-42-4): **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen (fume, coal tar-free))

#### Germany DFG

- 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))
- 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/m<sup>3</sup> TWA (total dust); 50 mppcf TWA (total dust); 5 mg/m<sup>3</sup> TWA (respirable dust))
- Crystalline silica (14808-60-7): **Mineral Dusts:** (TWA ((250/(%SiO<sub>2</sub> + 5)), mppcf, respirable dust); TWA ((10/(%SiO<sub>2</sub> + 2)), mg/m<sup>3</sup>, respirable dust); TWA ((30/(%SiO<sub>2</sub> + 2)), mg/m<sup>3</sup>, total dust))

**Israel**

•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))

**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/m<sup>3</sup> TWA (respirable fraction); 50 mppcf TWA (total dust); 15 mg/m<sup>3</sup> TWA (total dust))

•Crystalline silica (14808-60-7): **Mineral Dusts:** ((250)/( %SiO<sub>2</sub> + 5) mppcf TWA, respirable fraction; (10)/( %SiO<sub>2</sub> + 2) mg/m<sup>3</sup> TWA, respirable fraction)

**ACGIH**

•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)

•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))

**8.2 Exposure controls****Engineering Measures/Controls**

- 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.

**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

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

BEI = Biological Exposure Indices

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

MAK = Maximale Arbeitsplatz Konzentration is the maximum permissible concentration

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

NIOSH = National Institute of Occupational Safety and Health

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

OSHA = Occupational Safety and Health Administration

TWAEV = Time-Weighted Average Exposure Value

**Section 9 - Physical and Chemical Properties****9.1 Information on Basic Physical and Chemical Properties**

<b>Material Description</b>			
Physical Form	Solid	Appearance/Description	Black semi-solid paste with mild petroleum odor.
Color	Black	Odor	Mild, petroleum.
Odor Threshold	Data lacking		
<b>General Properties</b>			
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		
<b>Flammability</b>			
Flash Point	Data lacking	UEL	Data lacking
LEL	Data lacking	Autoignition	Data lacking
Flammability (solid, gas)	Data lacking		
<b>Environmental</b>			
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.

## Section 11 - Toxicological Information

### 11.1 Information on toxicological effects

Components	
Crystalline silica (60.1% TO 60.9%)	<p>14808-60-7</p> <p><b>Acute Toxicity:</b> Inhalation-Human TCLo • 16 mppcf 8 Hour(s) 17.9 Year(s)-Intermittent; <i>Lungs, Thorax, or Respiration:Fibrosis, focal (pneumoconiosis)</i>; <i>Lungs, Thorax, or Respiration:Cough</i>; <i>Lungs, Thorax, or Respiration:Dyspnea</i>; Inhalation-Rat TCLo • 200 mg/kg; <i>Lungs, Thorax, or Respiration:Fibrosis, focal (pneumoconiosis)</i>; <i>Lungs, Thorax, or Respiration:Other changes</i>; <i>Nutritional and Gross Metabolic:Changes in Chemistry or Temperature:Fe</i>;</p> <p><b>Multi-dose Toxicity:</b> Inhalation-Rat TCLo • 80 mg/m<sup>3</sup> 26 Week(s)-Intermittent; <i>Lungs, Thorax, or Respiration:Fibrosis, focal (pneumoconiosis)</i>; <i>Blood:Changes in spleen</i>; <i>Immunological Including Allergic:Decrease in cellular immune response</i>; Inhalation-Rat TCLo • 6.2 mg/m<sup>3</sup> 6 Hour(s) 6 Week(s)-Intermittent; <i>Lungs, Thorax, or Respiration:Other changes</i>; <i>Blood:Changes in spleen</i>; <i>Immunological Including Allergic:Increase in cellular immune response</i>;</p> <p><b>Mutagen:</b> Micronucleus test • Unreported Route-Hamster • Lung (Somatic cell) • 160 µg/cm<sup>3</sup>; 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<sup>3</sup>;</p> <p><b>Tumorigen / Carcinogen:</b> Inhalation-Rat TCLo • 50 mg/m<sup>3</sup> 6 Hour(s) 71 Week(s)-Intermittent; <i>Tumorigenic:Carcinogenic by RTECS criteria</i>; <i>Liver:Tumors</i></p>
	<p><b>Acute Toxicity:</b> Ingestion/Oral-Rat LD50 • &gt;8 g/kg; Ingestion/Oral-Mouse TDLo • 2500 mg/kg; <i>Kidney, Ureter, and Bladder:Changes in tubules (including acute renal failure, acute tubular necrosis)</i>; <i>Blood:Changes in spleen</i>; <i>Biochemical:Metabolism (intermediary):Other proteins</i>; Inhalation-Rat LC50 •</p>

Ethene, homopolymer (15% TO 30%)	9002-88-4	75.5 g/m <sup>3</sup> 30 Minute(s); <b>Tumorigen / Carcinogen:</b> Implant-Rat • 2120 mg/kg; <i>Tumorigenic:Equivocal tumorigenic agent by RTECS criteria; Blood:Lymphoma, including Hodgkin's disease; Tumorigenic:Tumors at site of application;</i> Implant-Rat • 1000 mg/kg; <i>Tumorigenic:Equivocal tumorigenic agent by RTECS criteria; Tumorigenic:Tumors at site of application;</i> Implant-Rat TDLo • 33 mg/kg; <i>Tumorigenic:Equivocal tumorigenic agent by RTECS criteria; Tumorigenic:Tumors at site of application</i>
Asphalt (4.2%)	8052-42-4	<b>Acute Toxicity:</b> Ingestion/Oral-Rat LD50 • >5000 mg/kg; <i>Gastrointestinal:Hypermotility, diarrhea;</i> <b>Multi-dose Toxicity:</b> Inhalation-Rat TCLo • 100 mg/m <sup>3</sup> 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 <sup>3</sup> 5.5 Year(s)-Intermittent; <i>Sense Organs and Special Senses:Eye:Conjunctive irritation; Lungs, Thorax, or Respiration:Cough; Gastrointestinal:Changes in structure or function of salivary glands;</i> <b>Tumorigen / Carcinogen:</b> 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 (1.071%)	68457-79-4	<b>Acute Toxicity:</b> 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
<b>Acute toxicity</b>	EU/CLP • Data lacking UN GHS 4 • Data lacking OSHA HCS 2012 • Data lacking WHMIS 2015 • Data lacking
<b>Skin corrosion/Irritation</b>	EU/CLP • Data lacking UN GHS 4 • Data lacking OSHA HCS 2012 • Data lacking WHMIS 2015 • Data lacking
<b>Serious eye damage/Irritation</b>	EU/CLP • Data lacking UN GHS 4 • Data lacking OSHA HCS 2012 • Data lacking WHMIS 2015 • Data lacking
<b>Skin sensitization</b>	EU/CLP • Data lacking UN GHS 4 • Data lacking OSHA HCS 2012 • Data lacking WHMIS 2015 • Data lacking
<b>Respiratory sensitization</b>	EU/CLP • Data lacking UN GHS 4 • Data lacking OSHA HCS 2012 • Data lacking WHMIS 2015 • Data lacking
<b>Aspiration Hazard</b>	EU/CLP • Data lacking UN GHS 4 • Data lacking OSHA HCS 2012 • Data lacking WHMIS 2015 • Data lacking
<b>Carcinogenicity</b>	EU/CLP • Carcinogenicity 2; Suspected of causing cancer UN GHS 4 • Carcinogenicity 2 OSHA HCS 2012 • Carcinogenicity 2 WHMIS 2015 • Carcinogenicity 2
	EU/CLP • Data lacking

<b>Germ Cell Mutagenicity</b>	UN GHS 4 • Data lacking OSHA HCS 2012 • Data lacking WHMIS 2015 • Data lacking
<b>Toxicity for Reproduction</b>	EU/CLP • Data lacking UN GHS 4 • Data lacking OSHA HCS 2012 • Data lacking WHMIS 2015 • Data lacking
<b>STOT-SE</b>	EU/CLP • Data lacking UN GHS 4 • Data lacking OSHA HCS 2012 • Data lacking WHMIS 2015 • Data lacking
<b>STOT-RE</b>	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)** • Under normal conditions of use, no health effects are expected.
- 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	IARC	NTP
Asphalt	8052-42-4	Group 2B-Possible Carcinogen	Not Listed
Crystalline silica	14808-60-7	Group 1-Carcinogenic	Known Human Carcinogen

#### Key to abbreviations

LC = Lethal Concentration  
LD = Lethal Dose  
TC = Toxic Concentration  
TD = Toxic Dose

## Section 12 - Ecological Information

### 12.1 Toxicity

- Material data lacking.

### 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	Not Applicable	Not Regulated	Not Applicable	Not Applicable	NDA
TDG	Not Applicable	Not Regulated	Not Applicable	Not Applicable	NDA
IMO/IMDG	Not Applicable	Not Regulated	Not Applicable	Not Applicable	NDA
IATA/ICAO	Not Applicable	Not Regulated	Not Applicable	Not Applicable	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
Crystalline silica	14808-60-7	Yes
Ethene, homopolymer	9002-88-4	No
Graphite	7782-42-5	Yes
Naturally occurring mineral (inert ash)	999999-99-4	No
Zinc O,O-bis(mixed		



iso-butyl and pentyl) phosphorodithioate	68457-79-4	No
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Inventory						
Component	CAS	Australia AICS	Canada DSL	Canada NDSL	China	EU EINECS
Asphalt	8052-42-4	Yes	Yes	No	Yes	Yes
Crystalline silica	14808-60-7	Yes	Yes	No	Yes	Yes
Ethene, homopolymer	9002-88-4	Yes	Yes	No	Yes	No
Graphite	7782-42-5	Yes	Yes	No	Yes	Yes
Naturally occurring mineral (inert ash)	999999-99-4	No	No	No	No	Yes
Zinc O,O-bis(mixed iso-butyl and pentyl) phosphorodithioate	68457-79-4	Yes	Yes	No	Yes	Yes

Inventory (Con't.)				
Component	CAS	EU ELNICS	Japan ENCS	TSCA
Asphalt	8052-42-4	No	Yes	Yes
Crystalline silica	14808-60-7	No	Yes	Yes
Ethene, homopolymer	9002-88-4	No	Yes	Yes
Graphite	7782-42-5	No	No	Yes
Naturally occurring mineral (inert ash)	999999-99-4	No	No	No
Zinc O,O-bis(mixed iso-butyl and pentyl) phosphorodithioate	68457-79-4	No	Yes	Yes

## United States - California

### Environment

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

• Asphalt	8052-42-4	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

• Asphalt	8052-42-4	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)

• Asphalt	8052-42-4	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
<b>U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)</b>		
• Asphalt	8052-42-4	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
<b>U.S. - California - Proposition 65 - Reproductive Toxicity - Female</b>		
• Asphalt	8052-42-4	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
<b>U.S. - California - Proposition 65 - Reproductive Toxicity - Male</b>		
• Asphalt	8052-42-4	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.

## 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

- 18/September/2018

### Last Revision Date

- 18/September/2018

### Preparation Date

- 18/September/2018

### 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