

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

### 1.1 Product identifier

**Product Name**

• **TK II Modified®**

**Synonyms**

• Anti-Seize; Lubricant; Sealant; Thread Compound

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

**Relevant identified use(s)**

• Anti-Seize, Lubricant, Sealant, high temperature casing & tubing compound

### 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

**Poison & Drug Information Service (Alberta Health Services)**

• 1-800-332-1414

## 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**

• Hazardous to the aquatic environment Acute 1 - H400  
Hazardous to the aquatic environment Chronic 1 - H410

### 2.2 Label Elements

**CLP**

#### WARNING



**Hazard statements** • H400 - Very toxic to aquatic life  
H410 - Very toxic to aquatic life with long lasting effects

#### Precautionary statements

**Prevention** • P273 - Avoid release to the environment.

**Response** • P391 - Collect spillage.

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

## 2.3 Other Hazards

- CLP**
- Heating above the melting point releases metallic oxides which may cause metal fume fever by inhalation. The symptoms are shivering, fever, malaise and muscular pain. 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**
- Acute Toxicity Oral 4
  - Skin Mild Irritation 3
  - Hazardous to the aquatic environment Acute 1
  - Hazardous to the aquatic environment Chronic 1

### 2.2 Label elements

**UN GHS**

#### **WARNING**



- Hazard statements**
- Harmful if swallowed
  - Causes mild skin irritation
  - Very toxic to aquatic life
  - Very toxic to aquatic life with long lasting effects

#### **Precautionary statements**

- Prevention**
- Wash thoroughly after handling.
  - Do not eat, drink or smoke when using this product.
  - Avoid release to the environment.
- Response**
- If skin irritation occurs: Get medical advice/attention.
  - IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
  - Rinse mouth.
  - Collect spillage.

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

- Supplemental information**
- 60.7 - 66.9 percent of this product consists of an ingredient of unknown toxicity.

## 2.3 Other hazards

- UN GHS**
- Heating above the melting point releases metallic oxides which may cause metal fume fever by inhalation. The symptoms are shivering, fever, malaise and muscular pain. 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**
- Acute Toxicity Oral 4
  - Hazards Not Otherwise Classified - Health Hazards - Metal fume fever

## 2.2 Label elements

OSHA HCS 2012

### WARNING



**Hazard statements** • Harmful if swallowed

#### Precautionary statements

**Prevention** • Wash thoroughly after handling.  
Do not eat, drink or smoke when using this product.

**Response** • IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician if you feel unwell.  
Rinse mouth.

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

**Supplemental information** • 60.7 - 66.9 percent of this product consists of an ingredient of unknown toxicity.

## 2.3 Other hazards

OSHA HCS 2012 • Heating above the melting point releases metallic oxides which may cause metal fume fever by inhalation. The symptoms are shivering, fever, malaise and muscular pain. Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.

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## Canada

According to: WHMIS 2015

## 2.1 Classification of the substance or mixture

WHMIS 2015 • Acute Toxicity Oral 4  
Health Hazards Not Otherwise Classified 1

## 2.2 Label elements

WHMIS 2015

### DANGER



**Hazard statements** • Harmful if swallowed  
Heating above the melting point releases metallic oxides which may cause metal fume fever by inhalation. The symptoms are shivering, fever, malaise and muscular pain

#### Precautionary statements

**Prevention** • Wash thoroughly after handling.  
Do not eat, drink or smoke when using this product.

**Response** • IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.  
Rinse mouth.

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

**Supplemental information** • 60.7 - 66.9 percent of this product consists of an ingredient of unknown toxicity.

## 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
Mineral oil, petroleum distillates, solvent-refined (mild) heavy paraffinic	<b>CAS:</b> 64741-88-4 <b>EC Number:</b> 265-090-8 <b>EU Index:</b> 649-454-00-7	21% TO 27%	Ingestion/Oral-Rat LD50 • >5000 mg/kg Skin-Rabbit LD50 • >2000 mg/kg	<b>EU CLP:</b> Annex VI, Table 3.1: Carc. 1B, H350 <b>UN GHS Revision 4:</b> Skin Irrit. 3; Asp. Tox. 2 <b>OSHA HCS 2012:</b> Not Classified <b>WHMIS 2015:</b> Not Classified	this ingredient contains < 3% DMSO
Zinc powder, stabilized	<b>CAS:</b> 7440-66-6 <b>EC Number:</b> 231-175-3	> 25%	NDA	<b>EU CLP:</b> Annex VI, Table 3.1: Aquatic Acute 1, H400; Aquatic Chronic 1, H410 <b>UN GHS Revision 4:</b> Skin Irrit. 3; Aquatic Acute 1; Aquatic Chronic 1 <b>OSHA HCS 2012:</b> Comb. Dust; Hazard Not Otherwise Classified - Health Hazard - Metal fume fever <b>WHMIS 2015:</b> Comb. Dust; Hazard Not Otherwise Classified - Health Hazard - Metal fume fever	NDA
Graphite	<b>CAS:</b> 7782-42-5 <b>EC Number:</b> 231-955-3	> 15%	NDA	<b>EU CLP:</b> STOT RE 1 (Lungs / Inhl), H372 <b>UN GHS Revision 4:</b> STOT RE 1 (Lungs / Inhl) <b>OSHA HCS 2012:</b> Comb. Dust; STOT RE 1 (Lungs / Inhl) <b>WHMIS 2015:</b> Comb. Dust; STOT RE 1 (Lungs / Inhl)	NDA
Copper oxide	<b>CAS:</b> 1317-38-0 <b>EINECS:</b> 215-269-1	10% TO 15%	Ingestion/Oral-Rat LD50 • 470 mg/kg	<b>EU CLP:</b> Annex VI, Table 3.1: Aquatic Acute 1, H400; Aquatic Chronic 1, H410 <b>UN GHS Revision 4:</b> Acute Tox. 4 (Orl); Aquatic Acute 1; Aquatic Chronic 1 <b>OSHA HCS 2012:</b> Acute Tox. 4 (Orl) <b>WHMIS 2015:</b> Acute Tox. 4 (Orl)	NDA
Calcium monocarbonate	<b>CAS:</b> 471-34-1 <b>EC Number:</b> 207-439-9	1.5% TO 3%	Ingestion/Oral-Rat LD50 • 6450 mg/kg	<b>EU CLP:</b> Skin Irrit. 2, H315; Eye Irrit. 2, H319 <b>UN GHS Revision 4:</b> Skin Irrit. 2; Eye Irrit. 2 <b>OSHA HCS 2012:</b> Skin Irrit. 2; Eye Irrit. 2 <b>WHMIS 2015:</b> Skin Irrit. 2; Eye Irrit. 2	NDA
Sulfonic acid, petroleum, calcium salt	<b>CAS:</b> 61789-86-4 <b>EINECS:</b> 263-093-9	0.3% TO 1.5%	NDA	<b>EU CLP:</b> Not Classified <b>UN GHS Revision 4:</b> Not Classified <b>OSHA HCS 2012:</b> Not Classified <b>WHMIS 2015:</b> Not Classified	NDA
Benzenesulfonic acid, dodecyl-, calcium salt	<b>CAS:</b> 26264-06-2	0.3% TO 1.5%	Ingestion/Oral-Rat LD50 • 1300 mg/kg	<b>EU CLP:</b> Acute Tox. 4, H302 <b>UN GHS Revision 4:</b> Acute Tox. 4 (orl); Aquatic Acute 2	NDA

	<b>EINECS:</b> 247-557-8			<b>OSHA HCS 2012:</b> Acute Tox. 4 (orl) <b>WHMIS 2015:</b> Acute Tox. 4 (orl)	
Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts	<b>CAS:</b> 68584-23-6 <b>EINECS:</b> 271-529-4	0.3% TO 1.5%	NDA	<b>EU CLP:</b> Not Classified <b>UN GHS Revision 4:</b> Not Classified <b>OSHA HCS 2012:</b> Not Classified <b>WHMIS 2015:</b> 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** • The product itself does not burn.
- Hazardous Combustion Products** • Hazardous decomposition products formed under fire conditions: Carbon oxides.

### 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
Calcium monocarbonate (471-34-1)	TWAs	Not established	Not established	10 mg/m <sup>3</sup> TWA (containing no asbestos and <1% crystalline silica, inhalable dust)	10 mg/m <sup>3</sup> TWA	Not established
Copper oxide	TWAs	1 mg/m <sup>3</sup> TWA (dust and mist, as Cu) <i>as Copper compounds</i>	Not established	Not established	Not established	Not established
Graphite	TWAs	2 mg/m <sup>3</sup> TWA (all forms except graphite fibers, respirable particulate matter)	2 mg/m <sup>3</sup> TWA [CMP] (all forms except fibers, 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)
Exposure Limits/Guidelines (Con't.)						
	Result	Canada Manitoba	Canada New Brunswick	Canada Northwest Territories	Canada Nova Scotia	Canada Nunavut
Calcium monocarbonate (471-34-1)	STELs	Not established	Not established	20 mg/m <sup>3</sup> STEL (listed under Limestone)	Not established	20 mg/m <sup>3</sup> STEL (listed under Limestone)
	TWAs	Not established	Not established	10 mg/m <sup>3</sup> TWA (listed under Limestone)	Not established	10 mg/m <sup>3</sup> TWA (listed under Limestone)
Copper oxide	TWAs	1 mg/m <sup>3</sup> TWA (dust and mist, as Cu) <i>as Copper compounds</i>	Not established	Not established	1 mg/m <sup>3</sup> TWA (dust and mist, as Cu) <i>as Copper compounds</i>	Not established
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,	Not established	4 mg/m <sup>3</sup> STEL (natural, all forms,

				except Graphite fibres, respirable fraction)		except Graphite fibres, respirable fraction)
Exposure Limits/Guidelines (Con't.)						
	Result	Canada Ontario	Canada Quebec	Canada Saskatchewan	Canada Yukon	China
Calcium monocarbonate (471-34-1)	TWAs	Not established	10 mg/m3 TWAEV (total dust)	10 mg/m3 TWA (listed under Limestone)	30 mppcf TWA; 10 mg/m3 TWA	Not established
	STELs	Not established	Not established	20 mg/m3 STEL (listed under Limestone)	20 mg/m3 STEL	Not established
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)
Exposure Limits/Guidelines (Con't.)						
	Result	France	Germany DFG	Germany TRGS	Indonesia	Israel
Sulfonic acid, petroleum, calcium salt (61789-86-4)	TWAs	Not established	Not established	5 mg/m3 TWA AGW (respirable fraction, exposure factor 4)	Not established	Not established
	Ceilings	Not established	20 mg/m3 Peak (respirable fraction)	Not established	Not established	Not established
	MAKs	Not established	5 mg/m3 TWA MAK (respirable fraction)	Not established	Not established	Not established
Calcium monocarbonate (471-34-1)	TWAs	10 mg/m3 TWA [VME]	Not established	Not established	Not established	Not established
Copper oxide	TWAs	Not established	Not established	Not established	Not established	1 mg/m3 TWA (dust and mist, as Cu) <i>as Copper compounds</i>
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
Zinc powder, stabilized (7440-66-6)	Ceilings	Not established	0.4 mg/m3 Peak (respirable fraction); 4 mg/m3 Peak (inhalable fraction)	Not established	Not established	Not established
	MAKs	Not established	0.1 mg/m3 TWA MAK (respirable fraction); 2 mg/m3 TWA MAK (inhalable fraction)	Not established	Not established	Not established
Exposure Limits/Guidelines (Con't.)						
	Result	Japan	Malaysia	Mexico	NIOSH	OSHA
Calcium monocarbonate (471-34-1)	TWAs	Not established	Not established	Not established	10 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable dust)	Not established
Copper oxide	TWAs	Not established	Not established	Not established	0.1 mg/m3 TWA (fume, as Cu)	Not established

Graphite	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)	2.5 mg/m3 TWA (natural, respirable dust)	15 mg/m3 TWA (synthetic, total dust); 5 mg/m3 TWA (synthetic, respirable fraction)
Exposure Limits/Guidelines (Con't.)						
	Result	OSHA Vacated	Portugal	Singapore	United Kingdom	United States - California
Calcium monocarbonate (471-34-1)	TWAs	Not established	10 mg/m3 TWA [VLE-MP] (particulate matter containing no Asbestos and <1% Crystalline silica)	Not established	Not established	5 mg/m3 PEL (respirable fraction, listed under Particulates not otherwise regulated); 10 mg/m3 PEL (total dust, listed under Particulates not otherwise regulated)
Graphite (7782-42-5)	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 fibres, respirable fraction)	2 mg/m3 PEL (respirable dust)	10 mg/m3 TWA (inhalable dust); 4 mg/m3 TWA (respirable dust)	2.5 mg/m3 PEL (natural, respirable dust); 10 mg/m3 PEL (synthetic total dust); 5 mg/m3 PEL (synthetic respirable fraction)
	STELs	Not established	Not established	Not established	30 mg/m3 STEL (calculated, inhalable dust); 12 mg/m3 STEL (calculated, respirable dust)	Not established
Exposure Limits/Guidelines (Con't.)						
	Result	Venezuela				
Calcium monocarbonate (471-34-1)	TWAs	10 mg/m3 TWA [VTRE-L-8/40]				
Graphite	TWAs	2 mg/m3 TWA [VTRE-L-8/40] (dust)				

## 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))

### 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))

•Calcium monocarbonate (471-34-1): **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))

### Germany DFG

•Zinc powder, stabilized (7440-66-6): **Pregnancy:** (no risk to embryo/fetus if exposure limits adhered to (respirable; inhalable))

•Graphite (7782-42-5): **Pregnancy:** (no risk to embryo/fetus if exposure limits adhered to (inhalable fraction; respirable fraction))

•Sulfonic acid, petroleum, calcium salt (61789-86-4): **Pregnancy:** (classification not yet possible (respirable fraction))

## Exposure Limits Supplemental

### Thailand

•Graphite (7782-42-5): **Mineral Dusts:** (15 mppcf TWA)

•Graphite as Particulates not otherwise classified (PNO): **Mineral Dusts:** (15 mppcf TWA (respirable dust); 15 mg/m3 TWA (total dust); 50 mppcf TWA (total dust); 5 mg/m3 TWA (respirable dust))

### OSHA

•Graphite (7782-42-5): **Mineral Dusts:** (15 mppcf TWA (natural))

•Graphite as Particulates not otherwise classified (PNO): **Mineral Dusts:** (15 mppcf TWA (respirable fraction); 5 mg/m3 TWA (respirable fraction); 50 mppcf TWA (total dust); 15 mg/m3 TWA (total dust))

### ACGIH

•Graphite (7782-42-5): **TLV Basis - Critical Effects:** (pneumoconiosis (all forms except graphite fibers))

•Copper oxide as Copper compounds: **TLV Basis - Critical Effects:** (gastrointestinal (dust and mist); irritation (dust and mist))

## 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** • Natural Rubber, latex gloves. Break through time: 4-8 Hours. 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

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

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	Brown/copper semi-solid paste with mild petroleum odor.
Color	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	Insoluble
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	> 385 °C(> 725 °F)	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

- None in particular.

## 10.6 Hazardous decomposition products

- Hazardous decomposition products formed under fire conditions: Carbon oxides.

## Section 11 - Toxicological Information

### 11.1 Information on toxicological effects

		Components
Zinc powder, stabilized (> 25%)	7440-66-6	<b>Irritation:</b> Skin-Human • 300 µg 3 Day(s)-Intermittent • Mild irritation; <b>Tumorigen / Carcinogen:</b> Ingestion/Oral-Mouse TDLo • 12.6 mg/kg 46 Week(s)-Continuous; <i>Tumorigenic: Carcinogenic by RTECS criteria; Gastrointestinal: Tumors; Tumorigenic: Facilitates action of known carcinogen</i>
Copper oxide (10% TO 15%)	1317-38-0	<b>Acute Toxicity:</b> Ingestion/Oral-Rat LD50 • 470 mg/kg; <b>Multi-dose Toxicity:</b> Ingestion/Oral-Woman TDLo • 0.7 mg/kg 7 Day(s)-Continuous; <i>Gastrointestinal: Hypermotility, diarrhea; Gastrointestinal: Nausea or vomiting; Gastrointestinal: Other changes</i>
Calcium monocarbonate (1.5% TO 3%)	471-34-1	<b>Acute Toxicity:</b> Ingestion/Oral-Rat LD50 • 6450 mg/kg; <b>Irritation:</b> Eye-Rabbit • 750 µg 24 Hour(s) • Severe irritation; Skin-Rabbit • 500 mg 24 Hour(s) • Moderate irritation; <b>Multi-dose Toxicity:</b> Ingestion/Oral-Woman TDLo • 4.08 g/kg 30 Day(s)-Intermittent; <i>Vascular: BP elevation not characterized in autonomic section; Gastrointestinal: Changes in structure or function of endocrine pancreas; Biochemical: Metabolism (intermediary): Effect on inflammation or mediation of inflammation</i>
Benzenesulfonic acid, dodecyl-, calcium salt (0.3% TO 1.5%)	26264-06-2	<b>Acute Toxicity:</b> Ingestion/Oral-Rat LD50 • 1300 mg/kg
Sulfonic acid, petroleum, calcium salt (0.3% TO 1.5%)	61789-86-4	<b>Acute Toxicity:</b> Ingestion/Oral-Rat LD50 • >5 g/kg; <i>Gastrointestinal: Hypermotility, diarrhea; Skin-Rabbit LD50 • &gt;5 g/kg</i>

GHS Properties	Classification
Acute toxicity	EU/CLP•Data lacking UN GHS 4•Acute Toxicity - Oral 4 - ATEmix (oral) = 1188 mg/kg OSHA HCS 2012•Acute Toxicity - Oral 4 - ATEmix (oral) = 1188 mg/kg WHMIS 2015•Acute Toxicity - Oral 4 - ATEmix (oral) = 1188 mg/kg
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•Data lacking UN GHS 4•Data lacking OSHA HCS 2012•Data lacking WHMIS 2015•Data lacking
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•Data lacking OSHA HCS 2012•Data lacking WHMIS 2015•Data lacking
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)** • Harmful if swallowed.

**Chronic (Delayed)** • No data available

## 11.2 Other information

- Heating above the melting point releases metallic oxides which may cause metal fume fever which is an influenza like illness. Symptoms include headache, metallic taste in the mouth, cough, thirst, throat irritation, shortness of breath, fever, sweating and pain in the limbs. This illness is not permanent and recovery usually occurs within 24-48 hours after onset.

#### Key to abbreviations

LD = Lethal Dose

TD = Toxic Dose

## Section 12 - Ecological Information

### 12.1 Toxicity

#### Components

Zinc powder, stabilized (> 25%)	7440-66-6	<p><b>Aquatic Toxicity-Fish:</b> 96 Hour(s) LC50 <i>Pimephales promelas</i> (Fathead Minnow) 0.238 mg/L Comments: Trace Metals Toxicity and Bioaccumulation in Mudskipper <i>Periophthalmus waltoni</i> Koumans 1941 (Gobiidae: Perciformes)</p> <p>28 Day(s) NOEC <i>Cyprinus carpio</i> (Common Carp) 0.0026 mg/L Comments: Bioaccumulation of Micropollutants and Biomarker Responses in Caged Carp (<i>Cyprinus carpio</i>)</p> <p><b>Aquatic Toxicity-Crustacea:</b> 21 Day(s) NOEC Water Flea 0.062 mg/L Comments: Bioavailability Models for Predicting Acute and Chronic Toxicity of Zinc to Algae, Daphnids, and Fish in Natural Surface Waters</p> <p>48 Hour(s) EC50 <i>Ceriodaphnia dubia</i> 0.07 mg/L Comments: Influence of Water Chemistry on the Acute Toxicity of Copper and Zinc to the Cladoceran <i>Ceriodaphnia cf dubia</i></p> <p><b>Aquatic Toxicity-Algae and Other Aquatic Plant(s):</b> 72 Hour(s) EC50 <i>Pseudokirchneriella subcapitata</i> (Green Algae) 0.106 mg/L Comments: Bioavailability Models for Predicting Acute and Chronic Toxicity of Zinc to Algae, Daphnids, and Fish in Natural Surface Waters</p> <p>14 Day(s) NOEC <i>Euglena gracilis</i> (Flagellate Euglenoid) 0.0075 mg/L Comments: Water Quality Bioassay Using Selected Protozoa, II. The Effects of Zinc on Population Growth of <i>Euglena gracilis</i></p>
Copper oxide (10% TO 15%)	1317-38-0	<p><b>Aquatic Toxicity-Fish:</b> 4 Day(s) LC50 <i>Western Mosquitofish</i> &gt;56000 mg/L</p> <p>20 Day(s) NOEC <i>Common carp</i> 0.0128 mg/L</p> <p><b>Aquatic Toxicity-Crustacea:</b> 2 Day(s) EC50 <i>Water flea</i> 92.7 mg/L</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, Copper oxides)	9	III	NDA
TDG	UN3077	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc powder, Copper oxides)	9	III	NDA
IMO/IMDG	UN3077	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc powder, Copper oxides)	9	III	NDA
IATA/ICAO	UN3077	Environmentally hazardous substance, solid, n.o.s (Zinc powder, Copper oxides)	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**

**SARA Hazard Classifications**

• Acute

State Right To Know		
Component	CAS	PA
Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts	68584-23-6	No
Benzenesulfonic acid, dodecyl-, calcium salt	26264-06-2	Yes
Calcium monocarbonate	471-34-1	No
Copper oxide	1317-38-0	No
Graphite	7782-42-5	Yes
Mineral oil, petroleum distillates, solvent-refined (mild) heavy paraffinic	64741-88-4	No
Sulfonic acid, petroleum, calcium salt	61789-86-4	No
Zinc powder, stabilized	7440-66-6	Yes

Inventory						
Component	CAS	Australia AICS	Canada DSL	Canada NDSL	China	EU EINECS
Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts	68584-23-6	Yes	Yes	No	Yes	Yes
Benzenesulfonic acid, dodecyl-, calcium salt	26264-06-2	Yes	Yes	No	Yes	Yes
Calcium monocarbonate	471-34-1	Yes	Yes	No	Yes	Yes
Copper oxide	1317-38-0	Yes	Yes	No	Yes	Yes
Graphite	7782-42-5	Yes	Yes	No	Yes	Yes
Mineral oil, petroleum distillates, solvent-refined (mild) heavy paraffinic	64741-88-4	Yes	Yes	No	Yes	Yes
Sulfonic acid, petroleum, calcium salt	61789-86-4	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
Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts	68584-23-6	No	No	Yes
Benzenesulfonic acid, dodecyl-, calcium salt	26264-06-2	No	Yes	Yes

Calcium monocarbonate	471-34-1	No	Yes	Yes
Copper oxide	1317-38-0	No	Yes	Yes
Graphite	7782-42-5	No	No	Yes
Mineral oil, petroleum distillates, solvent-refined (mild) heavy paraffinic	64741-88-4	No	No	Yes
Sulfonic acid, petroleum, calcium salt	61789-86-4	No	Yes	Yes
Zinc powder, stabilized	7440-66-6	No	No	Yes

## United States - California

### Environment

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

•Sulfonic acid, petroleum, calcium salt	61789-86-4	Not Listed
•Copper oxide	1317-38-0	Not Listed
•Zinc powder, stabilized	7440-66-6	Not Listed
•Calcium monocarbonate	471-34-1	Not Listed
•Graphite	7782-42-5	Not Listed
•Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts	68584-23-6	Not Listed
•Benzenesulfonic acid, dodecyl-, calcium salt	26264-06-2	Not Listed
•Mineral oil, petroleum distillates, solvent-refined (mild) heavy paraffinic	64741-88-4	Not Listed

#### U.S. - California - Proposition 65 - Developmental Toxicity

•Sulfonic acid, petroleum, calcium salt	61789-86-4	Not Listed
•Copper oxide	1317-38-0	Not Listed
•Zinc powder, stabilized	7440-66-6	Not Listed
•Calcium monocarbonate	471-34-1	Not Listed
•Graphite	7782-42-5	Not Listed
•Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts	68584-23-6	Not Listed
•Benzenesulfonic acid, dodecyl-, calcium salt	26264-06-2	Not Listed
•Mineral oil, petroleum distillates, solvent-refined (mild) heavy paraffinic	64741-88-4	Not Listed

#### U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)

•Sulfonic acid, petroleum, calcium salt	61789-86-4	Not Listed
•Copper oxide	1317-38-0	Not Listed
•Zinc powder, stabilized	7440-66-6	Not Listed
•Calcium monocarbonate	471-34-1	Not Listed
•Graphite	7782-42-5	Not Listed
•Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts	68584-23-6	Not Listed
•Benzenesulfonic acid, dodecyl-, calcium salt	26264-06-2	Not Listed
•Mineral oil, petroleum distillates, solvent-refined (mild) heavy paraffinic	64741-88-4	Not Listed

#### U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)

•Sulfonic acid, petroleum, calcium salt	61789-86-4	Not Listed
•Copper oxide	1317-38-0	Not Listed
•Zinc powder, stabilized	7440-66-6	Not Listed
•Calcium monocarbonate	471-34-1	Not Listed
•Graphite	7782-42-5	Not Listed
•Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts	68584-23-6	Not Listed
•Benzenesulfonic acid, dodecyl-, calcium salt	26264-06-2	Not Listed
•Mineral oil, petroleum distillates, solvent-refined (mild) heavy paraffinic	64741-88-4	Not Listed

#### U.S. - California - Proposition 65 - Reproductive Toxicity - Female

•Sulfonic acid, petroleum, calcium salt	61789-86-4	Not Listed
•Copper oxide	1317-38-0	Not Listed
•Zinc powder, stabilized	7440-66-6	Not Listed
•Calcium monocarbonate	471-34-1	Not Listed
•Graphite	7782-42-5	Not Listed
•Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts	68584-23-6	Not Listed
•Benzenesulfonic acid, dodecyl-, calcium salt	26264-06-2	Not Listed
•Mineral oil, petroleum distillates, solvent-refined (mild) heavy paraffinic	64741-88-4	Not Listed

#### U.S. - California - Proposition 65 - Reproductive Toxicity - Male

•Sulfonic acid, petroleum, calcium salt	61789-86-4	Not Listed
•Copper oxide	1317-38-0	Not Listed
•Zinc powder, stabilized	7440-66-6	Not Listed
•Calcium monocarbonate	471-34-1	Not Listed

•Graphite	7782-42-5	Not Listed
•Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts	68584-23-6	Not Listed
•Benzenesulfonic acid, dodecyl-, calcium salt	26264-06-2	Not Listed
•Mineral oil, petroleum distillates, solvent-refined (mild) heavy paraffinic	64741-88-4	Not Listed

## 15.2 Chemical Safety Assessment

- No Chemical Safety Assessment has been carried out.

### Section 16 - Other Information

#### Relevant Phrases (code & full text)

- H302 - Harmful if swallowed
- H315 - Causes skin irritation
- H319 - Causes serious eye irritation
- H350 - May cause cancer.
- H372 - Causes damage to organs through prolonged or repeated exposure.

#### Revision Date

- 26/May/2017

#### Last Revision Date

- 26/May/2017

#### Preparation Date

- 26/May/2017

#### 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