

Safety Data Sheet



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

1.1 Product identifier

Product Name • Choke Tube Lube

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

Relevant identified use(s) • Prevents stuck choke tubes caused by corrosion, heat and pressures.

1.3 Details of the supplier of the safety data sheet

Manufacturer • Birchwood Casey, LLC

Section 2: Hazards Identification

EU/EEC

According to: Regulation (EC) No 1272/2008 (CLP)/REACH 1907/2006 [amended by 453/2010]

According to: EU Directive 67/548/EEC (DSD) or 1999/45/EC (DPD)

2.1 Classification of the substance or mixture

CLP

- Carcinogenicity 1B - H350
- Reproductive Toxicity 2 - H361d
- Specific Target Organ Toxicity Single Exposure 1 - H370
- Hazardous to the aquatic environment Acute 1 - H400
- Hazardous to the aquatic environment Chronic 1 - H410

DSD/DPD

- Toxic (T)
- Carcinogenic Substances - Category 2
- Harmful (Xn)
- Substances Toxic To Reproduction - Category 3
- Dangerous to the Environment (N)
- R39/25, R45, R48/20, R63, R50/53

2.2 Label Elements

CLP

DANGER



- Hazard statements**
- H350 - May cause cancer.
 - H361d - Suspected of damaging the unborn child.
 - H370 - Causes damage to organs - Kidney
 - 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.
 - P260 - Do not breathe mist/vapours/spray.
 - P264 - Wash thoroughly after handling.
 - P270 - Do not eat, drink or smoke when using this product.
 - P273 - Avoid release to the environment.
 - P281 - Use personal protective equipment as required.
- Response**
- P307+P311 - IF exposed: Call POISON CENTER or doctor/physician.
 - P321 - Specific treatment, see supplemental first aid information.
 - 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.

DSD/DPD



- Risk phrases**
- R39/25 - Toxic: danger of very serious irreversible effects if swallowed.
 - R45 - May cause cancer.
 - R48/20 - Harmful: danger of serious damage to health by prolonged exposure through inhalation.
 - R63 - Possible risk of harm to the unborn child.
 - R50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- Safety phrases**
- S37 - Wear suitable gloves.
 - S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
 - S53 - Avoid exposure - obtain special instructions before use.
 - S57 - Use appropriate containment to avoid environmental contamination.

2.3 Other Hazards

- CLP**
- According to Regulation (EC) No. 1272/2008 (CLP) this material is considered hazardous.
- DSD/DPD**
- According to European Directive 1999/45/EC this material is considered dangerous.

United States (US)

According to: OSHA 29 CFR 1910.1200 HCS

2.1 Classification of the substance or mixture

- OSHA HCS 2012**
- Skin Irritation 2
 - Reproductive Toxicity 2
 - Specific Target Organ Toxicity Single Exposure 1

2.2 Label elements

OSHA HCS 2012

DANGER



- Hazard statements**
- Causes skin irritation
 - Suspected of damaging fertility or the unborn child.
 - Causes damage to organs - Kidney

Precautionary statements

- Prevention**
- Obtain special instructions before use.
 - Do not handle until all safety precautions have been read and understood.
 - Do not breathe mist/vapours/spray.
 - Wash thoroughly after handling.
 - Do not eat, drink or smoke when using this product.
 - Wear protective gloves/protective clothing/eye protection/face protection.

- Response**
- IF exposed: Call POISON CENTER or doctor/physician.
 - If on skin: Wash with plenty of water .
 - Specific treatment, see supplemental first aid information.
 - If skin irritation occurs: Get medical advice/attention.
 - Take off contaminated clothing and wash before reuse.

- 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

2.1 Classification of the substance or mixture

WHMIS

- Other Toxic Effects - D2A
- Other Toxic Effects - D2B

2.2 Label elements

WHMIS



- Other Toxic Effects - D2A
- Other Toxic Effects - D2B

2.3 Other hazards

WHMIS

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

See Section 12 for Ecological Information.

Section 3 - Composition/Information on Ingredients

3.1 Substances

- Material does not meet the criteria of a substance in accordance with Regulation (EC) No 1272/2008.

3.2 Mixtures

Composition					
Chemical Name	Identifiers	%	LD50/LC50	Classifications According to Regulation/Directive	Comments
Mineral oil, petroleum distillates, hydrotreated (severe) heavy naphthenic	CAS:64742-52-5 EC Number:265-155-0	35% TO 60%	NDA	EU DSD/DPD: Annex VI: Carc. 2; R45 EU CLP: Annex VI: Carc. 1B; H350 OSHA HCS 2012: Skin Irrit. 2	NDA
Graphite	CAS:7782-42-5 EC Number:231-955-3	10% TO 25%	NDA	EU DSD/DPD: Self Classified: Xn, R48/20 EU CLP: Self Classified: STOT RE 2 (Lungs, Inhalation), H373 OSHA HCS 2012: STOT RE 2 (Lungs, Inhalation)	NDA
Copper	CAS:7440-50-8 EC Number:231-159-6	10% TO 20%	NDA	EU DSD/DPD: Self Classified: Repr. 3, R63; T, R39/25; N, R50/53 EU CLP: Self Classified: Repr. 2, H361d; STOT SE 1 (Kidney), H370; Aquatic Acute 1, H400; Aquatic Chronic 1, H410 OSHA HCS 2012: Repr. 2; STOT SE 1 (Kidney)	NDA
Zinc oxide	CAS:1314-13-2 EC Number:215-222-5	2% TO 10%	NDA	EU DSD/DPD: Annex VI: N; R50-53 EU CLP: Annex VI: Aquatic Acute 1, H400; Aquatic Chronic 1, H410 OSHA HCS 2012: Eye Irrit. 2B	NDA
Aluminum	CAS:7429-90-5 EC Number:231-072-3	5% TO 10%	NDA	EU DSD/DPD: Annex VI: F; R11; R15 EU CLP: Annex VI: Water-react. 2, H261; Pyr. Sol., H250 OSHA HCS 2012: STOT RE 2 (Lungs, Inhalation); Water-react. 2	NDA

See Section 11 for Toxicological Information. See Section 16 for full text of H-statements and R-phrases.

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. Take off contaminated clothing and wash before reuse. If irritation develops and persists, get medical attention.

Eye

- In case of contact with substance, immediately flush eyes with running water for at least 20 minutes. If eye irritation persists: Get medical advice/attention.

Ingestion

- Get medical attention.

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 ● No data available

Hazardous Combustion Products ● No data available.

5.3 Advice for firefighters

- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.
Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal 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 ● Do not walk through spilled material. Wear appropriate personal protective equipment, avoid direct contact. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid contact with skin, eyes or clothing.

Emergency Procedures ● As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions. Stay upwind. Keep out of low areas. Keep unauthorized personnel away. Ventilate closed spaces before entering.

6.2 Environmental precautions

- Avoid release to the environment.

6.3 Methods and material for containment and cleaning up

Containment/Clean-up Measures ● Stop leak if you can do it without risk.
SMALL SPILLS: Take up with sand or other non-combustible absorbent material and place into containers for later disposal.
LARGE SPILLS: Dike far ahead of spill for later disposal.

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. Wear appropriate personal protective equipment, avoid direct contact. Avoid contact with skin, eyes, and clothing. 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/package tightly closed in a cool, 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	Canada Ontario	Canada Quebec	Germany DFG	NIOSH
Zinc oxide (1314-13-2)	STELs	10 mg/m ³ STEL (respirable fraction)	10 mg/m ³ STEL (respirable)	10 mg/m ³ STEV (fume)	Not established	10 mg/m ³ STEL (fume)
	TWAs	2 mg/m ³ TWA (respirable fraction)	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)	Not established	5 mg/m ³ TWA (dust and fume)
	Ceilings	Not established	Not established	Not established	1 mg/m ³ Peak (respirable fraction, fume)	15 mg/m ³ Ceiling (dust)
	MAKs	Not established	Not established	Not established	1 mg/m ³ TWA MAK (fume, respirable fraction)	Not established
Aluminum (7429-90-5)	TWAs	1 mg/m ³ TWA (respirable fraction)	1 mg/m ³ TWA (respirable)	10 mg/m ³ TWAEV	Not established	10 mg/m ³ TWA (total dust); 5 mg/m ³ TWA (respirable dust)
	MAKs	Not established	Not established	Not established	4 mg/m ³ TWA MAK (dust, inhalable fraction); 1.5 mg/m ³ TWA MAK (dust, respirable fraction)	Not established
Copper (7440-50-8)	TWAs	0.2 mg/m ³ TWA (fume)	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)	Not established	1 mg/m ³ TWA (dust and mist); 0.1 mg/m ³ TWA (fume)
	Ceilings	Not established	Not established	Not established	0.2 mg/m ³ Peak (inhalable fraction)	Not established
	MAKs	Not established	Not established	Not established	0.1 mg/m ³ TWA MAK (inhalable fraction)	Not established
Graphite (7782-42-5)	TWAs	2 mg/m ³ TWA (all forms except graphite fibers, respirable fraction)	2 mg/m ³ TWA (except Graphite fibres, respirable)	2 mg/m ³ TWAEV (containing no Asbestos and <1% Crystalline silica, except Graphite fibres, respirable dust)	Not established	2.5 mg/m ³ TWA (natural, respirable dust)
	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
Exposure Limits/Guidelines (Con't.)						
			Result	OSHA		
Zinc oxide (1314-13-2)			TWAs	5 mg/m ³ TWA (fume); 15 mg/m ³ TWA (total dust); 5 mg/m ³ TWA (respirable fraction)		
Aluminum (7429-90-5)			TWAs	15 mg/m ³ TWA (total dust); 5 mg/m ³ TWA (respirable fraction)		

Copper (7440-50-8)	TWAs	0.1 mg/m3 TWA (fume); 1 mg/m3 TWA (dust and mist)
Graphite as Particulates not otherwise classified (PNOC)	TWAs	15 mg/m3 TWA (synthetic, total dust); 5 mg/m3 TWA (synthetic, respirable fraction)

Exposure Control Notations

Germany DFG

- Graphite (7782-42-5): **Pregnancy:** (no risk to embryo/fetus if exposure limits adhered to (inhalable fraction, respirable fraction))
- Aluminum (7429-90-5): **Pregnancy:** (classification not yet possible (respirable, inhalable, dust))
- Copper (7440-50-8): **Pregnancy:** (no risk to embryo/fetus if exposure limits adhered to)

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

- No respiratory protection should be needed during normal use.

Eye/Face

- Wear safety glasses.

Skin/Body

- Wear appropriate gloves.

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

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

MAK = Maximale Arbeitsplatz Konzentration is the maximum permissible concentration

STEV = Short Term Exposure Value

NIOSH = National Institute of Occupational Safety and Health

TWAEV = Time-Weighted Average Exposure Value

OSHA = Occupational Safety and Health Administration

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

Section 9 - Physical and Chemical Properties

9.1 Information on Physical and Chemical Properties

Material Description			
Physical Form	Liquid	Appearance/Description	Silver, gray paste with a slight odor.
Color	Silver gray.	Odor	Slight
Odor Threshold	Data lacking		
General Properties			
Boiling Point	600 F(315.5556 C)	Melting Point	Data lacking
Decomposition Temperature	Data lacking	pH	Data lacking
Specific Gravity/Relative Density	= 1.1	Water Solubility	Negligible
Solvent Solubility	Data lacking	Viscosity	Data lacking
Explosive Properties	Not Explosive.	Oxidizing Properties:	Not an oxidizer.
Volatility			

Vapor Pressure	> 0.1 mmHg (torr)	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)	Not Flammable.		
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

- Avoid high temperatures.

10.5 Incompatible materials

- Strong oxidizers.

10.6 Hazardous decomposition products

- Thermal decomposition may produce aldehydes.

Section 11 - Toxicological Information

11.1 Information on toxicological effects

		Components
Aluminum (5% TO 10%)	7429-90-5	Reproductive: Ingestion/Oral-Mouse TDLo • 1260 mg/kg (multigeneration)); <i>Reproductive Effects:Effects on Newborn:Behavioral; Reproductive Effects:Effects on Newborn:Physical; Reproductive Effects:Effects on Newborn:Other postnatal measures or effects</i>
Zinc oxide (2% TO 10%)	1314-13-2	Irritation: Eye-Rabbit • 500 mg 24 Hour(s) • Mild irritation; Skin-Rabbit • 500 mg 24 Hour(s) • Mild irritation; 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>
Copper (10% TO 20%)	7440-50-8	Acute Toxicity: Ingestion/Oral-Mouse TDLo • 158 mg/kg; <i>Kidney, Ureter, and Bladder:Changes in tubules (including acute renal failure, acute tubular necrosis);</i> Multi-dose Toxicity: Ingestion/Oral-Rabbit TDLo • 3 g/kg 60 Day(s)-Continuous; <i>Cardiac:Other changes; Liver:Hepatitis (hepatocellular necrosis), zonal; Related to Chronic Data:Death in the Other Multiple Dose data type field;</i> Reproductive: Ingestion/Oral-Rat TDLo • 152 mg/kg (22W pre); <i>Reproductive Effects:Effects on Embryo or Fetus:Fetotoxicity (except death, e.g., stunted fetus); Reproductive Effects:Specific Developmental Abnormalities:Central nervous system;</i> Tumorigen / Carcinogen: Ingestion/Oral-Mouse TDLo • 10.08 mg/kg 12 Week(s)-Continuous; <i>Tumorigenic:Carcinogenic by RTECS criteria; Lungs, Thorax, or Respiration:Other changes</i>

GHS Properties	Classification
Acute toxicity	EU/CLP • Classification criteria not met OSHA HCS 2012 • Classification criteria not met
Aspiration Hazard	EU/CLP • Classification criteria not met OSHA HCS 2012 • Classification criteria not met
Carcinogenicity	EU/CLP • Carcinogenicity 1B OSHA HCS 2012 • Classification criteria not met
Germ Cell Mutagenicity	EU/CLP • Classification criteria not met OSHA HCS 2012 • Classification criteria not met
Skin corrosion/Irritation	EU/CLP • Classification criteria not met OSHA HCS 2012 • Skin Irritation 2
Skin sensitization	EU/CLP • Classification criteria not met OSHA HCS 2012 • Classification criteria not met
STOT-RE	EU/CLP • Classification criteria not met OSHA HCS 2012 • Classification criteria not met
STOT-SE	EU/CLP • Specific Target Organ Toxicity Single Exposure 1 OSHA HCS 2012 • Specific Target Organ Toxicity Single Exposure 1
Toxicity for Reproduction	EU/CLP • Toxic to Reproduction 2 OSHA HCS 2012 • Toxic to Reproduction 2
Respiratory sensitization	EU/CLP • Classification criteria not met OSHA HCS 2012 • Classification criteria not met
Serious eye damage/Irritation	EU/CLP • Classification criteria not met OSHA HCS 2012 • Classification criteria not met

Route(s) of entry/exposure

- Inhalation, Skin, Eye, Ingestion

Potential Health Effects**Inhalation****Acute (Immediate)**

- Inhalation is not an expected route of exposure.

Chronic (Delayed)

- No data available.

Skin**Acute (Immediate)**

- Causes skin irritation.

Chronic (Delayed)

- No data available.

Eye**Acute (Immediate)**

- May cause irritation.

Chronic (Delayed)

- No data available.

Ingestion**Acute (Immediate)**

- Low ingestion hazard.

Chronic (Delayed)

- No data available.

Carcinogenic Effects

- Repeated and prolonged exposure may cause cancer.

Reproductive Effects

- Repeated and prolonged exposure may cause reproductive effects.

Key to abbreviations

MLD = Mild

TD = Toxic Dose

Section 12 - Ecological Information

12.1 Toxicity

Choke Tube Lube			Results	Exposure Conditions	Comments
Dosage	Species	Duration			
0.039 mg/L	Other: water flea	48 Hour(s)	EC50	NDA	Copper
0.62 mg/L	Other: NDA	48 Hour(s)	NOEC	NDA	Copper

- 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	NDA	Not regulated	NDA	NDA	NDA
TDG	NDA	Not regulated	NDA	NDA	NDA
IMO/IMDG	NDA	Not regulated	NDA	NDA	NDA
IATA/ICAO	NDA	Not regulated	NDA	NDA	NDA

14.6 Special precautions for user

- None known.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not relevant.

Section 15 - Regulatory Information

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

SARA Hazard Classifications • Acute, Chronic

State Right To Know				
Component	CAS	MA	NJ	PA
Aluminum	7429-90-5	Yes	Yes	Yes
Copper	7440-50-8	Yes	Yes	Yes
Graphite	7782-42-5	Yes	Yes	Yes
Mineral oil, petroleum distillates, hydrotreated (severe) heavy naphthenic	64742-52-5	No	No	No
Zinc oxide	1314-13-2	Yes	Yes	Yes

Inventory						
Component	CAS	Canada DSL	Canada NDSL	EU EINECS	EU ELNICS	TSCA
Aluminum	7429-90-5	Yes	No	Yes	No	Yes
Copper	7440-50-8	Yes	No	Yes	No	Yes
Graphite	7782-42-5	Yes	No	Yes	No	Yes
Mineral oil, petroleum distillates, hydrotreated (severe) heavy naphthenic	64742-52-5	Yes	No	Yes	No	Yes
Zinc oxide	1314-13-2	Yes	No	Yes	No	Yes

Canada

Labor

Canada - WHMIS - Classifications of Substances

• Copper	7440-50-8	Uncontrolled product according to WHMIS classification criteria
• Copper as Copper compounds		Not Listed
• Zinc oxide	1314-13-2	Uncontrolled product according to WHMIS classification criteria
• Zinc oxide as Zinc compounds		Not Listed
• Aluminum	7429-90-5	B6 (powder); Uncontrolled product according to WHMIS classification criteria
• Aluminum as Aluminum insoluble compounds		Not Listed
• Graphite	7782-42-5	D2A (natural); D2B (synthetic)
• Graphite as Particulates not otherwise classified (PNOC)		Not Listed
• Mineral oil, petroleum distillates, hydrotreated (severe) heavy naphthenic	64742-52-5	Not Listed

Canada - WHMIS - Ingredient Disclosure List

• Copper	7440-50-8	1 %
• Copper as Copper compounds		1 %

• Zinc oxide	1314-13-2	1 %
• Zinc oxide as Zinc compounds		Not Listed
• Aluminum	7429-90-5	1 %
• Aluminum as Aluminum insoluble compounds		Not Listed
• Graphite	7782-42-5	Not Listed
• Graphite as Particulates not otherwise classified (PNOC)		Not Listed
• Mineral oil, petroleum distillates, hydrotreated (severe) heavy naphthenic	64742-52-5	Not Listed

Environment

Canada - 2004 NPRI (National Pollutant Release Inventory)

• Copper	7440-50-8	Part 1, Group 1 Substance
• Copper as Copper compounds		Part 1, Group 1 Substance
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Part 1, Group 1 Substance
• Aluminum	7429-90-5	Part 1, Group 1 Substance (dust or fume)
• Aluminum as Aluminum insoluble compounds		Not Listed
• Graphite	7782-42-5	Not Listed
• Graphite as Particulates not otherwise classified (PNOC)		Not Listed
• Mineral oil, petroleum distillates, hydrotreated (severe) heavy naphthenic	64742-52-5	Not Listed

Canada - 2005 NPRI (National Pollutant Release Inventory)

• Copper	7440-50-8	Part 1, Group 1 Substance
• Copper as Copper compounds		Part 1, Group 1 Substance
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Part 1, Group 1 Substance
• Aluminum	7429-90-5	Part 1, Group 1 Substance (dust or fume)
• Aluminum as Aluminum insoluble compounds		Not Listed
• Graphite	7782-42-5	Not Listed
• Graphite as Particulates not otherwise classified (PNOC)		Not Listed
• Mineral oil, petroleum distillates, hydrotreated (severe) heavy naphthenic	64742-52-5	Not Listed

Canada - CEPA - Greenhouse Gases Subject to Mandatory Reporting

• Copper	7440-50-8	Not Listed
• Copper as Copper compounds		Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Aluminum	7429-90-5	Not Listed
• Aluminum as Aluminum insoluble compounds		Not Listed
• Graphite	7782-42-5	Not Listed
• Graphite as Particulates not otherwise classified (PNOC)		Not Listed
• Mineral oil, petroleum distillates, hydrotreated (severe) heavy naphthenic	64742-52-5	Not Listed

Canada - CEPA - Priority Substances List

• Copper	7440-50-8	Not Listed
• Copper as Copper compounds		Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Aluminum	7429-90-5	Not Listed
• Aluminum as Aluminum insoluble compounds		Not Listed
• Graphite	7782-42-5	Not Listed
• Graphite as Particulates not otherwise classified (PNOC)		Not Listed
• Mineral oil, petroleum distillates, hydrotreated (severe) heavy naphthenic	64742-52-5	Not Listed

Canada - DWQ (Drinking Water Quality) - IMACs

• Copper	7440-50-8	Not Listed
• Copper as Copper compounds		Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Aluminum	7429-90-5	Not Listed
• Aluminum as Aluminum insoluble compounds		Not Listed
• Graphite	7782-42-5	Not Listed
• Graphite as Particulates not otherwise classified (PNOC)		Not Listed
• Mineral oil, petroleum distillates, hydrotreated (severe) heavy naphthenic	64742-52-5	Not Listed

Other**Canada - Accelerated Reduction/Elimination of Toxics (ARET)**

• Copper	7440-50-8	Not Listed
• Copper as Copper compounds		Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Aluminum	7429-90-5	Not Listed
• Aluminum as Aluminum insoluble compounds		Not Listed
• Graphite	7782-42-5	Not Listed
• Graphite as Particulates not otherwise classified (PNOC)		Not Listed
• Mineral oil, petroleum distillates, hydrotreated (severe) heavy naphthenic	64742-52-5	Not Listed

Canada New Brunswick**Environment****Canada - New Brunswick - Ozone Depleting Substances - Schedule A**

• Copper	7440-50-8	Not Listed
• Copper as Copper compounds		Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Aluminum	7429-90-5	Not Listed
• Aluminum as Aluminum insoluble compounds		Not Listed
• Graphite	7782-42-5	Not Listed
• Graphite as Particulates not otherwise classified (PNOC)		Not Listed
• Mineral oil, petroleum distillates, hydrotreated (severe) heavy naphthenic	64742-52-5	Not Listed

Canada - New Brunswick - Ozone Depleting Substances - Schedule B

• Copper	7440-50-8	Not Listed
• Copper as Copper compounds		Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Aluminum	7429-90-5	Not Listed
• Aluminum as Aluminum insoluble compounds		Not Listed
• Graphite	7782-42-5	Not Listed
• Graphite as Particulates not otherwise classified (PNOC)		Not Listed
• Mineral oil, petroleum distillates, hydrotreated (severe) heavy naphthenic	64742-52-5	Not Listed

Europe**Other****EU - CLP (1272/2008) - Annex VI - Table 3.2 - Classification**

• Copper	7440-50-8	Not Listed
• Copper as Copper compounds		Not Listed
• Zinc oxide	1314-13-2	N; R50-53

• Zinc oxide as Zinc compounds		Not Listed
• Aluminum	7429-90-5	F; R11 R15
• Aluminum as Aluminum insoluble compounds		Not Listed
• Graphite	7782-42-5	Not Listed
• Graphite as Particulates not otherwise classified (PNOC)		Not Listed
• Mineral oil, petroleum distillates, hydrotreated (severe) heavy naphthenic	64742-52-5	Carc.Cat.2; R45
EU - CLP (1272/2008) - Annex VI - Table 3.2 - Concentration Limits		
• Copper	7440-50-8	Not Listed
• Copper as Copper compounds		Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Aluminum	7429-90-5	Not Listed
• Aluminum as Aluminum insoluble compounds		Not Listed
• Graphite	7782-42-5	Not Listed
• Graphite as Particulates not otherwise classified (PNOC)		Not Listed
• Mineral oil, petroleum distillates, hydrotreated (severe) heavy naphthenic	64742-52-5	Not Listed
EU - CLP (1272/2008) - Annex VI - Table 3.2 - Labelling		
• Copper	7440-50-8	Not Listed
• Copper as Copper compounds		Not Listed
• Zinc oxide	1314-13-2	N R:50/53 S:60-61
• Zinc oxide as Zinc compounds		Not Listed
• Aluminum	7429-90-5	F R:11-15 S:(2)-7/8-43
• Aluminum as Aluminum insoluble compounds		Not Listed
• Graphite	7782-42-5	Not Listed
• Graphite as Particulates not otherwise classified (PNOC)		Not Listed
• Mineral oil, petroleum distillates, hydrotreated (severe) heavy naphthenic	64742-52-5	T R:45 S:53-45
EU - CLP (1272/2008) - Annex VI - Table 3.2 - Notes - Substances and Preparations		
• Copper	7440-50-8	Not Listed
• Copper as Copper compounds		Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Aluminum	7429-90-5	T
• Aluminum as Aluminum insoluble compounds		Not Listed
• Graphite	7782-42-5	Not Listed
• Graphite as Particulates not otherwise classified (PNOC)		Not Listed
• Mineral oil, petroleum distillates, hydrotreated (severe) heavy naphthenic	64742-52-5	L
EU - CLP (1272/2008) - Annex VI - Table 3.2 - Safety Phrases		
• Copper	7440-50-8	Not Listed
• Copper as Copper compounds		Not Listed
• Zinc oxide	1314-13-2	S:60-61
• Zinc oxide as Zinc compounds		Not Listed
• Aluminum	7429-90-5	S:(2)-7/8-43
• Aluminum as Aluminum insoluble compounds		Not Listed
• Graphite	7782-42-5	Not Listed
• Graphite as Particulates not otherwise classified (PNOC)		Not Listed
• Mineral oil, petroleum distillates, hydrotreated (severe) heavy naphthenic	64742-52-5	S:53-45

Mexico

Other

Mexico - Hazard Classifications

• Copper	7440-50-8	Not Listed
• Copper as Copper compounds		Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
		Hazard Class = 4.1 PG = II UN1309; Hazard Class = 4.3 PG = II UN1396; Hazard Class = 4.3 PG = III UN1396; Hazard Class = 4.1 PG = III UN1309
• Aluminum	7429-90-5	
• Aluminum as Aluminum insoluble compounds		Not Listed
• Graphite	7782-42-5	Not Listed
• Graphite as Particulates not otherwise classified (PNOC)		Not Listed
• Mineral oil, petroleum distillates, hydrotreated (severe) heavy naphthenic	64742-52-5	Not Listed

Mexico - Regulated Substances

• Copper	7440-50-8	Not Listed
• Copper as Copper compounds		Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Aluminum	7429-90-5	UN1309; UN1396; UN1396; UN1309
• Aluminum as Aluminum insoluble compounds		Not Listed
• Graphite	7782-42-5	Not Listed
• Graphite as Particulates not otherwise classified (PNOC)		Not Listed
• Mineral oil, petroleum distillates, hydrotreated (severe) heavy naphthenic	64742-52-5	Not Listed

United States**Labor****U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals**

• Copper	7440-50-8	Not Listed
• Copper as Copper compounds		Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Aluminum	7429-90-5	Not Listed
• Aluminum as Aluminum insoluble compounds		Not Listed
• Graphite	7782-42-5	Not Listed
• Graphite as Particulates not otherwise classified (PNOC)		Not Listed
• Mineral oil, petroleum distillates, hydrotreated (severe) heavy naphthenic	64742-52-5	Not Listed

U.S. - OSHA - Specifically Regulated Chemicals

• Copper	7440-50-8	Not Listed
• Copper as Copper compounds		Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Aluminum	7429-90-5	Not Listed
• Aluminum as Aluminum insoluble compounds		Not Listed
• Graphite	7782-42-5	Not Listed
• Graphite as Particulates not otherwise classified (PNOC)		Not Listed
• Mineral oil, petroleum distillates, hydrotreated (severe) heavy naphthenic	64742-52-5	Not Listed

Environment**U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants**

• Copper	7440-50-8	Not Listed
• Copper as Copper compounds		Not Listed

• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Aluminum	7429-90-5	Not Listed
• Aluminum as Aluminum insoluble compounds		Not Listed
• Graphite	7782-42-5	Not Listed
• Graphite as Particulates not otherwise classified (PNOC)		Not Listed
• Mineral oil, petroleum distillates, hydrotreated (severe) heavy naphthenic	64742-52-5	Not Listed

U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities

		5000 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm); 2270 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm)
• Copper	7440-50-8	
• Copper as Copper compounds		Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Aluminum	7429-90-5	Not Listed
• Aluminum as Aluminum insoluble compounds		Not Listed
• Graphite	7782-42-5	Not Listed
• Graphite as Particulates not otherwise classified (PNOC)		Not Listed
• Mineral oil, petroleum distillates, hydrotreated (severe) heavy naphthenic	64742-52-5	Not Listed

U.S. - CERCLA/SARA - Radionuclides and Their Reportable Quantities

• Copper	7440-50-8	Not Listed
• Copper as Copper compounds		Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Aluminum	7429-90-5	Not Listed
• Aluminum as Aluminum insoluble compounds		Not Listed
• Graphite	7782-42-5	Not Listed
• Graphite as Particulates not otherwise classified (PNOC)		Not Listed
• Mineral oil, petroleum distillates, hydrotreated (severe) heavy naphthenic	64742-52-5	Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs

• Copper	7440-50-8	Not Listed
• Copper as Copper compounds		Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Aluminum	7429-90-5	Not Listed
• Aluminum as Aluminum insoluble compounds		Not Listed
• Graphite	7782-42-5	Not Listed
• Graphite as Particulates not otherwise classified (PNOC)		Not Listed
• Mineral oil, petroleum distillates, hydrotreated (severe) heavy naphthenic	64742-52-5	Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs

• Copper	7440-50-8	Not Listed
• Copper as Copper compounds		Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed

• Aluminum	7429-90-5	Not Listed
• Aluminum as Aluminum insoluble compounds		Not Listed
• Graphite	7782-42-5	Not Listed
• Graphite as Particulates not otherwise classified (PNOC)		Not Listed
• Mineral oil, petroleum distillates, hydrotreated (severe) heavy naphthenic	64742-52-5	Not Listed
U.S. - CERCLA/SARA - Section 313 - Emission Reporting		
• Copper	7440-50-8	1.0 % de minimis concentration
• Copper as Copper compounds		1.0 % de minimis concentration (This category does not include CAS numbers 147-14-8, 1328-53-6, or 14302-13-7, or copper phthalocyanine compounds that are substituted with only hydrogen and/or chlorine and/or bromine.)
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		1.0 % de minimis concentration (Chemical Category N982)
• Aluminum	7429-90-5	1.0 % de minimis concentration (dust or fume only)
• Aluminum as Aluminum insoluble compounds		Not Listed
• Graphite	7782-42-5	Not Listed
• Graphite as Particulates not otherwise classified (PNOC)		Not Listed
• Mineral oil, petroleum distillates, hydrotreated (severe) heavy naphthenic	64742-52-5	Not Listed
U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing		
• Copper	7440-50-8	Not Listed
• Copper as Copper compounds		Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Aluminum	7429-90-5	Not Listed
• Aluminum as Aluminum insoluble compounds		Not Listed
• Graphite	7782-42-5	Not Listed
• Graphite as Particulates not otherwise classified (PNOC)		Not Listed
• Mineral oil, petroleum distillates, hydrotreated (severe) heavy naphthenic	64742-52-5	Not Listed
U.S. - RCRA (Resource Conservation & Recovery Act) - Constituents for Detection Monitoring		
• Copper	7440-50-8	(total)
• Copper as Copper compounds		Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Aluminum	7429-90-5	Not Listed
• Aluminum as Aluminum insoluble compounds		Not Listed
• Graphite	7782-42-5	Not Listed
• Graphite as Particulates not otherwise classified (PNOC)		Not Listed
• Mineral oil, petroleum distillates, hydrotreated (severe) heavy naphthenic	64742-52-5	Not Listed
U.S. - RCRA (Resource Conservation & Recovery Act) - List for Hazardous Constituents		
• Copper	7440-50-8	(total)
• Copper as Copper compounds		Not Listed
• Zinc oxide	1314-13-2	Not Listed

• Zinc oxide as Zinc compounds		Not Listed
• Aluminum	7429-90-5	Not Listed
• Aluminum as Aluminum insoluble compounds		Not Listed
• Graphite	7782-42-5	Not Listed
• Graphite as Particulates not otherwise classified (PNOC)		Not Listed
• Mineral oil, petroleum distillates, hydrotreated (severe) heavy naphthenic	64742-52-5	Not Listed

U.S. - RCRA (Resource Conservation & Recovery Act) - TSD Facilities Ground Water Monitoring

• Copper	7440-50-8	(total)
• Copper as Copper compounds		Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Aluminum	7429-90-5	Not Listed
• Aluminum as Aluminum insoluble compounds		Not Listed
• Graphite	7782-42-5	Not Listed
• Graphite as Particulates not otherwise classified (PNOC)		Not Listed
• Mineral oil, petroleum distillates, hydrotreated (severe) heavy naphthenic	64742-52-5	Not Listed

United States - California

Environment

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

• Copper	7440-50-8	Not Listed
• Copper as Copper compounds		Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Aluminum	7429-90-5	Not Listed
• Aluminum as Aluminum insoluble compounds		Not Listed
• Graphite	7782-42-5	Not Listed
• Graphite as Particulates not otherwise classified (PNOC)		Not Listed
• Mineral oil, petroleum distillates, hydrotreated (severe) heavy naphthenic	64742-52-5	Not Listed

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

• Copper	7440-50-8	Not Listed
• Copper as Copper compounds		Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Aluminum	7429-90-5	Not Listed
• Aluminum as Aluminum insoluble compounds		Not Listed
• Graphite	7782-42-5	Not Listed
• Graphite as Particulates not otherwise classified (PNOC)		Not Listed
• Mineral oil, petroleum distillates, hydrotreated (severe) heavy naphthenic	64742-52-5	Not Listed

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

• Copper	7440-50-8	Not Listed
• Copper as Copper compounds		Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Aluminum	7429-90-5	Not Listed
• Aluminum as Aluminum insoluble compounds		Not Listed
• Graphite	7782-42-5	Not Listed
• Graphite as Particulates not otherwise classified (PNOC)		Not Listed
• Mineral oil, petroleum distillates, hydrotreated (severe) heavy naphthenic	64742-52-5	Not Listed

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

• Copper	7440-50-8	Not Listed
• Copper as Copper compounds		Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Aluminum	7429-90-5	Not Listed
• Aluminum as Aluminum insoluble compounds		Not Listed
• Graphite	7782-42-5	Not Listed
• Graphite as Particulates not otherwise classified (PNOC)		Not Listed
• Mineral oil, petroleum distillates, hydrotreated (severe) heavy naphthenic	64742-52-5	Not Listed

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

• Copper	7440-50-8	Not Listed
• Copper as Copper compounds		Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Aluminum	7429-90-5	Not Listed
• Aluminum as Aluminum insoluble compounds		Not Listed
• Graphite	7782-42-5	Not Listed
• Graphite as Particulates not otherwise classified (PNOC)		Not Listed
• Mineral oil, petroleum distillates, hydrotreated (severe) heavy naphthenic	64742-52-5	Not Listed

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

• Copper	7440-50-8	Not Listed
• Copper as Copper compounds		Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Aluminum	7429-90-5	Not Listed
• Aluminum as Aluminum insoluble compounds		Not Listed
• Graphite	7782-42-5	Not Listed
• Graphite as Particulates not otherwise classified (PNOC)		Not Listed
• Mineral oil, petroleum distillates, hydrotreated (severe) heavy naphthenic	64742-52-5	Not Listed

United States - Pennsylvania**Labor****U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List**

• Copper	7440-50-8	(dust and fume)
• Copper as Copper compounds		
• Zinc oxide	1314-13-2	(fume)
• Zinc oxide as Zinc compounds		
• Aluminum	7429-90-5	
• Aluminum as Aluminum insoluble compounds		Not Listed
• Graphite	7782-42-5	Not Listed
• Graphite as Particulates not otherwise classified (PNOC)		Not Listed
• Mineral oil, petroleum distillates, hydrotreated (severe) heavy naphthenic	64742-52-5	Not Listed

U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances

• Copper	7440-50-8	Not Listed
• Copper as Copper compounds		Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Aluminum	7429-90-5	Not Listed
• Aluminum as Aluminum insoluble compounds		Not Listed
• Graphite	7782-42-5	Not Listed
• Graphite as Particulates not otherwise classified (PNOC)		Not Listed

15.2 Chemical Safety Assessment

- No Chemical Safety Assessment has been carried out.

Section 16 - Other Information

Relevant Phrases (code & full text)

- H250 - Catches fire spontaneously if exposed to air
- H261 - In contact with water releases flammable gas
- H373 - May cause damage to organs through prolonged or repeated exposure.
- R11 - Highly flammable.
- R15 - Contact with water liberates extremely flammable gases.
- R50 - Very toxic to aquatic organisms.
- R53 - May cause long-term adverse effects in the aquatic environment.

Last Revision Date

- 05/March/2015

Preparation Date

- 05/March/2015

Disclaimer/Statement of Liability

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Key to abbreviations

NDA = No Data Available