

# SAFETY DATA SHEET



## COPPER SUPREME SPECIAL BLEND®

Version 8.2      Revision Date: 10/08/2018      SDS Number: 115180-00018      Date of last issue: 10/01/2018  
Date of first issue: 05/12/2015

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### SECTION 1. IDENTIFICATION

Product name : COPPER SUPREME SPECIAL BLEND®  
Other means of identification : No data available  
SDS-Identcode : 343G

#### Manufacturer or supplier's details

Company name of supplier : Bestolife Corporation  
Address : 2777 N. Stemmons Frwy Ste 1800  
Dallas TX 75207,  
Telephone : 855-243-9164/972-865-8961  
Telefax : 214-631-3047  
E-mail address : www.bestolife.com

#### Recommended use of the chemical and restrictions on use

Recommended use : Industrial use  
Thread Compound (Pipe Dope) and Jacking grease for use in  
Offshore industries  
Mining, (without offshore industries)  
Restrictions on use : Do not use on oxygen lines or in oxygen enriched atmospheres.


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### SECTION 2. HAZARDS IDENTIFICATION

#### GHS classification in accordance with the Hazardous Products Regulations

Eye irritation : Category 2A  
Skin sensitization : Category 1

#### GHS label elements

Hazard pictograms : 

Signal Word : Warning

Hazard Statements : H317 May cause an allergic skin reaction.  
H319 Causes serious eye irritation.

Precautionary Statements : **Prevention:**  
P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.  
P264 Wash skin thoroughly after handling.  
P272 Contaminated work clothing should not be allowed out of the workplace.  
P280 Wear protective gloves/ eye protection/ face protection.  
**Response:**  
P302 + P352 IF ON SKIN: Wash with plenty of water.

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# SAFETY DATA SHEET



## COPPER SUPREME SPECIAL BLEND®

Version 8.2      Revision Date: 10/08/2018      SDS Number: 115180-00018      Date of last issue: 10/01/2018  
Date of first issue: 05/12/2015

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.  
P337 + P313 If eye irritation persists: Get medical advice/attention.  
P362 + P364 Take off contaminated clothing and wash it before reuse.

### Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

### Other hazards

None known.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

### Components

Chemical name	CAS-No.	Concentration (% w/w)
Distillates (petroleum), hydrotreated heavy paraffinic	64742-54-7	>= 30 - < 60
Distillates (petroleum), hydrotreated heavy naphthenic	64742-52-5	>= 30 - < 60
Graphite	7782-42-5	>= 10 - < 30
Copper metal powder	7440-50-8	>= 10 - < 30
Talc	14807-96-6	>= 5 - < 10
Dilithium azelate	38900-29-7	>= 5 - < 10
Tris[bis(2-ethylhexyl)dithiocarbamate-S,S'] antimony	15991-76-1	>= 1 - < 5
Calcium oxide	1305-78-8	>= 1 - < 5
Antimony, dialkyl dithiocarbamate	15890-25-2	>= 1 - < 5
Quartz	14808-60-7	>= 1 - < 5
2,5-Bis(octyldithio)-1,3,4-thiadiazole	13539-13-4	>= 0.1 - < 1
Diocetyl disulphide	822-27-5	>= 0.1 - < 1
Benzenesulphonic acid, propenated, calcium salts, overbased	68610-84-4	>= 0.1 - < 1

Actual concentration or concentration range is withheld as a trade secret

## SECTION 4. FIRST AID MEASURES

General advice : In the case of accident or if you feel unwell, seek medical advice immediately.  
When symptoms persist or in all cases of doubt seek medical advice.

If inhaled : If inhaled, remove to fresh air.  
Get medical attention if symptoms occur.

In case of skin contact : In case of contact, immediately flush skin with plenty of water.  
Remove contaminated clothing and shoes.

**COPPER SUPREME SPECIAL BLEND®**

Version	Revision Date:	SDS Number:	Date of last issue: 10/01/2018
8.2	10/08/2018	115180-00018	Date of first issue: 05/12/2015

---

In case of eye contact	:	Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lens, if worn.
If swallowed	:	Get medical attention. If swallowed, DO NOT induce vomiting. Get medical attention if symptoms occur. Rinse mouth thoroughly with water.
Most important symptoms and effects, both acute and delayed	:	May cause an allergic skin reaction. Causes serious eye irritation.
Protection of first-aiders	:	First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists.
Notes to physician	:	Treat symptomatically and supportively.

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**SECTION 5. FIRE-FIGHTING MEASURES**

Suitable extinguishing media	:	Water spray Alcohol-resistant foam Carbon dioxide (CO <sub>2</sub> ) Dry chemical
Unsuitable extinguishing media	:	None known.
Specific hazards during fire fighting	:	Exposure to combustion products may be a hazard to health.
Hazardous combustion products	:	Carbon oxides Metal oxides Nitrogen oxides (NO <sub>x</sub> ) Sulfur oxides Silicon oxides
Specific extinguishing methods	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers. Remove undamaged containers from fire area if it is safe to do so. Evacuate area.
Special protective equipment for fire-fighters	:	In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.

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**SECTION 6. ACCIDENTAL RELEASE MEASURES**

Personal precautions, protective equipment and emergency procedures	:	Use personal protective equipment. Follow safe handling advice and personal protective equipment recommendations.
Environmental precautions	:	Discharge into the environment must be avoided. Prevent further leakage or spillage if safe to do so. Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.

# SAFETY DATA SHEET



## COPPER SUPREME SPECIAL BLEND®

Version 8.2      Revision Date: 10/08/2018      SDS Number: 115180-00018      Date of last issue: 10/01/2018  
 Date of first issue: 05/12/2015

Methods and materials for containment and cleaning up : Sweep up or vacuum up spillage and collect in suitable container for disposal.  
 Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.  
 Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

### SECTION 7. HANDLING AND STORAGE

Technical measures : See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

Advice on safe handling : Do not get on skin or clothing.  
 Do not swallow.  
 Do not get in eyes.  
 Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment  
 Take care to prevent spills, waste and minimize release to the environment.

Conditions for safe storage : Keep in properly labeled containers.  
 Store in accordance with the particular national regulations.

Materials to avoid : Do not store with the following product types:  
 Strong oxidizing agents

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Distillates (petroleum), hydrotreated heavy paraffinic	64742-54-7	TWA (Mist)	5 mg/m <sup>3</sup>	CA AB OEL
		STEL (Mist)	10 mg/m <sup>3</sup>	CA AB OEL
		TWAEV (Mist)	5 mg/m <sup>3</sup>	CA QC OEL
		STEV (Mist)	10 mg/m <sup>3</sup>	CA QC OEL
		TWA (Mist)	1 mg/m <sup>3</sup>	CA BC OEL
Distillates (petroleum), hydrotreated heavy naphthenic	64742-52-5	TWA (Mist)	5 mg/m <sup>3</sup>	CA AB OEL
		STEL (Mist)	10 mg/m <sup>3</sup>	CA AB OEL
		TWAEV (Mist)	5 mg/m <sup>3</sup>	CA QC OEL
		STEV (Mist)	10 mg/m <sup>3</sup>	CA QC OEL
		TWA (Mist)	1 mg/m <sup>3</sup>	CA BC OEL
		TWA (Inhalable fraction)	5 mg/m <sup>3</sup>	ACGIH
Graphite	7782-42-5	TWA (Respirable)	2 mg/m <sup>3</sup>	CA BC OEL
		TWA (Res-	2 mg/m <sup>3</sup>	CA AB OEL

# SAFETY DATA SHEET



## COPPER SUPREME SPECIAL BLEND®

Version 8.2      Revision Date: 10/08/2018      SDS Number: 115180-00018      Date of last issue: 10/01/2018  
 Date of first issue: 05/12/2015

		pirable)		
		TWAEV (respirable dust)	2 mg/m <sup>3</sup>	CA QC OEL
		TWA (Respirable fraction)	2 mg/m <sup>3</sup>	ACGIH
Copper metal powder	7440-50-8	TWA (Fumes)	0.2 mg/m <sup>3</sup>	CA AB OEL
		TWA (Dust and mist)	1 mg/m <sup>3</sup> (Copper)	CA AB OEL
		TWAEV (dusts and mists)	1 mg/m <sup>3</sup> (Copper)	CA QC OEL
		TWAEV (Fumes)	0.2 mg/m <sup>3</sup> (Copper)	CA QC OEL
		TWA (Dust and mists)	1 mg/m <sup>3</sup> (Copper)	CA BC OEL
		TWA (Fumes)	0.2 mg/m <sup>3</sup> (Copper)	CA BC OEL
		TWA (Dust and mist)	1 mg/m <sup>3</sup> (Copper)	ACGIH
		TWA (Fumes)	0.2 mg/m <sup>3</sup> (Copper)	ACGIH
Talc	14807-96-6	TWAEV (respirable dust)	3 mg/m <sup>3</sup>	CA QC OEL
		TWA (Respirable particulates)	2 mg/m <sup>3</sup>	CA AB OEL
		TWA (Respirable)	2 mg/m <sup>3</sup>	CA BC OEL
		TWA	2 fibres per cubic centimeter	CA ON OEL
		TWA (Respirable fraction)	2 mg/m <sup>3</sup>	CA ON OEL
		TWA (Respirable fraction)	2 mg/m <sup>3</sup>	ACGIH
Tris[bis(2-ethylhexyl)dithiocarbamate-S,S'] antimony	15991-76-1	TWA	0.5 mg/m <sup>3</sup> (antimony)	CA AB OEL
		TWAEV	0.5 mg/m <sup>3</sup> (antimony)	CA QC OEL
		TWA	0.5 mg/m <sup>3</sup> (antimony)	CA BC OEL
		TWA	0.5 mg/m <sup>3</sup> (antimony)	ACGIH
Calcium oxide	1305-78-8	TWA	2 mg/m <sup>3</sup>	CA AB OEL
		TWA	2 mg/m <sup>3</sup>	CA BC OEL
		TWAEV	2 mg/m <sup>3</sup>	CA QC OEL
		TWA	2 mg/m <sup>3</sup>	ACGIH

# SAFETY DATA SHEET



## COPPER SUPREME SPECIAL BLEND®

Version 8.2      Revision Date: 10/08/2018      SDS Number: 115180-00018      Date of last issue: 10/01/2018  
 Date of first issue: 05/12/2015

Antimony, dialkyl dithiocarbamate	15890-25-2	TWA	0.5 mg/m <sup>3</sup> (antimony)	CA AB OEL
		TWAEV	0.5 mg/m <sup>3</sup> (antimony)	CA QC OEL
		TWA	0.5 mg/m <sup>3</sup> (antimony)	CA BC OEL
		TWA	0.5 mg/m <sup>3</sup> (antimony)	ACGIH
Quartz	14808-60-7	TWA (Respirable particulates)	0.025 mg/m <sup>3</sup>	CA AB OEL
		TWA (Respirable fraction)	0.1 mg/m <sup>3</sup>	CA ON OEL
		TWAEV (respirable dust)	0.1 mg/m <sup>3</sup>	CA QC OEL
		TWA (Respirable)	0.025 mg/m <sup>3</sup> (Silica)	CA BC OEL
		TWA (Respirable fraction)	0.025 mg/m <sup>3</sup> (Silica)	ACGIH

**These substance(s) are inextricably bound in the product and therefore do not contribute to a dust inhalation hazard.**

Quartz

**Engineering measures** : Minimize workplace exposure concentrations. Dust formation may be relevant in the processing of this product. In addition to substance-specific OELs, general limitations of concentrations of particulates in the air at workplaces have to be considered in workplace risk assessment. Relevant limits include: OSHA PEL for Particulates Not Otherwise Regulated of 15 mg/m<sup>3</sup> - total dust, 5 mg/m<sup>3</sup> - respirable fraction; and ACGIH TWA for Particles (insoluble or poorly soluble) Not Otherwise Specified of 3 mg/m<sup>3</sup> - respirable particles, 10 mg/m<sup>3</sup> - inhalable particles.

### Personal protective equipment

Respiratory protection : Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines.

Filter type : Combined particulates and organic vapor type

Hand protection

Material : Chemical-resistant gloves

Remarks : Choose gloves to protect hands against chemicals depending on the concentration specific to place of work. Breakthrough time is not determined for the product. Change gloves often! For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective

# SAFETY DATA SHEET



## COPPER SUPREME SPECIAL BLEND®

Version 8.2      Revision Date: 10/08/2018      SDS Number: 115180-00018      Date of last issue: 10/01/2018  
Date of first issue: 05/12/2015

---

Eye protection : gloves with the glove manufacturer. Wash hands before breaks and at the end of workday.  
: Wear the following personal protective equipment:  
Safety goggles

Skin and body protection : Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential.  
Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc).

Hygiene measures : Ensure that eye flushing systems and safety showers are located close to the working place.  
When using do not eat, drink or smoke.  
Wash contaminated clothing before re-use.

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### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Viscous semi-solid  
Color : dark, copper  
Odor : Petroleum  
Odor Threshold : No data available

pH : Not applicable (not an aqueous solution)

Melting point/freezing point : No data available

Initial boiling point and boiling range : No data available  
Flash point :  $\geq 200$  °C

Evaporation rate : Not applicable

Flammability (solid, gas) : Not classified as a flammability hazard

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Vapor pressure : Not applicable

Relative vapor density : Not applicable

Relative density : 1.2

Solubility(ies)  
Water solubility : negligible

Partition coefficient: n-octanol/water : Not applicable

Autoignition temperature : No data available

**COPPER SUPREME SPECIAL BLEND®**

Version	Revision Date:	SDS Number:	Date of last issue: 10/01/2018
8.2	10/08/2018	115180-00018	Date of first issue: 05/12/2015

---

Decomposition temperature : No data available

Viscosity  
Viscosity, kinematic : Not applicable

Flow time : No data available

Explosive properties : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.

Molecular weight : No data available  
Particle size : No data available

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**SECTION 10. STABILITY AND REACTIVITY**

Reactivity : Not classified as a reactivity hazard.  
Chemical stability : Stable under normal conditions.  
Possibility of hazardous reactions : Can react with strong oxidizing agents.  
Conditions to avoid : None known.  
Incompatible materials : Oxidizing agents  
Hazardous decomposition products : No hazardous decomposition products are known.

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**SECTION 11. TOXICOLOGICAL INFORMATION****Information on likely routes of exposure**

Skin contact  
Ingestion  
Eye contact

**Acute toxicity**

Not classified based on available information.

**Product:**

Acute oral toxicity : Acute toxicity estimate: > 5,000 mg/kg  
Method: Calculation method  
Remarks: Based on data from similar materials

Acute toxicity estimate: > 5,000 mg/kg  
Method: Calculation method

Acute inhalation toxicity : Acute toxicity estimate: > 40 mg/l  
Exposure time: 4 h  
Test atmosphere: vapor  
Method: Calculation method

**Components:****Distillates (petroleum), hydrotreated heavy paraffinic:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg  
Method: OECD Test Guideline 401  
Remarks: Based on data from similar materials

---



**COPPER SUPREME SPECIAL BLEND®**

Version 8.2      Revision Date: 10/08/2018      SDS Number: 115180-00018      Date of last issue: 10/01/2018  
Date of first issue: 05/12/2015

---

Acute inhalation toxicity : LC50 (Rat): > 5.53 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403  
Assessment: The substance or mixture has no acute inhalation toxicity  
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg  
Method: OECD Test Guideline 402  
Remarks: Based on data from similar materials

**Distillates (petroleum), hydrotreated heavy naphthenic:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg  
Method: OECD Test Guideline 401  
Remarks: Based on data from similar materials

Acute inhalation toxicity : LC50 (Rat): > 5.53 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403  
Assessment: The substance or mixture has no acute inhalation toxicity  
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg  
Method: OECD Test Guideline 402  
Remarks: Based on data from similar materials

**Graphite:**

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg  
Method: OECD Test Guideline 423  
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat): > 2 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403

**Copper metal powder:**

Acute oral toxicity : LD50 (Rat): > 2,500 mg/kg  
Method: OECD Test Guideline 423  
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat): > 5.11 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 436  
Assessment: The substance or mixture has no acute inhalation toxicity

**COPPER SUPREME SPECIAL BLEND®**

Version 8.2      Revision Date: 10/08/2018      SDS Number: 115180-00018      Date of last issue: 10/01/2018  
Date of first issue: 05/12/2015

---

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg  
Method: OECD Test Guideline 402  
Assessment: The substance or mixture has no acute dermal toxicity

**Talc:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg  
Remarks: Based on data from similar materials

**Dilithium azelate:**

Acute oral toxicity : LD50 (Rat): > 300 - 2,000 mg/kg  
Method: OECD Test Guideline 420  
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg  
Method: OECD Test Guideline 402  
Remarks: Based on data from similar materials

**Tris[bis(2-ethylhexyl)dithiocarbamate-S,S'] antimony:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg  
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg  
Remarks: Based on data from similar materials

**Calcium oxide:**

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg  
Method: OECD Test Guideline 425

Acute inhalation toxicity : (Rat): > 5 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 436  
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rabbit): > 2,500 mg/kg  
Method: OECD Test Guideline 402  
Assessment: The substance or mixture has no acute dermal toxicity  
Remarks: Based on data from similar materials

**Antimony, dialkyl dithiocarbamate:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg

**Quartz:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

**COPPER SUPREME SPECIAL BLEND®**

Version 8.2      Revision Date: 10/08/2018      SDS Number: 115180-00018      Date of last issue: 10/01/2018  
Date of first issue: 05/12/2015

---

**2,5-Bis(octyldithio)-1,3,4-thiadiazole:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): 3.08 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg

**Dioctyl disulphide:**

Acute oral toxicity : LD50 (Rat): > 290 - 500 mg/kg  
Remarks: Based on data from similar materials

Acute inhalation toxicity : LC50 (Rat): 5.05 mg/l  
Exposure time: 4 h  
Test atmosphere: vapor  
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg  
Remarks: Based on data from similar materials

**Benzenesulphonic acid, propenated, calcium salts, overbased:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg  
Method: OECD Test Guideline 423

Acute dermal toxicity : LD50 (Rat): > 5,000 mg/kg  
Method: OECD Test Guideline 402

**Skin corrosion/irritation**

Not classified based on available information.

**Components:****Distillates (petroleum), hydrotreated heavy paraffinic:**

Species : Rabbit  
Result : No skin irritation  
Remarks : Based on data from similar materials

**Distillates (petroleum), hydrotreated heavy naphthenic:**

Species : Rabbit  
Result : No skin irritation  
Remarks : Based on data from similar materials

**Graphite:**

Species : Rabbit  
Method : OECD Test Guideline 404  
Result : No skin irritation

**Copper metal powder:**

Species : Rabbit  
Method : OECD Test Guideline 404

**COPPER SUPREME SPECIAL BLEND®**

Version 8.2      Revision Date: 10/08/2018      SDS Number: 115180-00018      Date of last issue: 10/01/2018  
Date of first issue: 05/12/2015

---

Result : No skin irritation

**Talc:**

Species : Rabbit  
Result : No skin irritation

**Dilithium azelate:**

Method : OECD Test Guideline 439  
Result : No skin irritation  
Remarks : Based on data from similar materials

**Calcium oxide:**

Species : Rabbit  
Method : OECD Test Guideline 404  
Result : Skin irritation  
Remarks : Based on data from similar materials

**2,5-Bis(octyldithio)-1,3,4-thiadiazole:**

Species : Rabbit  
Result : Skin irritation

**Benzenesulphonic acid, propenated, calcium salts, overbased:**

Species : Rabbit  
Result : No skin irritation  
Remarks : Based on data from similar materials

**Serious eye damage/eye irritation**

Causes serious eye irritation.

**Components:****Distillates (petroleum), hydrotreated heavy paraffinic:**

Species : Rabbit  
Result : No eye irritation  
Method : OECD Test Guideline 405  
Remarks : Based on data from similar materials

**Distillates (petroleum), hydrotreated heavy naphthenic:**

Species : Rabbit  
Result : No eye irritation  
Remarks : Based on data from similar materials

**Graphite:**

Species : Rabbit  
Result : No eye irritation  
Method : OECD Test Guideline 405

**Copper metal powder:**

Species : Rabbit

**COPPER SUPREME SPECIAL BLEND®**

Version 8.2      Revision Date: 10/08/2018      SDS Number: 115180-00018      Date of last issue: 10/01/2018  
Date of first issue: 05/12/2015

---

Result : No eye irritation  
Method : OECD Test Guideline 405

**Talc:**

Species : Rabbit  
Result : No eye irritation

**Dilithium azelate:**

Species : Rabbit  
Result : No eye irritation  
Method : OECD Test Guideline 405

**Calcium oxide:**

Species : Rabbit  
Result : Irreversible effects on the eye  
Method : OECD Test Guideline 405

**2,5-Bis(octyldithio)-1,3,4-thiadiazole:**

Species : Rabbit  
Result : Irritation to eyes, reversing within 21 days

**Benzenesulphonic acid, propenated, calcium salts, overbased:**

Species : Rabbit  
Result : No eye irritation  
Method : OECD Test Guideline 405

**Respiratory or skin sensitization****Skin sensitization**

May cause an allergic skin reaction.

**Respiratory sensitization**

Not classified based on available information.

**Components:****Distillates (petroleum), hydrotreated heavy paraffinic:**

Test Type : Buehler Test  
Routes of exposure : Skin contact  
Species : Guinea pig  
Method : OECD Test Guideline 406  
Result : negative  
Remarks : Based on data from similar materials

**Distillates (petroleum), hydrotreated heavy naphthenic:**

Test Type : Buehler Test  
Routes of exposure : Skin contact  
Species : Guinea pig  
Result : negative  
Remarks : Based on data from similar materials

**COPPER SUPREME SPECIAL BLEND®**

Version 8.2      Revision Date: 10/08/2018      SDS Number: 115180-00018      Date of last issue: 10/01/2018  
Date of first issue: 05/12/2015

---

**Graphite:**

Test Type : Local lymph node assay (LLNA)  
Routes of exposure : Skin contact  
Species : Mouse  
Result : negative

**Copper metal powder:**

Test Type : Maximization Test  
Routes of exposure : Skin contact  
Species : Guinea pig  
Method : OECD Test Guideline 406  
Result : negative

**Talc:**

Routes of exposure : Skin contact  
Species : Humans  
Result : negative

**Dilithium azelate:**

Test Type : Local lymph node assay (LLNA)  
Routes of exposure : Skin contact  
Species : Mouse  
Method : OECD Test Guideline 429  
Result : negative  
Remarks : Based on data from similar materials

**Calcium oxide:**

Test Type : Local lymph node assay (LLNA)  
Routes of exposure : Skin contact  
Species : Mouse  
Method : OECD Test Guideline 429  
Result : negative  
Remarks : Based on data from similar materials

**2,5-Bis(octyldithio)-1,3,4-thiadiazole:**

Routes of exposure : Skin contact  
Species : Guinea pig  
Result : positive

Assessment : Probability or evidence of skin sensitization in humans

**Benzenesulphonic acid, propenated, calcium salts, overbased:**

Test Type : Buehler Test  
Routes of exposure : Skin contact  
Species : Guinea pig  
Method : OECD Test Guideline 406  
Result : positive

Assessment : Probability or evidence of skin sensitization in humans

**COPPER SUPREME SPECIAL BLEND®**

Version 8.2      Revision Date: 10/08/2018      SDS Number: 115180-00018      Date of last issue: 10/01/2018  
Date of first issue: 05/12/2015

---

**Germ cell mutagenicity**

Not classified based on available information.

**Components:****Distillates (petroleum), hydrotreated heavy paraffinic:**

- Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Method: OECD Test Guideline 471  
Result: negative
- Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)  
Species: Mouse  
Application Route: Intraperitoneal injection  
Method: OECD Test Guideline 474  
Result: negative  
Remarks: Based on data from similar materials

**Distillates (petroleum), hydrotreated heavy naphthenic:**

- Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Method: OECD Test Guideline 471  
Result: negative
- Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)  
Species: Mouse  
Application Route: Intraperitoneal injection  
Method: OECD Test Guideline 474  
Result: negative  
Remarks: Based on data from similar materials

**Graphite:**

- Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Method: OECD Test Guideline 471  
Result: negative
- Test Type: In vitro mammalian cell gene mutation test  
Method: OECD Test Guideline 476  
Result: negative
- Test Type: Chromosome aberration test in vitro  
Method: OECD Test Guideline 473  
Result: negative

**Copper metal powder:**

- Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Method: OECD Test Guideline 471  
Result: negative
- Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)  
Species: Mouse  
Application Route: Ingestion

**COPPER SUPREME SPECIAL BLEND®**

Version	Revision Date:	SDS Number:	Date of last issue: 10/01/2018
8.2	10/08/2018	115180-00018	Date of first issue: 05/12/2015

---

Method: Directive 67/548/EEC, Annex V, B.12.  
 Result: negative  
 Remarks: Based on data from similar materials

**Talc:**

Genotoxicity in vitro : Test Type: DNA damage and repair, unscheduled DNA synthesis in mammalian cells (in vitro)  
 Result: negative

Genotoxicity in vivo : Test Type: Chromosome aberration test in vitro  
 Species: Rat  
 Application Route: Ingestion  
 Result: negative

**Dilithium azelate:**

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
 Method: OECD Test Guideline 471  
 Result: negative

Test Type: In vitro mammalian cell gene mutation test  
 Method: OECD Test Guideline 476  
 Result: negative  
 Remarks: Based on data from similar materials

Test Type: Chromosome aberration test in vitro  
 Method: OECD Test Guideline 473  
 Result: negative  
 Remarks: Based on data from similar materials

**Calcium oxide:**

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
 Method: OECD Test Guideline 471  
 Result: negative

Test Type: Chromosome aberration test in vitro  
 Method: OECD Test Guideline 473  
 Result: negative  
 Remarks: Based on data from similar materials

Test Type: In vitro mammalian cell gene mutation test  
 Method: OECD Test Guideline 476  
 Result: negative  
 Remarks: Based on data from similar materials

**Antimony, dialkyl dithiocarbamate:**

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
 Result: negative

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)  
 Species: Mouse  
 Application Route: Intraperitoneal injection



**COPPER SUPREME SPECIAL BLEND®**

Version	Revision Date:	SDS Number:	Date of last issue: 10/01/2018
8.2	10/08/2018	115180-00018	Date of first issue: 05/12/2015

---

Method: OECD Test Guideline 474

Result: equivocal

**Benzenesulphonic acid, propenated, calcium salts, overbased:**

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Method: OECD Test Guideline 471  
Result: negative  
Remarks: Based on data from similar materials

**Carcinogenicity**

Not classified based on available information.

**Product:**

Carcinogenicity - Assessment : Petroleum distillates have been classified as not carcinogenic based on DMSO extract content < 3% (Regulation (EC) 1272/2008, Annex VI, Part 3, Note L).

**Components:****Distillates (petroleum), hydrotreated heavy paraffinic:**

Species : Mouse  
Application Route : Skin contact  
Exposure time : 78 weeks  
Method : OECD Test Guideline 451  
Result : negative  
Remarks : Based on data from similar materials

**Distillates (petroleum), hydrotreated heavy naphthenic:**

Species : Mouse  
Application Route : Skin contact  
Exposure time : 78 weeks  
Method : OECD Test Guideline 451  
Result : negative

**Talc:**

Species : Mouse  
Application Route : inhalation (dust/mist/fume)  
Exposure time : 2 Years  
Result : negative

**Calcium oxide:**

Species : Rat  
Application Route : Ingestion  
Exposure time : 104 weeks  
Result : negative  
Remarks : Based on data from similar materials

**Quartz:**

Species : Humans  
Application Route : inhalation (dust/mist/fume)

**COPPER SUPREME SPECIAL BLEND®**

Version	Revision Date:	SDS Number:	Date of last issue: 10/01/2018
8.2	10/08/2018	115180-00018	Date of first issue: 05/12/2015

---

Result : positive  
 Remarks : IARC: (International Agency for Research on Cancer)  
 These substance(s) are inextricably bound in the product and therefore do not contribute to a dust inhalation hazard.

Carcinogenicity - Assessment : Positive evidence from human epidemiological studies (inhalation)

**Reproductive toxicity**

Not classified based on available information.

**Components:****Distillates (petroleum), hydrotreated heavy paraffinic:**

Effects on fertility : Test Type: Reproduction/Developmental toxicity screening test  
 Species: Rat  
 Application Route: Ingestion  
 Result: negative  
 Remarks: Based on data from similar materials

Effects on fetal development : Test Type: Embryo-fetal development  
 Species: Rat  
 Application Route: Skin contact  
 Method: OECD Test Guideline 414  
 Result: negative  
 Remarks: Based on data from similar materials

**Graphite:**

Effects on fertility : Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test  
 Species: Rat  
 Application Route: Ingestion  
 Method: OECD Test Guideline 422  
 Result: negative

Effects on fetal development : Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test  
 Species: Rat  
 Application Route: Ingestion  
 Method: OECD Test Guideline 422  
 Result: negative

**Copper metal powder:**

Effects on fertility : Test Type: Two-generation reproduction toxicity study  
 Species: Rat  
 Application Route: Ingestion  
 Result: negative  
 Remarks: Based on data from similar materials

Effects on fetal development : Test Type: Embryo-fetal development  
 Species: Rabbit  
 Application Route: Ingestion

**COPPER SUPREME SPECIAL BLEND®**

Version 8.2      Revision Date: 10/08/2018      SDS Number: 115180-00018      Date of last issue: 10/01/2018  
Date of first issue: 05/12/2015

---

Result: negative

**Talc:**

Effects on fetal development : Test Type: Embryo-fetal development  
Species: Rat  
Application Route: Ingestion  
Result: negative

**Dilithium azelate:**

Effects on fertility : Test Type: Reproduction/Developmental toxicity screening test  
Species: Rat  
Application Route: Skin contact  
Result: negative  
Remarks: Based on data from similar materials

Effects on fetal development : Test Type: Reproduction/Developmental toxicity screening test  
Species: Rat  
Application Route: Skin contact  
Result: negative  
Remarks: Based on data from similar materials

**Calcium oxide:**

Effects on fertility : Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test  
Species: Rat  
Application Route: Ingestion  
Method: OECD Test Guideline 422  
Result: negative  
Remarks: Based on data from similar materials

Effects on fetal development : Test Type: Embryo-fetal development  
Species: Mouse  
Application Route: Ingestion  
Method: OECD Test Guideline 414  
Result: negative

**Antimony, dialkyl dithiocarbamate:**

Effects on fertility : Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test  
Species: Rat  
Application Route: Ingestion  
Result: negative

Effects on fetal development : Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test  
Species: Rat  
Application Route: Ingestion  
Result: negative

**COPPER SUPREME SPECIAL BLEND®**

Version	Revision Date:	SDS Number:	Date of last issue: 10/01/2018
8.2	10/08/2018	115180-00018	Date of first issue: 05/12/2015

---

**STOT-single exposure**

Not classified based on available information.

**Components:****Calcium oxide:**

Assessment : May cause respiratory irritation.

**STOT-repeated exposure**

Not classified based on available information.

**Components:****Quartz:**

Routes of exposure	:	inhalation (dust/mist/fume)
Target Organs	:	Lungs
Assessment	:	Shown to produce significant health effects in animals at concentrations of 0.02 mg/l/6h/d or less.

**Repeated dose toxicity****Components:****Distillates (petroleum), hydrotreated heavy paraffinic:**

Species	:	Rabbit
NOAEL	:	1,000 mg/kg
Application Route	:	Skin contact
Exposure time	:	4 Weeks
Method	:	OECD Test Guideline 410
Remarks	:	Based on data from similar materials

Species	:	Rat
NOAEL	:	> 980 mg/m <sup>3</sup>
Application Route	:	inhalation (dust/mist/fume)
Exposure time	:	4 Weeks

**Distillates (petroleum), hydrotreated heavy naphthenic:**

Species	:	Rat
NOAEL	:	> 0.98 mg/l
Application Route	:	inhalation (dust/mist/fume)
Exposure time	:	28 Days
Remarks	:	Based on data from similar materials

**Copper metal powder:**

Species	:	Rat
NOAEL	:	>= 2 mg/m <sup>3</sup>
Application Route	:	inhalation (dust/mist/fume)
Exposure time	:	28 Days

**Dilithium azelate:**

Species	:	Rat
NOAEL	:	1,089.75 mg/kg

**COPPER SUPREME SPECIAL BLEND®**

Version	Revision Date:	SDS Number:	Date of last issue: 10/01/2018
8.2	10/08/2018	115180-00018	Date of first issue: 05/12/2015

---

Application Route : Skin contact  
 Exposure time : 28 Days  
 Remarks : Based on data from similar materials

**Calcium oxide:**

Species : Rat  
 NOAEL :  $\geq 0.399$  mg/l  
 Application Route : inhalation (dust/mist/fume)  
 Exposure time : 90 Days  
 Method : OECD Test Guideline 413

**Antimony, dialkyl dithiocarbamate:**

Species : Rat  
 NOAEL :  $\geq 1,000$  mg/kg  
 Application Route : Ingestion  
 Exposure time : 54 Days

**Quartz:**

Species : Humans  
 LOAEL :  $0.053$  mg/m<sup>3</sup>  
 Application Route : inhalation (dust/mist/fume)  
 Remarks : These substance(s) are inextricably bound in the product and therefore do not contribute to a dust inhalation hazard.

**Aspiration toxicity**

Not classified based on available information.

---

**SECTION 12. ECOLOGICAL INFORMATION****Ecotoxicity****Product:**

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 10,250 mg/l  
 Exposure time: 96 h  
 Method: OECD Test Guideline 203  
 Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 15,470 mg/l  
 Exposure time: 96 h  
 Method: OECD Test Guideline 202  
 Remarks: Based on data from similar materials

EC50 (Daphnia magna (Water flea)): 30,940 mg/l  
 Exposure time: 48 h  
 Method: OECD Test Guideline 202  
 Remarks: Based on data from similar materials

Toxicity to algae : EC50 (Selenastrum capricornutum (green algae)): 70,100 mg/l  
 Exposure time: 96 h  
 Method: OECD Test Guideline 201

**COPPER SUPREME SPECIAL BLEND®**

Version	Revision Date:	SDS Number:	Date of last issue: 10/01/2018
8.2	10/08/2018	115180-00018	Date of first issue: 05/12/2015

---

Remarks: Based on data from similar materials

NOEC (Selenastrum capricornutum (green algae)): 60,000 mg/l

Exposure time: 96 h

Method: OECD Test Guideline 201

Remarks: Based on data from similar materials

**Components:****Distillates (petroleum), hydrotreated heavy paraffinic:**

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): > 100 mg/l  
 Exposure time: 96 h  
 Method: OECD Test Guideline 203  
 Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 10,000 mg/l  
 Exposure time: 48 h  
 Method: OECD Test Guideline 202  
 Remarks: Based on data from similar materials

Toxicity to algae : EC50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l  
 Exposure time: 72 h  
 Method: OECD Test Guideline 201  
 Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 10 mg/l  
 Exposure time: 21 d  
 Method: OECD Test Guideline 211  
 Remarks: Based on data from similar materials

Toxicity to microorganisms : NOEC: > 1.93 mg/l  
 Exposure time: 10 min  
 Method: DIN 38 412 Part 8  
 Remarks: Based on data from similar materials

**Distillates (petroleum), hydrotreated heavy naphthenic:**

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): > 100 mg/l  
 Exposure time: 96 h  
 Method: OECD Test Guideline 203  
 Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 10,000 mg/l  
 Exposure time: 48 h  
 Remarks: Based on data from similar materials

Toxicity to algae : EC50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l  
 Exposure time: 72 h  
 Method: OECD Test Guideline 201  
 Remarks: Based on data from similar materials

Toxicity to daphnia and other : NOEC (Daphnia magna (Water flea)): 10 mg/l

**COPPER SUPREME SPECIAL BLEND®**

Version	Revision Date:	SDS Number:	Date of last issue: 10/01/2018
8.2	10/08/2018	115180-00018	Date of first issue: 05/12/2015

---

aquatic invertebrates (Chronic toxicity) : Exposure time: 21 d  
Remarks: Based on data from similar materials

Toxicity to microorganisms : NOEC: > 1.93 mg/l  
Exposure time: 10 min  
Remarks: Based on data from similar materials

**Graphite:**

Toxicity to fish : LL50 (Danio rerio (zebra fish)): > 100 mg/l  
Exposure time: 96 h  
Test substance: Water Accommodated Fraction  
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EL50 (Daphnia magna (Water flea)): > 100 mg/l  
Exposure time: 48 h  
Test substance: Water Accommodated Fraction  
Method: OECD Test Guideline 202

Toxicity to algae : EL50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l  
Exposure time: 72 h  
Test substance: Water Accommodated Fraction  
Method: OECD Test Guideline 201

NOELR (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l  
Exposure time: 72 h  
Test substance: Water Accommodated Fraction  
Method: OECD Test Guideline 201

Toxicity to microorganisms : EC50: > 1,012.5 mg/l  
Exposure time: 3 h  
Method: OECD Test Guideline 209

**Copper metal powder:**

Toxicity to fish : LC50: > 10 - 100 µg/l  
Exposure time: 96 h

Toxicity to fish (Chronic toxicity) : NOEC: > 1 - 10 µg/l

**Talc:**

Toxicity to fish : LC50 (Brachydanio rerio (zebrafish)): > 100,000 mg/l  
Exposure time: 24 h

**Dilithium azelate:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 10 - 100 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203  
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 10 - 100 mg/l  
Exposure time: 48 h

**COPPER SUPREME SPECIAL BLEND®**

Version	Revision Date:	SDS Number:	Date of last issue: 10/01/2018
8.2	10/08/2018	115180-00018	Date of first issue: 05/12/2015

---

Method: OECD Test Guideline 202  
 Remarks: Based on data from similar materials

Toxicity to algae : NOEC (Pseudokirchneriella subcapitata (green algae)): > 1 mg/l  
 Exposure time: 72 h  
 Remarks: Based on data from similar materials

ErC50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l  
 Exposure time: 72 h  
 Remarks: Based on data from similar materials

**Tris[bis(2-ethylhexyl)dithiocarbamate-S,S'] antimony:**

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.02 mg/l  
 Exposure time: 21 d  
 Method: OECD Test Guideline 211  
 Remarks: Based on data from similar materials

**Ecotoxicology Assessment**

Chronic aquatic toxicity : Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Calcium oxide:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l  
 Exposure time: 96 h  
 Method: OECD Test Guideline 203  
 Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l  
 Exposure time: 96 h  
 Method: OECD Test Guideline 202  
 Remarks: Based on data from similar materials

Toxicity to algae : ErC50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l  
 Exposure time: 72 h  
 Method: OECD Test Guideline 201  
 Remarks: Based on data from similar materials

EC10 (Pseudokirchneriella subcapitata (green algae)): > 1 mg/l  
 Exposure time: 72 h  
 Method: OECD Test Guideline 201  
 Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Crangon crangon (shrimp)): > 1 mg/l  
 Exposure time: 14 d  
 Remarks: Based on data from similar materials

Toxicity to microorganisms : EC50: > 100 mg/l  
 Exposure time: 3 h  
 Method: OECD Test Guideline 209



**COPPER SUPREME SPECIAL BLEND®**

Version	Revision Date:	SDS Number:	Date of last issue: 10/01/2018
8.2	10/08/2018	115180-00018	Date of first issue: 05/12/2015

---

Remarks: Based on data from similar materials

**Antimony, dialkyl dithiocarbamate:**

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.02 mg/l  
 Exposure time: 21 d  
 Method: OECD Test Guideline 211

**Ecotoxicology Assessment**

Chronic aquatic toxicity : Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Quartz:****Ecotoxicology Assessment**

Acute aquatic toxicity : No toxicity at the limit of solubility.

Chronic aquatic toxicity : No toxicity at the limit of solubility.

**Benzenesulphonic acid, propenated, calcium salts, overbased:**

Toxicity to fish : LL50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l  
 Exposure time: 96 h  
 Test substance: Water Accommodated Fraction  
 Method: OECD Test Guideline 203  
 Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EL50 (Daphnia magna (Water flea)): > 1,000 mg/l  
 Exposure time: 48 h  
 Test substance: Water Accommodated Fraction  
 Remarks: Based on data from similar materials

Toxicity to algae : NOELR (Pseudokirchneriella subcapitata (green algae)): 1,000 mg/l  
 Exposure time: 72 h  
 Test substance: Water Accommodated Fraction  
 Remarks: Based on data from similar materials

Toxicity to microorganisms : EC50: > 10,000 mg/l  
 Exposure time: 3 h  
 Remarks: Based on data from similar materials

**Persistence and degradability****Product:**

Biodegradability : Result: Readily biodegradable.  
 Remarks: Based on data from similar materials

**Components:****Distillates (petroleum), hydrotreated heavy paraffinic:**

Biodegradability : Result: Not readily biodegradable.  
 Biodegradation: 31 %

**COPPER SUPREME SPECIAL BLEND®**

Version	Revision Date:	SDS Number:	Date of last issue: 10/01/2018
8.2	10/08/2018	115180-00018	Date of first issue: 05/12/2015

---

Exposure time: 28 d  
Method: OECD Test Guideline 301F

**Distillates (petroleum), hydrotreated heavy naphthenic:**

Biodegradability : Result: Not readily biodegradable.  
Biodegradation: 2 - 4 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301B

**Dilithium azelate:**

Biodegradability : Result: Readily biodegradable.  
Biodegradation: 83 %  
Exposure time: 30 d  
Method: OECD Test Guideline 301D  
Remarks: Based on data from similar materials

**Tris[bis(2-ethylhexyl)dithiocarbamate-S,S'] antimony:**

Biodegradability : Result: Not readily biodegradable.  
Remarks: Based on data from similar materials

**Antimony, dialkyl dithiocarbamate:**

Biodegradability : Result: Not readily biodegradable.  
Biodegradation: 20 %  
Exposure time: 28 d

**Benzenesulphonic acid, propenated, calcium salts, overbased:**

Biodegradability : Result: Not readily biodegradable.  
Biodegradation: 12.5 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301B  
Remarks: Based on data from similar materials

**Bioaccumulative potential****Components:****Dilithium azelate:**

Partition coefficient: n-  
octanol/water : log Pow: -3.53

**Benzenesulphonic acid, propenated, calcium salts, overbased:**

Partition coefficient: n-  
octanol/water : log Pow: 5.8

**Mobility in soil**

No data available

**Other adverse effects**

No data available

**COPPER SUPREME SPECIAL BLEND®**

Version	Revision Date:	SDS Number:	Date of last issue: 10/01/2018
8.2	10/08/2018	115180-00018	Date of first issue: 05/12/2015

**SECTION 13. DISPOSAL CONSIDERATIONS****Disposal methods**

Waste from residues : Dispose of in accordance with local regulations.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.  
 Empty containers retain residue and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury and/or death.  
 If not otherwise specified: Dispose of as unused product.

**SECTION 14. TRANSPORT INFORMATION****International Regulations****UNRTDG**

UN number : UN 3077

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.  
 (Copper metal powder, Antimony, dialkyl dithiocarbamate)

Class : 9

Packing group : III

Labels : 9

**IATA-DGR**

UN/ID No. : UN 3077

Proper shipping name : Environmentally hazardous substance, solid, n.o.s.  
 (Copper metal powder, Antimony, dialkyl dithiocarbamate)

Class : 9

Packing group : III

Labels : Miscellaneous

Packing instruction (cargo aircraft) : 956

Packing instruction (passenger aircraft) : 956

Environmentally hazardous : yes

**IMDG-Code**

UN number : UN 3077

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.  
 (Copper metal powder, Antimony, dialkyl dithiocarbamate)

Class : 9

Packing group : III

Labels : 9

EmS Code : F-A, S-F

Marine pollutant : yes

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

Not applicable for product as supplied.

**Domestic regulation****TDG**

## COPPER SUPREME SPECIAL BLEND®

Version	Revision Date:	SDS Number:	Date of last issue: 10/01/2018
8.2	10/08/2018	115180-00018	Date of first issue: 05/12/2015

---

UN number	:	UN 3077
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper metal powder, Antimony, dialkyl dithiocarbamate)
Class	:	9
Packing group	:	III
Labels	:	9
ERG Code	:	171
Marine pollutant	:	yes(Copper metal powder, Antimony, dialkyl dithiocarbamate)

**Special precautions for user**

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

**SECTION 15. REGULATORY INFORMATION****The ingredients of this product are reported in the following inventories:**

DSL	:	All components of this product are on the Canadian DSL
TSCA	:	All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.
AICS	:	All ingredients listed or exempt.

**SECTION 16. OTHER INFORMATION****Full text of other abbreviations**

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
CA AB OEL	:	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
CA BC OEL	:	Canada. British Columbia OEL
CA ON OEL	:	Ontario Table of Occupational Exposure Limits made under the Occupational Health and Safety Act.
CA QC OEL	:	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
ACGIH / TWA	:	8-hour, time-weighted average
CA AB OEL / TWA	:	8-hour Occupational exposure limit
CA AB OEL / STEL	:	15-minute occupational exposure limit
CA BC OEL / TWA	:	8-hour time weighted average
CA ON OEL / TWA	:	Time-Weighted Average Limit (TWA)
CA QC OEL / TWAEV	:	Time-weighted average exposure value
CA QC OEL / STEV	:	Short-term exposure value

AICS - Australian Inventory of Chemical Substances; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; CPR - Controlled Products Regulations; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan);

**COPPER SUPREME SPECIAL BLEND®**

Version	Revision Date:	SDS Number:	Date of last issue: 10/01/2018
8.2	10/08/2018	115180-00018	Date of first issue: 05/12/2015

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ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

Sources of key data used to compile the Material Safety Data Sheet : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <http://echa.europa.eu/>

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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 is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

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