

**AL 1100, Aluminum anti-seize paste, 284 g**

Version	Revision Date:	SDS Number:	Date of last issue: 02/18/2022
5.0	03/31/2022	10613424-00006	Date of first issue: 02/23/2015

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**SECTION 1. IDENTIFICATION**

Product name : AL 1100, Aluminum anti-seize paste, 284 g

Product code : 890.921284

Other means of identification : No data available

**Manufacturer or supplier's details**

Company name of supplier : Würth Canada Limited

Address : 345 Hanlon Creek Blvd  
GUELPH, ON N1C 0A1

Telephone : +1 (905) 564 6225

Telefax : +1 (905) 564 3671

Emergency telephone : Emergencies involving a spill, fire, explosion or exposure:  
CHEMTREC (24/7): 1-800-424-9300  
Transport related emergencies:  
CANUTEC (24/7): 1-613-996-6666 or \* 666 (cell)

Urgences impliquant un déversement, incendie, explosion ou exposition:  
CHEMTREC (24/7): 1-800-424-9300  
Urgences liées au transport:  
CANUTEC (24/7): 1-613-996-6666 ou \* 666 (cellulaire)

E-mail address : prodsafe@wurth.ca

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

Recommended use : Lubricants and lubricant additives

Restrictions on use : Not applicable

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**SECTION 2. HAZARDS IDENTIFICATION****GHS classification in accordance with the Hazardous Products Regulations**

**||** Not a hazardous substance or mixture.

**GHS label elements**

**||** Not a hazardous substance or mixture.

**Other hazards**

None known.

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**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

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Substance / Mixture : Mixture

**Components**

Chemical name	Common Name/Synonym	CAS-No.	Concentration (% w/w)
Distillates (petroleum), hydrotreated heavy naphthenic	No data available	64742-52-5	$\geq 60 - < 80$ *
Graphite	Graphitic carbon	7782-42-5	$\geq 10 - < 30$ *
Copper metal powder	No data available	7440-50-8	$\geq 10 - < 30$ *
Aluminium	No data available	7429-90-5	$\geq 5 - < 10$ *
Zinc oxide	Zinc monoxide	1314-13-2	$\geq 5 - < 10$ *

|| \* Actual concentration or concentration range is withheld as a trade secret

**SECTION 4. FIRST AID MEASURES**

- || If inhaled : If inhaled, remove to fresh air.  
Get medical attention if symptoms occur.
- || In case of skin contact : Wash with water and soap as a precaution.  
Get medical attention if symptoms occur.
- || In case of eye contact : Flush eyes with water as a precaution.  
Get medical attention if irritation develops and persists.
- || If swallowed : 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 : None known.
- || Protection of first-aiders : No special precautions are necessary for first aid responders.
- || Notes to physician : Treat symptomatically and supportively.

**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.

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|--|---|
| Hazardous combustion products                  | : Carbon oxides<br>Metal oxides   |
| Specific extinguishing methods                 | : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.<br>Use water spray to cool unopened containers.<br>Remove undamaged containers from fire area if it is safe to do so.<br>Evacuate area. |
| Special protective equipment for fire-fighters | : Wear self-contained breathing apparatus for firefighting if necessary.<br>Use personal protective equipment.  |

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

- |   |   |
|---|---|
| Personal precautions, protective equipment and emergency procedures | : Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).  |
| Environmental precautions   | : Avoid release to the environment.<br>Prevent further leakage or spillage if safe to do so.<br>Prevent spreading over a wide area (e.g., by containment or oil barriers).<br>Retain and dispose of contaminated wash water.<br>Local authorities should be advised if significant spillages cannot be contained.   |
| Methods and materials for containment and cleaning up               | : Soak up with inert absorbent material.<br>For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container.<br>Clean up remaining materials from spill with suitable absorbent.<br>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.<br>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.   |
| Local/Total ventilation | : Use only with adequate ventilation.   |
| Advice on safe handling | : Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment<br>Take care to prevent spills, waste and minimize release to the environment. |

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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  
 Gases

**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 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
Graphite	7782-42-5	TWA (Inhalable particulate matter)	5 mg/m <sup>3</sup>	ACGIH
		TWA (Respirable)	2 mg/m <sup>3</sup>	CA BC OEL
		TWAEV (respirable dust)	2 mg/m <sup>3</sup>	CA QC OEL
		TWA (Respirable)	2 mg/m <sup>3</sup>	CA AB OEL
Copper metal powder	7440-50-8	TWA (Respirable particulate matter)	2 mg/m <sup>3</sup>	ACGIH
		TWA (Dust and mist)	1 mg/m <sup>3</sup> (Copper)	CA AB OEL
		TWA (Fumes)	0.2 mg/m <sup>3</sup>	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
Aluminium	7429-90-5	TWA (Fumes)	0.2 mg/m <sup>3</sup> (Copper)	ACGIH
		TWA (Dust)	10 mg/m <sup>3</sup>	CA AB OEL

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		TWAEV	10 mg/m <sup>3</sup>	CA QC OEL
		TWAEV (Welding fumes)	5 mg/m <sup>3</sup> (Aluminum)	CA QC OEL
		TWA (Respirable)	1 mg/m <sup>3</sup> (Aluminum)	CA BC OEL
		TWA (Respirable particulate matter)	1 mg/m <sup>3</sup> (Aluminum)	ACGIH
Zinc oxide	1314-13-2	TWA (Respirable)	2 mg/m <sup>3</sup>	CA AB OEL
		STEL (Respirable)	10 mg/m <sup>3</sup>	CA AB OEL
		TWA (Respirable)	2 mg/m <sup>3</sup>	CA BC OEL
		STEL (Respirable)	10 mg/m <sup>3</sup>	CA BC OEL
		TWAEV (respirable dust)	2 mg/m <sup>3</sup>	CA QC OEL
		STEV (respirable dust)	10 mg/m <sup>3</sup>	CA QC OEL
		TWA (Respirable particulate matter)	2 mg/m <sup>3</sup>	ACGIH
		STEL (Respirable particulate matter)	10 mg/m <sup>3</sup>	ACGIH

**Engineering measures** : Ensure adequate ventilation, especially in confined areas.  
 Minimize workplace exposure concentrations.

**Personal protective equipment**

Respiratory protection : If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.

Filter type : Combined particulates and organic vapor type

Hand protection

Remarks : Wash hands before breaks and at the end of workday.

Eye protection : Wear the following personal protective equipment:  
 Safety glasses  
 Always wear eye protection when the potential for inadvertent eye contact with the product cannot be excluded.  
 Please follow all applicable local/national requirements when selecting protective measures for a specific workplace.

Skin and body protection : Skin should be washed after contact.

Hygiene measures : If exposure to chemical is likely during typical use, provide

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eye flushing systems and safety showers 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	:	paste
Color	:	silver
Odor	:	mild
Odor Threshold	:	No data available
pH	:	No data available
Melting point/freezing point	:	No data available
Initial boiling point and boiling range	:	> 100 °C
Flash point	:	177 °C
Evaporation rate	:	No data available
Flammability (solid, gas)	:	Not applicable
Flammability (liquids)	:	Ignitable (see flash point)
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapor pressure	:	No data available
Relative vapor density	:	No data available
Relative density	:	1.2
Density	:	1.4 g/cm <sup>3</sup> (20 °C)
Solubility(ies) Water solubility	:	insoluble
Partition coefficient: n-octanol/water	:	Not applicable

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Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity	:	
Viscosity, kinematic	:	No data available
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.
Particle size	:	< 0.044 mm

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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	:	None known.
Conditions to avoid	:	None known.
Incompatible materials	:	None.
Hazardous decomposition products	:	No hazardous decomposition products are known.

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

Inhalation  
Skin contact  
Ingestion  
Eye contact

**Acute toxicity**

**||** Not classified based on available information.

**Product:**

Acute inhalation toxicity	:	Assessment: The substance/mixture is not toxic on inhalation as defined by dangerous goods regulations.
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**Components:****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

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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

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

**Aluminium:**

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): > 0.888 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

**Zinc oxide:**

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



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Acute inhalation toxicity : LC50 (Rat): > 5.7 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Assessment: The substance or mixture has no acute inhalation toxicity

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

**Skin corrosion/irritation**

|| Not classified based on available information.

**Components:****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  
Result : No skin irritation

**Aluminium:**

Species : Rabbit  
Method : OECD Test Guideline 404  
Result : No skin irritation  
Remarks : Based on data from similar materials

**Zinc oxide:**

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

**Serious eye damage/eye irritation**

|| Not classified based on available information.

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

Species : Rabbit  
Result : No eye irritation

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Remarks : Based on data from similar materials

**Graphite:**

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

**Copper metal powder:**

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

**Aluminium:**

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

**Zinc oxide:**

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

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

Not classified based on available information.

**Respiratory sensitization**

Not classified based on available information.

**Components:****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

**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

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**Aluminium:**

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

**Zinc oxide:**

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

**Germ cell mutagenicity**

**||** Not classified based on available information.

**Components:****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
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**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)

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

**Aluminium:**

Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test  
Method: OECD Test Guideline 476  
Result: negative

Genotoxicity in vivo : Test Type: In vivo micronucleus test  
Species: Rat  
Application Route: Ingestion  
Method: OECD Test Guideline 474  
Result: negative  
Remarks: Based on data from similar materials

**Zinc oxide:**

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

Test Type: In vitro mammalian cell gene mutation test  
Method: OECD Test Guideline 476  
Result: equivocal

Test Type: Chromosome aberration test in vitro  
Result: equivocal

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)  
Species: Rat  
Application Route: inhalation (dust/mist/fume)  
Method: OECD Test Guideline 474  
Result: negative

Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)  
Species: Rat  
Application Route: inhalation (dust/mist/fume)  
Result: positive

Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)  
Species: Mouse  
Application Route: Intraperitoneal injection  
Method: OECD Test Guideline 474  
Result: negative

Germ cell mutagenicity - Assessment : Weight of evidence does not support classification as a germ cell mutagen.

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**Carcinogenicity**

|| Not classified based on available information.

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

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

**Aluminium:**

Species	:	Rat
Application Route	:	inhalation (dust/mist/fume)
Exposure time	:	86 weeks
Result	:	negative

**Zinc oxide:**

Species	:	Mouse
Application Route	:	Ingestion
Exposure time	:	1 Years
Result	:	negative
Remarks	:	Based on data from similar materials

**Reproductive toxicity**

|| Not classified based on available information.

**Components:****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 Method: OECD Test Guideline 416 Result: negative
Effects on fetal development	:	Test Type: Embryo-fetal development

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Species: Rabbit  
Application Route: Ingestion  
Result: negative

**Aluminium:**

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  
Result: negative

**Zinc oxide:**

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: Rat  
Application Route: inhalation (dust/mist/fume)  
Method: OECD Test Guideline 414  
Result: negative  
Remarks: Based on data from similar materials

**STOT-single exposure**

 Not classified based on available information.

**STOT-repeated exposure**

 Not classified based on available information.

**Components:****Copper metal powder:**

Routes of exposure : inhalation (dust/mist/fume)  
Assessment : No significant health effects observed in animals at concentrations of 0.2 mg/l/6h/d or less.

**Zinc oxide:**

Assessment : No significant health effects observed in animals at concentrations of 0.2 mg/l/6h/d or less.

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**Repeated dose toxicity****Components:****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	: $\geq 2 \text{ mg/m}^3$
Application Route	: inhalation (dust/mist/fume)
Exposure time	: 28 Days

**Zinc oxide:**

Species	: Rat, male
NOAEL	: 0.0015 mg/l
Application Route	: inhalation (dust/mist/fume)
Exposure time	: 3 Months
Method	: OECD Test Guideline 413

**Aspiration toxicity**

Not classified based on available information.

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**SECTION 12. ECOLOGICAL INFORMATION****Ecotoxicity****Components:****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/aquatic plants	: 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 Remarks: Based on data from similar materials

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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/aquatic plants : 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: 8.1 µg/l  
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.792 mg/l  
Exposure time: 48 h

Toxicity to algae/aquatic plants : EC50 (Chlorella vulgaris (Fresh water algae)): 0.333 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201

Toxicity to fish (Chronic toxicity) : NOEC (Oncorhynchus mykiss (rainbow trout)): 1 µg/l

**Aluminium:**

Toxicity to fish : NOEC (Salmo trutta (brown trout)): > 80 µg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : NOEC (Daphnia magna (Water flea)): > 0.135 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202



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**Ecotoxicology Assessment**

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

**Zinc oxide:**

Toxicity to fish : LC50: > 0.1 - 1 mg/l  
Exposure time: 96 h  
Remarks: Based on data from similar materials

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 0.136 mg/l  
Exposure time: 72 h  
  
NOEC (Pseudokirchneriella subcapitata (green algae)): > 0.01 - 0.1 mg/l  
Exposure time: 72 h  
Remarks: Based on data from similar materials

Toxicity to fish (Chronic toxicity) : NOEC (Jordanella floridae (flagfish)): > 0.01 - 0.1 mg/l  
Exposure time: 14 Weeks  
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Ceriodaphnia dubia (water flea)): > 0.01 - 0.1 mg/l  
Exposure time: 7 d  
Remarks: Based on data from similar materials

**Persistence and degradability****Components:****Distillates (petroleum), hydrotreated heavy naphthenic:**

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

**Bioaccumulative potential****Components:****Zinc oxide:**

Bioaccumulation : Species: Oncorhynchus mykiss (rainbow trout)  
Bioconcentration factor (BCF): 78 - 2,060

**Mobility in soil**

No data available

**Other adverse effects**

No data available

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**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.  
If not otherwise specified: Dispose of as unused product.

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

UN number : UN 3082

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
(Copper metal powder, Zinc oxide)

II

Class : 9

Packing group : III

Labels : 9

**IATA-DGR**

UN/ID No. : UN 3082

Proper shipping name : Environmentally hazardous substance, liquid, n.o.s.  
(Copper metal powder, Zinc oxide)

II

Class : 9

Packing group : III

Labels : Miscellaneous

Packing instruction (cargo aircraft) : 964

Packing instruction (passenger aircraft) : 964

Environmentally hazardous : yes

**IMDG-Code**

UN number : UN 3082

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
(Copper metal powder, Zinc oxide)

II

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**

UN number : UN 3082

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

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<b>II</b>		(Copper metal powder, Zinc oxide)
Class	:	9
Packing group	:	III
Labels	:	9
ERG Code	:	171
<b>II</b> Marine pollutant	:	yes(Copper metal powder, Zinc oxide)

**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**

<b>Volatile organic compounds (VOC) content</b>	CANADIAN ENVIRONMENTAL PROTECTION ACT, 1999 - Guidelines for VOC in Consumer Products VOC content: 0 %
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**The ingredients of this product are reported in the following inventories:**

DSL	: All chemical substances in this product comply with the CEPA 1999 and NSNR and are on or exempt from listing on the Canadian Domestic Substances List (DSL).
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**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 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
ACGIH / STEL	: Short-term exposure limit
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 BC OEL / STEL	: short-term exposure limit
CA QC OEL / TWAEV	: Time-weighted average exposure value
CA QC OEL / STEV	: Short-term exposure value

AIIC - Australian Inventory of Industrial Chemicals; 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; 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); 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

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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; TECL - Thailand Existing Chemicals Inventory; 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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Date format : mm/dd/yyyy

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

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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