

SAFETY DATA SHEET



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Version 4.0 Revision Date: 03/19/2016 SDS Number: 659480-00005 Date of last issue: 10/14/2015
Date of first issue: 10/22/2014

- ' . &2 " 3+45+26 ' 3 &272 . 1 &2 " 3+

Product name : MOLYKOTE(R) HSC PLUS PASTE
Product code : 00000000002286921, 00000000002286921

! 89 ; ;8<=:>?>@>A : BBCC?>EA+F?-80CA+
Company name of supplier : Dow Corning Corporation
Address : South Saginaw Road
Midland Michigan 48686
PO box : 65091
Telephone : (989) 496-6000
Emergency telephone : 24 Hour Emergency Telephone : (989) 496-5900
CHEMTREC : (800) 424-9300

)?<@GG?9F?F+:A?+@;:=H?+<H?G|<8+89F+>?A=>|<=@9A+@9+:A?
Recommended use : Lubricants and lubricant additives

- ' . &2 " 3+I5+, 1J1) 6 -+26 ' 3 &272 . 1 &2 " 3+

K , --. (8AA);|<8=@9+
Not a hazardous substance or mixture.
K , -(8L?<?<?G?9=A+
Not a hazardous substance or mixture.
"-H?>+H8M8>FA+
None known.

- ' . &2 " 3+N5. " ! / " -2&2 " 30237 ") ! 1&2 " 3+ " 3+23K) ' 62 ' 3 &-+

Substance / Mixture : Mixture
Chemical nature : Inorganic and organic compounds
Mixture

, 8M8>F@ : A+09P>?F0?9=A+

Chemical name	CAS-No.	Concentration (% w/w)
Copper metal powder	7440-50-8	>= 20 - < 30
Paraffin oil	8012-95-1	>= 20 - < 30
Distillates (petroleum), solvent-dewaxed heavy paraffinic	64742-65-0	>= 10 - < 20
Distillates (petroleum), solvent dewaxed light paraffinic; baseoil - unspecified	64742-56-9	>= 10 - < 20
Tin	7440-31-5	>= 10 - < 20
Molybdenum sulfide	1317-33-5	>= 5 - < 10

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- 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.

- ' . & 2 " 3 + R 5 + 7 2) ' S 7 2 K , & 2 3 K + ! ' 1 - 0) ' - +

- Suitable extinguishing media : Water spray, Alcohol-resistant foam, Carbon dioxide (CO2), 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, Nitrogen oxides (NOx), Metal oxides, Sulfur oxides, Oxides of phosphorus
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 : Wear self-contained breathing apparatus for firefighting if necessary. Use personal protective equipment.

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- Personal precautions, protective equipment and emergency procedures : 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.
- Methods and materials for containment and cleaning up : Soak up with inert absorbent material. 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. Clean up remaining materials from spill with suitable absorbent. 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.

- ' . & " 3+U5+, 13 6#23K+136+- & ") 1K '+

- 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. 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

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29P>?F?9-A+X?H+X@>YB?8<?+<@9=>@?B8>8G?=?>A+

Ingredients	CAS-No.	Value

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		TWA (Fumes)	0.2 mg/m ³ (Copper)	ACGIH
		TWA (Dust)	1 mg/m ³ (Copper)	NIOSH REL
		TWA (Mist)	1 mg/m ³ (Copper)	NIOSH REL
		TWA (dusts and mists)	1 mg/m ³ (Copper)	OSHA Z-1
		TWA (Fumes)	0.1 mg/m ³ (Copper)	OSHA Z-1
Paraffin oil	8012-95-1	TWA (Mist)	5 mg/m ³	OSHA Z-1
		TWA (Inhalable fraction)	5 mg/m ³	ACGIH
		TWA (Mist)	5 mg/m ³	NIOSH REL
		ST (Mist)	10 mg/m ³	NIOSH REL
Distillates (petroleum), solvent-dewaxed heavy paraffinic	64742-65-0	TWA (Mist)	5 mg/m ³	OSHA Z-1
		TWA (Inhalable fraction)	5 mg/m ³	ACGIH
		TWA (Mist)	5 mg/m ³	NIOSH REL
		ST (Mist)	10 mg/m ³	NIOSH REL
Distillates (petroleum), solvent dewaxed light paraffinic; baseoil - unspecified	64742-56-9	TWA (Mist)	5 mg/m ³	OSHA Z-1
		TWA (Inhalable fraction)	5 mg/m ³	ACGIH
		TWA (Mist)	5 mg/m ³	NIOSH REL
		ST (Mist)	10 mg/m ³	NIOSH REL
Tin	7440-31-5	TWA	2 mg/m ³ (Tin)	NIOSH REL
		TWA	2 mg/m ³ (Tin)	OSHA Z-1
		TWA	2 mg/m ³	ACGIH
Molybdenum sulfide	1317-33-5	TWA (total dust)	15 mg/m ³ (Molybdenum)	OSHA Z-1
		TWA (Inhalable fraction)	10 mg/m ³ (Molybdenum)	ACGIH
		TWA (Respirable fraction)	3 mg/m ³ (Molybdenum)	ACGIH

' 9P!9??>!9P+G?8A:>?A+ : Ensure adequate ventilation, especially in confined areas. 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/m³ - total dust, 5 mg/m³ - respirable fraction; and ACGIH TWA for Particles (insoluble or poorly soluble) Not Otherwise Specified of 3 mg/m³ - respirable particles, 10 mg/m³ - inhalable particles.

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Respiratory protection : General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

Hand protection

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

Eye protection : Wear the following personal protective equipment:
Safety glasses

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

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.
These precautions are for room temperature handling. Use at elevated temperature or aerosol/spray applications may require added precautions.

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Appearance : paste

Color : bronze

Odor : none

Odor Threshold : No data available

pH : Not applicable

Melting point/freezing point : No data available

Initial boiling point and boiling range : Not applicable

Flash point : Not applicable

Evaporation rate : Not applicable

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

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Upper explosion limit : No data available

Lower explosion limit : No data available

Vapor pressure : Not applicable

Relative vapor density : No data available

Relative density : 1.30

Solubility(ies)
Water solubility : No data available

Partition coefficient: n-octanol/water : No data available

Autoignition temperature : No data available

Decomposition temperature : No data available

Viscosity
Viscosity, dynamic : Not applicable

Explosive properties : Not explosive

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

Molecular weight : No data available

- ' . & 2 " 3+4]5+ - & 1 ^ ? # 2 & \$ + 1 3 6 +) ' 1 . & 2 _ ? & \$ +

Reactivity : Not classified as a reactivity hazard.

Chemical stability : Stable under normal conditions.

Possibility of hazardous reactions : Can react with strong oxidizing agents.
When heated to temperatures above 150 °C (300 °F) in the presence of air, product can form formaldehyde vapors. Safe handling conditions may be maintained by keeping vapor concentrations within the occupational exposure limit for formaldehyde.
Formaldehyde may cause cancer. It is also toxic by inhalation, skin absorption and ingestion, corrosive to skin and eyes, and may cause skin sensitization and respiratory irritation. See OSHA formaldehyde standard, 29 CFR 1910.1048

Conditions to avoid : None known.

Incompatible materials : Oxidizing agents

Hazardous decomposition products : No hazardous decomposition products are known.

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29;@>G8=0@9+@9+00Y?c`+>@ :=?A+@;+?aB@A:>?+

- Skin contact
Ingestion
Eye contact

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Not classified based on available information.

?9P>?F0?9=Ab+

. @BB?>+G ?=80B@XF?>b+

- 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

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- Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg
Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

60A=0008=?A+(B?=>@0? : G *t+A@0Z?9=SF?X 8a?F+H?8Z` +B8>8;;090<b+

- 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

60A=0008=?A+(B?=>@0? : G *t+A@0Z?9=+F?X 8a?F+00PH=+B8>8;;090<d+L8A?@00+S+ : 9AB?<0;0?Fb+

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Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg
 Method: OECD Test Guideline 401

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

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

Acute inhalation toxicity : LC50 (Rat): > 4.75 mg/l
 Exposure time: 4 h
 Test atmosphere: dust/mist
 Method: OECD Test Guideline 403

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

! @C` LF?9 : G+A : C;Df?b+

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
 Method: OECD Test Guideline 401
 Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat): > 2.82 mg/l
 Exposure time: 4 h
 Test atmosphere: dust/mist

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

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Not classified based on available information.

29P>?F!9=Ab+

. @BB?>+G?=8C+B@XF?>b+

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

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/ 8>8;;D9+@DCb+

||

Species: Rabbit
Result: No skin irritation

6DA=0008=?A+(B?=>@C? : G*c+A@CZ?9=SF?X8a?F+H?8Z` +B8>8;;D9D<b+

||

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

6DA=0008=?A+(B?=>@C? : G*c+A@CZ?9=F?X8a?F+CPH+=B8>8;;D9D<d+L8A?@DC+S+ : 9AB?<D;D?Fb+

||

Species: Rabbit
Result: No skin irritation

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||

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

! @C` LF?9 : G+A : C;DF?b+

||

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

- ?>D@ : A+?` ?+F8G8P?0?` ?+D>>D=8=D@9+

Not classified based on available information.

29P>?F0?9=Ab+

. @BB?>+G?=8C+B@XF?b+

||

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

/ 8>8;;D9+@DCb+

||

Species: Rabbit
Result: No eye irritation

6DA=0008=?A+(B?=>@C? : G*c+A@CZ?9=SF?X8a?F+H?8Z` +B8>8;;D9D<b+

||

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

6DA=0008=?A+(B?=>@C? : G*c+A@CZ?9=F?X8a?F+CPH+=B8>8;;D9D<d+L8A?@DC+S+ : 9AB?<D;D?Fb+

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

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Eye Irritation

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

Eye Irritation

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

Not classified based on available information.

Not classified based on available information.

Not classified based on available information.

Not classified based on available information.

Not classified based on available information.

Maximization Test

Test Type: Maximization Test

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

Not classified based on available information.

Buehler Test

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

Not classified based on available information.

Buehler Test

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

Eye Irritation

Test Type: Maximization Test
Routes of exposure: Skin contact
Species: Guinea pig
Result: negative

Not classified based on available information.

Not classified based on available information.

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

6DA=0008=?A+(B?=>@C? : G*c+A@CZ?9=SF?X8a?F+H?8Z` +B8>8;;D9D<cb+

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

6DA=0008=?A+(B?=>@C? : G*c+A@CZ?9=+F?X8a?F+D9D<d+L8A?@DC+S+ : 9AB?<D;D?Fb+

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

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

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

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. 8><D9@P?9D<D= ` +
Not classified based on available information.

29P>?F?9=Ab+

6DA=008=?A+(B?=>@C? : G*c;A@CZ?9=5F?X 8a?F+H?8Z` +B8>8;;D9D<cb+

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

6DA=008=?A+(B?=>@C? : G*c;A@CZ?9=F?X 8a?F+D)PH=B8>8;;D9D<d+L8A?@DC+S+ : 9AB?<D;D?Fb+

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

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Species: Rat
Application Route: Ingestion
Exposure time: 115 weeks
Result: negative
Remarks: Based on data from similar materials

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Species: Rat
Application Route: Ingestion
Exposure time: 232 days
Result: negative

21) . No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

" - , 1 No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

3&/ No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

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Not classified based on available information.

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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
Species: Rabbit
Application Route: Ingestion
Result: negative

6DA=0008=?A+(B?=>@C? : G*c+A@CZ?9=SF?X8a?F+H?8Z` +B8>8;;D9D<cb+

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

6DA=0008=?A+(B?=>@C? : G*c+A@CZ?9=FP?X8a?F+D9D<d+L8A?@DC+S+ : 9AB?<D;D?Fb+

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

&D9b+

Effects on fertility : Test Type: Reproduction/Developmental toxicity screening test
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 421
Result: negative

Effects on fetal development : Test Type: Reproduction/Developmental toxicity screening test
Species: Rat
Application Route: Ingestion

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Method: OECD Test Guideline 421
Result: negative

- &" &\$A09Pc?+?aB@A :>?+
Not classified based on available information.

- &" &\$>?B?8=?F+?aB@A :>?+
Not classified based on available information.

29P>?F0?9=Ab+

. @BB?>+G?-8c+B@XF?>b+

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.

) ?B?8=?F+F@A?+=@al<0= `+`

29P>?F0?9=Ab+

. @BB?>+G?-8c+B@XF?>b+

Species: Rat
NOAEL: >= 2 mg/m³
Application Route: inhalation (dust/mist/fume)
Exposure time: 28 Days

/ 8>8;;D9+@Dcb+

Species: Rat, female
LOAEL: 161 mg/kg
Application Route: Ingestion
Exposure time: 90 Days

6DA=0008=?A+(B?=>@C? : G*c+A@CZ?9=-SF?X8a?F+H?8Z` +B8>8;;D9D<cb+

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/m³
Application Route: inhalation (dust/mist/fume)
Exposure time: 4 Weeks
Remarks: Based on data from similar materials

6DA=0008=?A+(B?=>@C? : G*c+A@CZ?9=-F?X8a?F+CDPH+=B8>8;;D9D<d+L8A?@DC+S+ : 9AB?<D;D?Fb+

Species: Rat
NOAEL: 1,000 mg/kg
Application Route: Skin contact
Exposure time: 4 Weeks
Method: OECD Test Guideline 410

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Remarks: Based on data from similar materials
 Species: Rat
 NOAEL: > 980 mg/m³
 Application Route: inhalation (dust/mist/fume)
 Exposure time: 4 Weeks
 Remarks: Based on data from similar materials

89b+
 Species: Rat
 NOAEL: > 1,000 mg/kg
 Application Route: Ingestion
 Exposure time: 28 Days
 Method: OECD Test Guideline 407

1ABD>8=D@9+=@aD<D= ` +
 Not classified based on available information.

29P>?FD?9=Ab+

/ 8>8;;D9+@Dcb+

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

6DA=DC8=?A+(B?=>@C? : G*c+A@CZ?9=SF?X 8a?F+H?8Z` +B8>8;;D9D<cb+

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

- ' . &2 " 3+4I5+ ' . " # " K2 . 1#+237 ") ! 1&2 " 3+

' <@=@aD<D= ` +

29P>?FD?9=Ab+

. @BB?>+G?-8C+B@XF?>b+

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	: EC50 (Chlorella vulgaris (Fresh water algae)): 0.333 mg/l Exposure time: 72 h Method: OECD Test Guideline 201
M-Factor (Acute aquatic toxicity)	: 100
Toxicity to fish (Chronic toxicity)	: NOEC (Oncorhynchus mykiss (rainbow trout)): 1 µg/l
M-Factor (Chronic aquatic	: 100

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Toxicity)

/8>8;;D9+@Dcb+

- Toxicity to fish : LL50 (Scophthalmus maximus (turbot)): > 1,028 mg/l
Exposure time: 96 h
Test substance: Water Accommodated Fraction
Remarks: Based on data from similar materials
- Toxicity to daphnia and other aquatic invertebrates : EL50 (Acartia tonsa): > 3,193 mg/l
Exposure time: 48 h
Test substance: Water Accommodated Fraction
Remarks: Based on data from similar materials
- Toxicity to algae : EL50 (Skeletonema costatum (marine diatom)): > 3,200 mg/l
Exposure time: 72 h
Test substance: Water Accommodated Fraction
Remarks: Based on data from similar materials
- NOELR (Skeletonema costatum (marine diatom)): 993 mg/l
Exposure time: 72 h
Test substance: Water Accommodated Fraction
Remarks: Based on data from similar materials

6DA=00C8=?A+(B?=>@C? : G*c+A@CZ?9=SF?X8a?F+H?8Z` +B8>8;;D9D<cb+

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

6DA=00C8=?A+(B?=>@C? : G*c+A@CZ?9=FP?X8a?F+DPH=+B8>8;;D9D<d+L8A?@DC+S+ : 9AB?<D;D?Fb+

- Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): > 100 mg/l
Exposure time: 96 h

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

&D9b+

Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): > 12.4 µg/l Exposure time: 96 h Remarks: No toxicity at the limit of solubility. Based on data from similar materials
Toxicity to algae	:	EC50 (Pseudokirchneriella subcapitata (green algae)): > 19.2 µg/l Exposure time: 72 h Method: OECD Test Guideline 201 Remarks: No toxicity at the limit of solubility. Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Ceriodaphnia dubia (water flea)): 100 µg/l Exposure time: 7 d Remarks: No toxicity at the limit of solubility. Based on data from similar materials
Toxicity to bacteria	:	EC50: > 511 mg/l Exposure time: 3 h Method: OECD Test Guideline 209 Remarks: Based on data from similar materials

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Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): 644.2 mg/l Exposure time: 96 h Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 130.9 mg/l Exposure time: 48 h

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Table with 2 columns: Test Name and Results. Rows include Toxicity to algae, Toxicity to fish (Chronic toxicity), Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity), and Toxicity to bacteria. Each row contains detailed test parameters and results.

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29P>?FI?9=Ab+

/ 8>8;;D9+@DCb+

Table with 2 columns: Test Name and Results. Row: Biodegradability. Result: Readily biodegradable. Biodegradation: 82 %. Exposure time: 24 d. Method: OECD Test Guideline 301F. Remarks: Based on data from similar materials.

6DA=DC8=?A+(B?=>@C? : G*c+A@CZ?9=Sf?X 8a?F+H?8Z` +B8>8;;D9D<b+

Table with 2 columns: Test Name and Results. Row: Biodegradability. Result: Not readily biodegradable. Biodegradation: 2 - 8 %. Exposure time: 28 d. Method: OECD Test Guideline 301B.

6DA=DC8=?A+(B?=>@C? : G*c+A@CZ?9=+F?X 8a?F+CDPH=+B8>8;;D9D<d+L8A?@DC+S+ : 9AB?<D;D?Fb+

Table with 2 columns: Test Name and Results. Row: Biodegradability. Result: Not readily biodegradable. Biodegradation: 2 - 4 %. Exposure time: 28 d. Method: OECD Test Guideline 301B.

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No data available

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No data available

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No data available

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6DAB@A8C+G?-H@FA+

Resource Conservation and Recovery Act (RCRA) : This product has been evaluated for RCRA characteristics and does not meet the criteria of hazardous waste if discarded in its purchased form.

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.

- ' . &2 " 3+4Q5+&) 13 - / ") &+237 ") ! 1&2 " 3+

29=?>98=D@98C+) ?P:(8=D@9+

03)&6K+

UN number : UN 3077
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper metal powder)

Class : 9
Packing group : III
Labels : 9

21&1S6K)+

UN/ID No. : UN 3077
Proper shipping name : Environmentally hazardous substance, solid, n.o.s. (Copper metal powder)

Class : 9
Packing group : III
Labels : Miscellaneous
Packing instruction (cargo aircraft) : 956
Packing instruction (passenger aircraft) : 956

2! 6K\$. @F?+

UN number : UN 3077
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper metal powder)

Class : 9
Packing group : III
Labels : 9
EmS Code : F-A, S-F
Marine pollutant : yes

&>89AB@>=+D9+L : CY+8<<@>F)9P+=@+199?a+22+@;+ ! 1) / " #+UN0UV+89F+=H?+2^ . +. @F?+

Not applicable for product as supplied.

6@G?A=]<+>?P:(8=D@9+

Q\+. 7)+

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UN/ID/NA number : UN 3077
 Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S. (Copper metal powder)
 Class : 9
 Packing group : III
 Labels : CLASS 9
 ERG Code : 171
 Marine pollutant : yes (Copper metal powder)
 Remarks : Above applies only to containers over 119 gallons or 450 liters.

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 . ') . # 1+) ?B@>=8L(?+e : 89=0= ` +

Ingredients	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Copper metal powder	7440-50-8	5000	22727

- 1) 1+N]Q+ ' a=>?G?c`+, 8M8>F@ : A+ - : LA-89<?A+) ?B@>=8L(?+e : 89=0= ` +

This material does not contain any components with a section 304 EHS RQ.

- 1) 1+N440N4I+, 8M8>FA+ : No SARA Hazards

- 1) 1+N]I+ : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

- 1) 1+N4N+ : The following components are subject to reporting levels established by SARA Title III, Section 313:

Copper metal powder 7440-50-8 22 %

0 - + - -8=?+) ?P : (8=0@9A+

/ ?99A` (Z8908+) DPH=\$=@\$%9@X+

Copper metal powder	7440-50-8
Paraffin oil	8012-95-1
Distillates (petroleum), solvent dewaxed light paraffinic; baseoil - unspecified	64742-56-9
Distillates (petroleum), solvent-dewaxed heavy paraffinic	64742-65-0
Tricalcium Phosphate, Hydrated	1306-06-5
Tin	7440-31-5
Polybutene	9003-29-6
Molybdenum sulfide	1317-33-5

. 80; @>908+ / >@B5+TR+ This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

. 80; @>908+ #0A=@;+, 8M8>F@ : A+ - : LA-89<?A+

Copper metal powder	7440-50-8
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	Paraffin oil	8012-95-1
	Distillates (petroleum), solvent dewaxed light paraffinic; baseoil - unspecified	64742-56-9
	Distillates (petroleum), solvent-dewaxed heavy paraffinic	64742-65-0
	Tin	7440-31-5
	Molybdenum sulfide	1317-33-5

. 80; @>908+ / ?>GDAALC?+ ' aB@A :>?+#DGA=A+; @>+ . H?GD<8C+ . @9=8GD989=A+

	Copper metal powder	7440-50-8
	Paraffin oil	8012-95-1
	Distillates (petroleum), solvent dewaxed light paraffinic; baseoil - unspecified	64742-56-9
	Distillates (petroleum), solvent-dewaxed heavy paraffinic	64742-65-0
	Tin	7440-31-5
	Molybdenum sulfide	1317-33-5

&H?>9P>?FD?9=A+@; +=HDA+B>@F : <+8>?+>?B@>=?F+D9+=H?+; @CC@XD9P+D9Z?9=@>D?Ab+

- KECI All ingredients listed, exempt or notified.
- TSCA All chemical substances in this material are included on or exempted from listing on the TSCA Inventory of Chemical Substances.
- 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).
- REACH All ingredients (pre-)registered or exempt.
- AICS All ingredients listed or exempt.
- IECSC All ingredients listed or exempt.
- PICCS All ingredients listed or exempt.
- NZIoC All ingredients listed or exempt.

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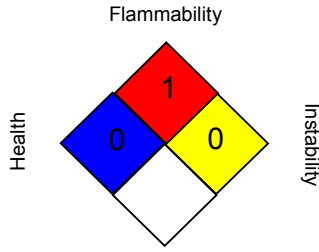
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- ' . & 2 " 3+4T5+ " & , ') +237 ") ! 1&2 " 3+

7 : >=H?>+09;@>G8=0@9+

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 37 / 1b+



, ! 2 - +222b

HEALTH]†
FLAMMABILITY	4
/ , \$ -2 . 1#+, 1J1) 6]

0 = not significant, 1 =Slight,
 2 = Moderate, 3 = High
 4 = Extreme, * = Chronic

7 : 00+=?a=+@;+@=H?>+8LL>?Z08=0@9A+

- ACGIH : USA. ACGIH Threshold Limit Values (TLV)
- NIOSH REL : USA. NIOSH Recommended Exposure Limits
- OSHA Z-1 : USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
- ACGIH / TWA : 8-hour, time-weighted average
- NIOSH REL / TWA : Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
- NIOSH REL / ST : STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday
- OSHA Z-1 / TWA : 8-hour time weighted average

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; 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; HMIS - Hazardous Materials Identification System; 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; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development;

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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; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance 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

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/>

Revision Date : 03/19/2016

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.

US / Z8