



Revision Number: 002.3

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1. PRODUCT AND COMPANY IDENTIFICATION

Product name: C5-A® Copper Based Anti-Seize Lubricant
Product type: Lubricant
Company address: Henkel Corporation
 One Henkel Way
 Rocky Hill, Connecticut 06067

IDH number: 234209
Item number: 51011
Region: United States
Contact information:
 Telephone: 860.571.5100
 Emergency telephone: 860.571.5100
 Internet: www.henkelna.com

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

| | | | |
|------------------------|--------|-----------------------------|--------------------|
| Physical state: | Paste | HEALTH: | *1 |
| Color: | copper | FLAMMABILITY: | 1 |
| Odor: | Mild | PHYSICAL HAZARD: | 0 |
| | | Personal Protection: | See MSDS Section 8 |

CAUTION: MAY CAUSE EYE AND SKIN IRRITATION.

Relevant routes of exposure: Skin, Eyes

Potential Health Effects

Inhalation: This product has low volatility and is not expected to cause respiratory tract irritation during normal conditions of use. Inhalation of copper fumes may result in metal fume fever. Symptoms include metallic taste, discoloration of skin or hair.

Skin contact: Prolonged or repeated contact may cause irritation.

Eye contact: Contact with eyes will cause irritation.

Ingestion: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Principal hazard of ingestion is aspiration into the lungs and subsequent pneumonitis.

Existing conditions aggravated by exposure: Eye, skin, and respiratory disorders.

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

| Hazardous components | CAS NUMBER | % |
|--|------------|---------|
| Distillates (petroleum), hydrotreated heavy naphthenic | 64742-52-5 | 30 - 60 |
| Calcium dihydroxide | 1305-62-0 | 10 - 30 |
| Mineral oil light naphthenic hydrotreat. <3% DMSO | 64742-53-6 | 10 - 30 |
| Copper | 7440-50-8 | 10 - 30 |
| Graphite | 7782-42-5 | 5 - 10 |
| Quartz (SiO ₂) | 14808-60-7 | 0.1 - 1 |

4. FIRST AID MEASURES

Inhalation: Move to fresh air. If symptoms persist, seek medical advice.

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|----------------------|--|
| Skin contact: | Wash with soap and water. If symptoms develop and persist, get medical attention. |
| Eye contact: | Get medical attention. Immediately flush eyes with plenty of water for at least 15 minutes. |
| Ingestion: | Aspiration may cause pulmonary edema and pneumonitis. Do not induce vomiting. Get medical attention. |

5. FIRE FIGHTING MEASURES

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|--|---|
| Flash point: | > 93 °C (> 199.4 °F) |
| Autoignition temperature: | Not determined |
| Flammable/Explosive limits - lower: | Not determined |
| Flammable/Explosive limits - upper: | Not determined |
| Extinguishing media: | Carbon dioxide. Dry chemical. Foam. Water spray or fog. |
| Special firefighting procedures: | None |
| Unusual fire or explosion hazards: | None |
| Hazardous combustion products: | Oxides of carbon. |

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

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|-----------------------------------|--|
| Environmental precautions: | Do not allow material to contaminate ground water system. |
| Clean-up methods: | Follow all local, state, federal and provincial regulations for disposal. Scrape up as much material as possible. Clean residue with soap and water. |

7. HANDLING AND STORAGE

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|------------------|--|
| Handling: | Wash thoroughly after handling. Keep container closed. Avoid contact with eyes, skin and clothing. |
| Storage: | Keep in a cool, well ventilated area. |

For information on product shelf life contact Henkel Customer Service at (800) 243-4874.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

| Hazardous components | ACGIH TLV | OSHA PEL | AIHA WEEL | OTHER |
|--|--|--|-----------|-------|
| Distillates (petroleum), hydrotreated heavy naphthenic | 5 mg/m3 TWA mist 10 mg/m3 STEL mist | 5 mg/m3 TWA mist | None | None |
| Calcium dihydroxide | 5 mg/m3 TWA | 5 mg/m3 TWA Respirable fraction. 15 mg/m3 TWA Total dust. | None | None |
| Mineral oil light naphthenic hydrotreat. <3% DMSO | 5 mg/m3 TWA Mist. 10 mg/m3 STEL Mist. | 500 ppm (2,000 mg/m3) TWA | None | None |
| Copper | 1 mg/m3 TWA (as Cu) Dust and mist. 0.2 mg/m3 TWA Fume. | 1 mg/m3 TWA (as Cu) Dust and mist. 0.1 mg/m3 TWA (as Cu) Fume. | None | None |
| Graphite | 2 mg/m3 TWA Respirable fraction. | 5 mg/m3 TWA Respirable fraction. 15 mg/m3 TWA Total dust. 15 MPPCF TWA | None | None |
| Quartz (SiO ₂) | 0.025 mg/m3 TWA Respirable fraction. | 2.4 MPPCF TWA Respirable. 0.1 mg/m3 TWA Respirable. 0.3 mg/m3 TWA Total dust. | None | None |

Engineering controls:

Use only with adequate ventilation. Local exhaust ventilation is recommended when general ventilation is not sufficient to control airborne contamination below occupational exposure limits.

Respiratory protection:

Use NIOSH approved respirator if there is potential to exceed exposure limit(s). Observe OSHA regulations for respiratory use (29 CFR 1910.134).

Eye/face protection:

Goggles. Safety glasses with side-shields.

Skin protection:

Cover as much of the exposed skin area as possible with appropriate clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

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|--|----------------------|
| Physical state: | Paste |
| Color: | copper |
| Odor: | Mild |
| Odor threshold: | Not available |
| pH: | Not applicable |
| Vapor pressure: | < 5.0 mm hg |
| Boiling point/range: | > 260 °C (> 500°F) |
| Melting point/ range: | Not available |
| Specific gravity: | 1.30 |
| Vapor density: | Heavier than air. |
| Flash point: | > 93 °C (> 199.4 °F) |
| Flammable/Explosive limits - lower: | Not determined |
| Flammable/Explosive limits - upper: | Not determined |
| Autoignition temperature: | Not determined |
| Evaporation rate: | Slower than ether. |
| Solubility in water: | Insoluble |
| Partition coefficient (n-octanol/water): | Not determined |
| VOC content: | Essentially Zero |

10. STABILITY AND REACTIVITY

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| Stability: | Stable at normal conditions. |
| Hazardous reactions: | Will not occur. |
| Hazardous decomposition products: | Hydrocarbons. Oxides of carbon. |
| Incompatible materials: | Strong acids and strong bases. Oxidizing agents. |
| Conditions to avoid: | Prolonged exposure to heat. |

11. TOXICOLOGICAL INFORMATION

| Hazardous components | NTP Carcinogen | IARC Carcinogen | OSHA Carcinogen (Specifically Regulated) |
|--|-------------------|-----------------|---|
| Distillates (petroleum), hydrotreated heavy naphthenic | No | No | No |
| Calcium dihydroxide | No | No | No |
| Mineral oil light naphthenic hydrotreat. <3% DMSO | No | No | No |
| Copper | No | No | No |
| Graphite | No | No | No |
| Quartz (SiO ₂) | Known carcinogen. | Group 1 | No |

| Hazardous components | Health Effects/Target Organs |
|--|--|
| Distillates (petroleum), hydrotreated heavy naphthenic | Irritant |
| Calcium dihydroxide | Irritant, Corrosive |
| Mineral oil light naphthenic hydrotreat. <3% DMSO | Irritant |
| Copper | Allergen, Blood, Central nervous system, Developmental, Gastrointestinal, Immune system, Irritant, Kidney, Liver, Mutagen, Sensory, Skin |
| Graphite | Lung |
| Quartz (SiO ₂) | Immune system, Lung, Some evidence of carcinogenicity |

12. ECOLOGICAL INFORMATION

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|--------------------------------|---------------|
| Ecological information: | Not available |
|--------------------------------|---------------|

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

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| Recommended method of disposal: | Follow all local, state, federal and provincial regulations for disposal. |
| Hazardous waste number: | Not a RCRA hazardous waste. |

14. TRANSPORT INFORMATION

U.S. Department of Transportation Ground (49 CFR)

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|----------------------------------|---|
| Proper shipping name: | Environmentally hazardous substances, liquid, n.o.s. (Copper) |
| Hazard class or division: | 9 |
| Identification number: | UN 3082 |
| Packing group: | III |
| Marine pollutant: | Copper |
| DOT Reportable quantity: | Copper |

International Air Transportation (ICAO/IATA)

| | |
|----------------------------------|---------------|
| Proper shipping name: | Not regulated |
| Hazard class or division: | None |
| Identification number: | None |
| Packing group: | None |

Water Transportation (IMO/IMDG)

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|---------------------------|--|
| Proper shipping name: | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Copper) |
| Hazard class or division: | 9 |
| Identification number: | UN 3082 |
| Packing group: | III |
| Marine pollutant: | Copper |

15. REGULATORY INFORMATION**United States Regulatory Information**

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|--|---|
| TSCA 8 (b) Inventory Status: | All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory. |
| TSCA 12(b) Export Notification: | None above reporting de minimus |
| CERCLA/SARA Section 302 EHS: | None above reporting de minimus |
| CERCLA/SARA Section 311/312: | Immediate Health |
| CERCLA/SARA 313: | This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372). Copper (CAS# 7440-50-8). |
| California Proposition 65: | No California Proposition 65 listed chemicals are known to be present. |

Canada Regulatory Information

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|-----------------------------|---|
| CEPA DSL/NDL Status: | All components are listed on or are exempt from listing on the Canadian Domestic Substances List. |
| WHMIS hazard class: | D.2.A, D.2.B |

16. OTHER INFORMATION

This material safety data sheet contains changes from the previous version in sections: New Material Safety Data Sheet format.

Prepared by: C.J. Michaels, Manager, Regulatory Affairs

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