MATERIAL SAFETY DATA SHEET

Prepared to OSHA, ACC, ANSI, WHMIS, NOHSC & 2001/58 EC Standards | MSDS Revision: 1.0 | MSDS Revision Date: 12/01/2006

1. PRODUCT IDENTIFICATION

1.1	Product Name:	**DeoxIT® GREASE TYPE L260Cp (Copper Particles)**
1.2	Chemical Name:	See ingredients listed in section 3
1.3	Synonyms:	DeoxIT® Grease Type L260Cp, (Part No. L260Cp)
1.4	Trade Names:	DeoxIT® Grease Type L260Cp
1.5	Product Use:	Lubricant
1.6	Manufacturer's Name:	CAIG Laboratories, Inc.
1.7	Manufacturer's Address:	12200 Thatcher Court, Poway, CA 92064-6876
1.8	Business Phone:	+1 (800)-224-4123
1.9	Emergency Phone:	**CHEMTREC +1 (703) 527-3887/+1 (800) 424-9300**
1.10	Other Product Names:	Part No. L260-C12C Part No. L260-C1 Part No. L260-C8 Part No. L260-C35

CHEMICAL RESPONSE CARD:	03
RESPONSE TEAM PPE:	
WHMIS:	
HEALTH:	1
FLAMMABILITY:	0
REACTIVITY:	0
PERSONAL PROTECTION:	B

2. HAZARD IDENTIFICATION

2.1 Hazard Identification:

This product is classified as a hazardous substance but not as dangerous goods according to the classification criteria of NOHSC and ADG Code (Australia). DeoxIT® Grease Type L260Cp is non-volatile, non-hazardous and non-flammable. Not expected to cause prolonged or significant eye or skin irritation. High-Pressure Equipment Information: Accidental high-velocity injection under the skin of materials of this type may result in serious injury. Seek immediate medical attention should an accident of this type occur. Contains petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommend mineral oil mist exposure limit. Heating can generate vapors that may cause respiratory irritation, nausea and headaches, irritating to the upper respiratory tract.

2.2 Routes of Entry:	Inhalation:	YES	Absorption:	YES	Ingestion:	NO

2.3 Effects of Exposure:

EYES: Mild to moderate irritation. Not expected to cause prolonged or significant eye irritation.
SKIN: Prolonged or repeated contact may cause contact dermatitis (localized redness or rash). Contact with the skin is not expected to cause prolonged or significant irritation. Not expected to be harmful the internal organs if absorbed through the skin.
INGESTION: Not expected to be harmful if ingested. May cause gastrointestinal irritation & discomfort.
INHALATION: Respiratory irritation, nausea and headaches.

2.4 Symptoms of Overexposure:

EYES: Mild irritation, redness, and watering.
SKIN: Contact dermatitis, characterized by localized red or puffy dry skin and itching.
INGESTION: Not expected to be harmful if ingested. May cause nausea, vomiting, and diarrhea.
INHALATION: Mouth, nose, and throat irritation, dizziness, nausea, light-headedness.

2.5 Acute Health Effects:

EYES: Mild to moderate irritation. **SKIN:** Repeated exposure at site of contact may cause contact dermatitis (localized redness or rash). Contact with the
INGESTION: Not expected to be harmful if ingested. May cause gastrointestinal irritation and central nervous system depression.
INHALATION: Central nervous system depressant. Irritating to the upper respiratory tract. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit.

2.6 Chronic Health Effects:

None reported by the manufacturer.

2.7 Target Organs:

Eyes, Skin

3. COMPOSITION & INGREDIENT INFORMATION

CHEMICAL NAME(S)	CAS No.	RTECS No.	EINECS No.	%	EXPOSURE LIMITS IN AIR (mg/m³) ACGIH - ppm TLV	ACGIH - ppm STEL	OSHA - ppm PEL	OSHA - ppm STEL	OSHA - ppm IDLH	OTHER
LITHIUM GREASE LUBRICATING BASE OIL CONTAINS ONE OR MORE OF THE FOLLOWING:				≤ 99.0						
DISTILLATES (PETROLEUM), SOLVENT-DEWAXED HEAVY PARAFFINIC	64742-65-0	SE7500000	265-169-7	NA	5	10	5	10	NA	RESPIRABLE OIL MIST
RESIDUAL OILS (PETROLIUM) SOLVENT-REFINED	64742-01-4	NA	265-101-6	NA	5-	10	5	10	NA	RESPIRABLE OIL MIST
DISTILLATES (PETROLEUM), SOLVENT-DEWAXED HEAVY PARAFFINIC	64741-88-4		265-090-8	NA	5	10	5	10		RESPIRABLE OIL MIST
ZINC ALKYLDITHIOPHOSPHATE	68649-42-3	NA	272-028-3	NA	NA	NA	NA	NA	NA	
COPPER	7440-50-8	GL5325000	231-159-6	≤ 8.4	0.2	NA	0.1	NA	100	FUME
DeoxIT® PROPRIETARY MIX	TRADE SECRET	UNK	UNK	NA	NE	NE	NE	NE	NE	

4. FIRST AID MEASURES

4.1 First Aid:

EYES: As a precaution remove contact lenses if worn and flush eyes thoroughly with copious amounts of water for at least 15 minutes, holding eyelid(s) open to ensure complete flushing. If irritation persists, seek immediate medical attention.

SKIN: Remove contaminated clothing. Use a waterless hand cleaner, mineral oil, or petroleum jelly to remove the material. Then wash the skin with soap and water If irritation persists, seek prompt medical attention. Do not wear contaminated clothing until after it has been properly cleaned.

INGESTION: Do not induce vomiting! As a precaution give the person a glass of water or mil to drink and get medial attention immediately.

INHALATION: Vapor inhalation under ambient conditions is normally not a problem. If overcome by vapor of hot product immediately remove victim to fresh air at once. If breathing is difficult, administer supplemental oxygen and seek immediate medical attention. If breathing stops, perform artificial respiration.

4.2 Medical Conditions Aggravated by Exposure:

None reported by the manufacturer.

HEALTH	1
FLAMMABILITY	0
REACTIVITY	0
PROTECTIVE EQUIPMENT	B

EYES | SKIN

NA = Not Available; ND = Not Determined; NE = Not Established; C = Ceiling Limit; See Section 16 for Additional Definitions of Terms Used

NOTE: all WHMIS required information is included. It is located in appropriate sections based on the ANSI Z400.1-2004 format.

5. FIREFIGHTING MEASURES

5.1	Flashpoint & Method: **> 244 °C (471 °F) COC (Cleveland Open Cup)**				
5.2	Autoignition Temperature: **NA**				
5.3	Flammability Limits:	Lower Explosive Limit (LEL):	**ND**	Upper Explosive Limit (UEL):	**ND**
5.4	Fire & Explosion Hazards: **Carbon dioxide, carbon monoxide, hydrocarbons.**				
5.5	Extinguishing Methods: **CO_2, Alcohol foam, Dry Chemical, Water Fog**				
5.6	Firefighting Procedures: **Wear NIOSH/MSHA approved self-contained breathing apparatus and protective clothing. Use a water spray to cool containers involved in fire. Do not use direct water stream. Container storage areas exposed to direct flame contact should be cooled with large quantities of water as needed to prevent weakening of container structure. Keep containers cool until well after the fire is out to prevent rupture. Prevent runoff from fire control or dilution from entering sewers, drains, drinking water supply, or any natural waterway.**				

6. ACCIDENTAL RELEASE MEASURES

6.1	Spills: **Secure spill area and deny entry to all unprotected individuals. Individuals involved in the cleanup should wear appropriate personal protective equipment. Area may become slippery. Absorb product onto porous material, such as sand, clay, diatomaceous earth or commercial absorbent material. Place into leak-proof, approved containers. If necessary, cover all drains and dike well ahead of the spill to prevent runoff into sewers, drains, and all waterways. Contact appropriate local or provincial authorities for assistance and/or reporting requirements.**

7. HANDLING & STORAGE INFORMATION

7.1	Work & Hygiene Practices: **Wash hands thoroughly after using this product and before eating, drinking, or smoking. Remove soiled clothing to prevent prolonged skin contact.**
7.2	Storage & Handling: **Store at temperatures between 59 °F and 95 °F (15 °C and 35 °C) in a dry, well-ventilated location. Keep away from heat, sparks, open flame, and other sources of ignition. Container is not designed to contain pressure. Don not use pressure to empty container or it may rupture with explosive force. Normal shelf-life: 2-3 years.**
7.3	Special Precautions: **Empty containers may contain product residues. Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.**

8. EXPOSURE CONTROLS & PERSONAL PROTECTION

8.1	Ventilation & Engineering Controls: **Use with adequate ventilation (e.g., open doors and windows, local exhaust ventilation). Ensure appropriate decontamination equipment is available (e.g., sink, safety shower, eye-wash station).**
8.2	Respiratory Protection: **None required, when used with adequate ventilation. If user operations generate an oil mist, use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below the recommended mineral oil mist exposure limits.**
8.3	Eye Protection: **Wear safety glasses with side shields (ANSI Z87) under normal use conditions.**
8.4	Hand Protection: **None required under normal conditions of use. However, may cause skin irritation in some sensitive individuals. In such cases, wear rubber or impervious plastic gloves.**
8.5	Body Protection: **Use as necessary to prevent skin contact.**

9. PHYSICAL & CHEMICAL PROPERTIES

9.1	Density:	**0.72**
9.2	Boiling Point:	**> 240 °C (464 °F)**
9.3	Melting Point:	**NA**
9.4	Evaporation Rate:	**NA**
9.5	Vapor Pressure:	**< 0.01 mm Hg @ 20 °C (68 °F)**
9.6	Molecular Weight:	**NA**
9.7	Appearance & Color:	**Amber**
9.8	Odor Threshold:	**Ethereal/hydrocarbon odor**
9.9	Solubility:	**Not soluble in water**
9.10	Ph	**NA**
9.11	Viscosity:	**5.4 – 7.5 cSt @ 104 °F**
9.12	Other Information:	**NA**

10. STABILITY & REACTIVITY

10.1	Stability: **Stable under normal conditions of use (see section 7).**
10.2	Hazardous Decomposition Products: **Change in color signifies exposure to ultraviolet light or exceeding shelf life. Will not degrade to unstable products. Discard solution.**
10.3	Hazardous Polymerization: **Will not occur.**
10.4	Conditions to Avoid: **Use or storage near open flames, sparks, high heat (>100 °F) or other heat sources, and proximity to incompatible substances and heavily trafficked areas.**
10.5	Incompatible Substances: **Strong oxidizers such as peroxides, nitrates, and chlorates. Copper is explosively incompatible with sodium azide. Copper dust may react with acetylene gas to form copper acetylides which are sensitive to shock.**

11. TOXICOLOGICAL INFORMATION

11.1	Toxicity Data: **This product has not been tested on animals to obtain toxicological data. There are toxicology data for the components of this product, which are found in the scientific literature. These data have not been presented in this document.**	
11.2	Acute Toxicity: **See section 2.5**	
11.3	Chronic Toxicity: **See section 2.6**	
11.4	Suspected Carcinogen: **No. This product contains less than 3% Dimethyl Sulfoxide (DMSO).**	
11.5	Reproductive Toxicity: **This product is not reported to produce reproductive toxicity in humans.**	
	Mutagenicity:	**This product is not reported to produce mutagenic effects in humans. This product contains alkyl dithiophosphates (ZDDPs). Several ZDDPs have been reported to have weak mutagenic activity in cultured mammalian cells but only at concentrations that were toxic. This product contains copper an essential element of mammalian metabolism. Copper metal has little or no serious toxicity.**
	Embryotoxicity:	**This product is not reported to produce embryotoxic effects in humans.**
	Teratogenicity:	**This product is not reported to produce teratogenic effects in humans.**
	Reproductive Toxicity:	**This product is not reported to produce reproductive effects in humans.**
11.6	Irritancy of Product: **See Section 2.3**	
11.7	Biological Exposure Indices: **NE**	
11.8	Physician Recommendations: **Treat symptomatically.**	

12. ECOLOGICAL INFORMATION

12.1	Environmental Stability: **This product will slowly volatile from soil. Components of this product will slowly decompose into organic compounds.**
12.2	Effects on Plants & Animals: **There is no specific data available for this product.**
12.3	Effects on Aquatic Life: **This material should be kept out of sewage and drainage systems and all bodies of water. Releases of large volumes of this product are expected to be harmful or fatal to overexposed aquatic life.**

13. DISPOSAL CONSIDERATIONS

13.1	Waste Disposal: **Dispose of in accordance with federal, state or local regulations. Do not dump into sewers, on the ground or into any body of water.**
13.2	Special Considerations: **NA**

14. TRANSPORTATION INFORMATION

The basic description (proper shipping name, hazard class & division, ID Number, packing group) is shown for each mode of transportation. Additional descriptive information may be required by 49 CFR, IATA/ICAO, IMDG and the CTDGR.

14.1	49 CFR (GND): **NOT REGULATED**
14.2	IATA (AIR): **NOT REGULATED**
14.3	IMDG (OCN): **NOT REGULATED**
14.4	TDGR (Canadian GND): **NOT REGULATED**
14.5	ADR/RID (EU): **NOT REGULATED**
14.6	MEXICO (SCT): **NOT REGULATED**

15. REGULATORY INFORMATION

15.1	SARA Reporting Requirements: **This product contains the following chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-to-know Act of 1986 and of CFR 372; 68649-42-3 Zinc Alkydithiophosphate**
15.2	SARA Threshold Planning Quantity: **NA**
15.3	TSCA Inventory Status: **All chemical substances of this product are listed on the TSCA inventory or are otherwise exempt from inventory status.**
15.4	CERCLA Reportable Quantity (RQ): **This product has no CERCLA Reportable Quantity. However, release into a waterway may require reporting to the National Response Center. Copper: (RQ 2270 kgs)**
15.5	Other Federal Requirements: **NA**
15.6	Other Canadian Regulations **This product has been classified according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR. The components of this product are listed on the DSL/NDSL. None of the components of this product are listed on the Priorities Substances List.**
15.7	State Regulatory Information: **Components of this product are <u>not</u> listed on any of the following state criteria lists: California OSHA; California Proposition 65; Massachusetts Right to Know List; Pennsylvania Hazardous Substances List 34 323 Appendix A; Wisconsin Hazardous Substances List NR 605.09; Minnesota Hazardous Substances List, New Jersey Right to Know List; New York Right to Know List; Michigan Critical Substances List; and Florida Toxic Substances List. Under New Jersy Right to Know Act L.-1983 this product is to be identified as follows: Petroleum Oil (Grease).**

15. REGULATORY INFORMATION- continued

15.8	67/548/EEC (European Union) Requirements: **The primary component of this product is listed in Annex I of EU Directive 67/548/EEC:** **Petroleum Distillates: (Xn) Harmful. R: 42/43-48/20 - May cause sensitization by inhalation and skin contact. Harmful: danger of serious damage to health by prolonged exposure through inhalation. S: 2-29-36 - Keep out of the reach of children. Do not empty into drains. Wear suitable protective clothing.**	

16. OTHER INFORMATION

16.1	Other Information: **NA**	
16.2	Terms & Definitions: **See last page of this MSDS.**	
16.3	Disclaimer: This Material Safety Data Sheet is offered pursuant to OSHA's Hazard Communication Standard, 29 CFR §1910.1200. Other government regulations must be reviewed for applicability to this product. To the best of ShipMate's & CAIG Laboratories, Inc.'s knowledge, the information contained herein is reliable and accurate as of this date; however, accuracy, suitability or completeness are not guaranteed and no warranties of any type, either expressed or implied, are provided. The information contained herein relates only to the specific product(s). If this product(s) is combined with other materials, all component properties must be considered. Data may be changed from time to time. Be sure to consult the latest edition.	
16.4	Prepared for: **CAIG Laboratories, Inc.** **12200 Thatcher Court** **Poway, CA 92064-6876** **+1 (800) CAIG-123 (244-4123) phone** **+1 (858) 486-8398 fax** **http://www.caig.com/**	CAIG LABORATORIES, INC.
16.5	Prepared by: **ShipMate, Inc.** **18436 Hawthorne Blvd., Suite 201** **Torrance, CA 90504** **310-370-3600 phone** **310-370-5700 fax** **http://www.shipmate.com/**	ShipMate Dangerous Goods Training & Consulting

DEFINITION OF TERMS

A large number of abbreviations and acronyms appear on a MSDS. Some of these that are commonly used include the following:

GENERAL INFORMATION:

CAS No.	Chemical Abstract Service Number

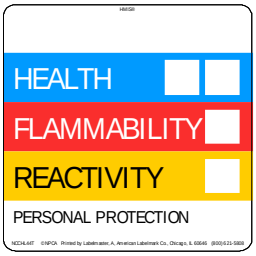
EXPOSURE LIMITS IN AIR:

ACGIH	American Conference on Governmental Industrial Hygienists
TLV	Threshold Limit Value
OSHA	U.S. Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
IDLH	Immediately Dangerous to Life and Health

FIRST AID MEASURES:

CPR	Cardiopulmonary resuscitation - method in which a person whose heart has stopped receives manual chest compressions and breathing to circulate blood and provide oxygen to the body.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM: HMIS

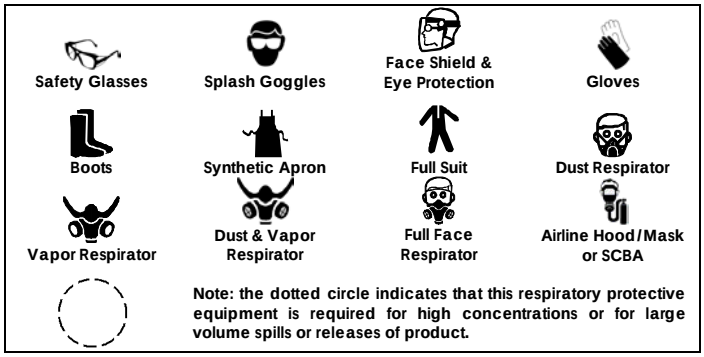


HEALTH, FLAMMABILITY & REACTIVITY RATINGS:

0	Minimal Hazard
1	Slight Hazard
2	Moderate Hazard
3	Severe Hazard
4	Extreme Hazard

PERSONAL PROTECTION RATINGS:

A		**G**	
B		**H**	
C		**I**	
D		**J**	
E		**K**	
F		**X**	**Consult your supervisor or S.O.P. for special handling directions.**



Note: the dotted circle indicates that this respiratory protective equipment is required for high concentrations or for large volume spills or releases of product.

OTHER STANDARD ABBREVIATIONS:

NA	Not Available
NR	No Results
NE	Not Established
ND	Not Determined
ML	Maximum Limit
SCBA	Self-Contained Breathing Apparatus

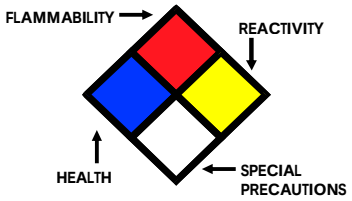
NATIONAL FIRE PROTECTION ASSOCIATION: NFPA

FLAMMABILITY LIMITS IN AIR:

Autoignition Temperature	Minimum temperature required to initiate combustion in air with no other source of ignition
LEL	Lower Explosive Limit - lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source
UEL	Upper Explosive Limit - highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source

HAZARD RATINGS:

0	Minimal Hazard
1	Slight Hazard
2	Moderate Hazard
3	Severe Hazard
4	Extreme Hazard
ACD	Acidic
ALK	Alkaline
COR	Corrosive
~~W~~	Use No Water
OX	Oxidizer



TOXICOLOGICAL INFORMATION:

LD_{50}	Lethal Dose (solids & liquids) which kills 50% of the exposed animals s
LC_{50}	Lethal concentration (gases) which kills 50% of the exposed animal
ppm	Concentration expressed in parts of material per million parts
TD_{lo}	Lowest dose to cause a symptom
TCLo	Lowest concentration to cause a symptom
TD_{lo}, LD_{lo}, & LD_o or TC, TC_o, LC_{lo}, & LC_o	Lowest dose (or concentration) to cause lethal or toxic effects
IARC	International Agency for Research on Cancer
NTP	National Toxicology Program
RTECS	Registry of Toxic Effects of Chemical Substances
BCF	Bioconcentration Factor
TL_m	Median threshold limit
log K_{OW} or log K_{OC}	Coefficient of Oil/Water Distribution

REGULATORY INFORMATION:

WHMIS	Canadian Workplace Hazardous Material Information System
DOT	U.S. Department of Transportation
TC	Transport Canada
EPA	U.S. Environmental Protection Agency
DSL	Canadian Domestic Substance List
NDSL	Canadian Non-Domestic Substance List
PSL	Canadian Priority Substances List
TSCA	U.S. Toxic Substance Control Act
EU	European Union (European Union Directive 67/548/EEC)

EC INFORMATION:

C	**E**	**F**	**N**	**O**	**T+**	**Xi**	**Xn**
Corrosive	Explosive	Flammable	Harmful	Oxidizing	Toxic	Irritant	Harmful