



SAFETY DATA SHEET

SECTION 1. IDENTIFICATION

Product identifier used on the label

: **Copper Carbonate**

Product Code(s) : None reported.

Recommended use of the chemical and restrictions on use

: Not available.

Chemical family : Metal compounds

Name, address, and telephone number of the distributor:

Arlimin Industries LLC

P.O. Box 271497

Fort Collins, CO 80527

Name, address, and telephone number of the manufacturer:

Refer to distributor

Distributor's Telephone # : 832-280-9980

24 Hr. Emergency Tel # : (800) 424-9300 (CHEMTREC)

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

Light green powder. Odourless.

Most important hazards This material is classified as hazardous under OSHA regulations (29CFR 1910.1200) (Hazcom 2012).

Hazardous classification:

Acute toxicity - Oral - Category 4

Skin Irritant - Category 2

Eye irritation - Category 2A

WHMIS information: This product is a WHMIS Controlled Product. It meets one or more of the criteria for a controlled product provided in Part IV of the Canadian Controlled Products Regulations (CPR). WHMIS classification:

Class D2B (Materials Causing Other Toxic Effects, Toxic Material)

Label elements

The following label information is applicable only to the United States according to OSHA Regulations (29 CFR 1910.1200) (Hazcom 2012):

Signal Word

Warning!

Hazard statement(s)

Harmful if swallowed.

Causes skin irritation.

Causes serious eye irritation.

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Precautionary statement(s)

Wash hands and face thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wear protective gloves and eye/face protection.

FIRST AID:

IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell. Rinse mouth.
IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs, get medical advice/attention. Take off contaminated clothing and wash before re-use.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.

Dispose of contents/container in accordance with local regulation.



The following label information is applicable only to Canada according to the Canadian Controlled Products Regulations (CPR/WHMIS):

Warning! Causes skin irritation. Causes severe eye irritation. May be harmful if swallowed.

Precautions: Use in a well-ventilated area. Wear suitable protective equipment during handling. Do not breathe dust. Avoid contact with eyes, skin and clothing. Avoid contact with incompatible materials. Wash thoroughly after handling. Keep containers closed when not in use. Store in a cool, dry, well ventilated area.

FIRST AID: If inhaled, move to fresh air. If breathing is difficult, administer oxygen. If breathing stopped, begin artificial respiration. Get medical attention if irritation develops and persists. For skin contact, wash with soap and water while removing contaminated clothing. If irritation develops, consult a physician. For eye contact, flush with running water for at least 15 minutes. Get medical attention if irritation develops and persists. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention/advice if you feel unwell. Refer To Material Safety Data Sheet for further information.



Other hazards

Other hazards which do not result in classification:

Ingestion may cause irritation of the mouth, throat and stomach. Inhalation of extremely high concentrations could cause pulmonary edema (fluid accumulation). Prolonged or repeated overexposure may cause liver, kidney and blood system effects.

Environmental precautions:

May be dangerous for the environment. Avoid release to the environment. See ECOLOGICAL INFORMATION, Section 12.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Chemical name</u>	<u>CAS #</u>	<u>Concentration</u>
Copper Carbonate	12069-69-1	98.0 - 100.0

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SECTION 4. FIRST-AID MEASURES

Description of first aid measures

- Ingestion* : IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell. Do not induce vomiting. Rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person.
- Inhalation* : Immediately remove person to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. Call a physician if irritation develops or persists.
- Skin contact* : Wash affected areas with soap and water. Get medical attention if irritation develops and persists.
- Eye contact* : Flush with large amounts of water for 15 minutes. If irritation or symptoms develop, seek medical attention.

Most important symptoms and effects, both acute and delayed

- : Harmful if swallowed.
- : Causes skin irritation.
- : Causes serious eye irritation.
- : May cause severe irritation to the mouth, throat and stomach.
- : Prolonged or repeated overexposure may cause liver, kidney and blood system effects.

Indication of any immediate medical attention and special treatment needed

- : Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

- Suitable extinguishing media* : Use media suitable to the surrounding fire such as water fog or fine spray, alcohol foams, carbon dioxide and dry chemical.
- Unsuitable extinguishing media* : None known.

Special hazards arising from the substance or mixture / Conditions of flammability

- : None known or reported by the manufacturer.

Flammability classification (OSHA 29 CFR 1910.106)

- : Not flammable.

Explosion Data: Sensitivity to Mechanical Impact / Static Discharge:

- : Not expected to be sensitive to mechanical impact or static discharge.

Hazardous combustion products

- : Copper oxides, Carbon oxides, and irritating fumes and smoke

Special protective equipment and precautions for firefighters

- Protective equipment for fire-fighters* : Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. A full-body chemical resistant suit should be worn.

Special fire-fighting procedures

- : Move containers from fire area if safe to do so. Water spray may be useful in cooling equipment exposed to heat and flame.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

- : All persons dealing with clean-up should wear the appropriate protective equipment including self-contained breathing apparatus. Keep all other personnel upwind and away from the spill/release. Restrict access to area until completion of clean-up. Refer to Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION, for additional information on acceptable personal protective equipment.

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Environmental precautions : Ensure spilled product does not enter drains, sewers, waterways, or confined spaces. For large spills, dike the area to prevent spreading.

Methods and material for containment and cleaning up

: Ventilate the area. Prevent further leakage or spillage if safe to do so. Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation. Contact the proper local authorities.

Special spill response procedures

: If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8802).
US CERCLA Reportable quantity (RQ): None reportable.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

: Use in a well-ventilated area. Wear chemically resistant protective equipment during handling. Avoid breathing dust and fume. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Keep away from acids and other incompatibles. Label containers appropriately. Wash thoroughly after handling. Keep containers closed when not in use.

Conditions for safe storage

: Store in a cool, dry, well-ventilated area. Store away from incompatibles and out of direct sunlight. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. No smoking in the area.

Incompatible materials

: Strong acids.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits:

<u>Chemical Name</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>	
	<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>
Copper Carbonate	0.1 mg/m ³ (fume) (as Cu); 1 mg/m ³ (dust and mist, as Cu)	N/Av	0.2 mg/m ³ (fume) (as Cu); 1 mg/m ³ (dust and mist, as Cu)	N/Av

Exposure controls

Ventilation and engineering measures

: Provide exhaust ventilation or other engineering controls to keep the airborne concentration of vapours below their respective threshold limit value.

Respiratory protection

: Respiratory protection is required if the concentrations exceed the TLV. Use a NIOSH approved dust respirator if dust levels exceed exposure limits. Seek advice from respiratory protection specialists.

Skin protection

: Where contact is likely, impervious gloves are recommended. The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye / face protection

: Chemical goggles must be worn to prevent dusts from entering the eyes.

Other protective equipment

: Wear sufficient clothing to prevent skin contact. An eyewash station and safety shower should be made available in the immediate working area. Other equipment may be required depending on workplace standards.

General hygiene considerations

: Avoid breathing dust and fume. Avoid contact with skin, eyes and clothing. Do not eat, drink, smoke or use cosmetics while working with this product. Upon completion of work, wash hands before eating, drinking, smoking or use of toilet facilities. Remove soiled clothing and wash it thoroughly before reuse.

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Appearance	: Light green powder.
Odour	: Odourless.
Odour threshold	: No information available.
pH	: No information available.
Melting/Freezing point	: No information available.
Initial boiling point and boiling range	
	: 333.6°C (632.5°F)
Flash point	: 169.8°C (337.6°F)
Flashpoint (Method)	: N/Ap
Evaporation rate (BuAe = 1)	: No information available.
Flammability (solid, gas)	: The product is not flammable.
Lower flammable limit (% by vol.)	
	: N/Ap
Upper flammable limit (% by vol.)	
	: N/Ap
Oxidizing properties	: None known.
Explosive properties	: Not explosive
Vapour pressure	: No information available.
Vapour density	: No information available.
Relative density / Specific gravity	
	: 4
Solubility in water	: Insoluble.
Other solubility(ies)	: No information available.
Partition coefficient: n-octanol/water or Coefficient of water/oil distribution	
	: No information available.
Auto-ignition temperature	: No information available.
Decomposition temperature	: > 200°C (> 392°F)
Viscosity	: No information available.
Volatiles (% by weight)	: No information available.
Volatile organic Compounds (VOC's)	
	: No information available.
Absolute pressure of container	
	: N/Ap
Flame projection length	: N/Ap
Other physical/chemical comments	
	: No additional information.

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: Not normally reactive.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	
	: Hazardous polymerization does not occur.
Conditions to avoid	: Ensure adequate ventilation, especially in confined areas. Avoid contact with incompatible materials.
Incompatible materials	: Strong acids.
Hazardous decomposition products	
	: None known, refer to hazardous combustion products in Section 5.

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SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

Routes of entry inhalation : YES

Routes of entry skin & eye : YES

Routes of entry Ingestion : YES

Routes of exposure skin absorption
: NO

Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation

: May be harmful if inhaled. Inhalation of dust or fumes may cause irritation of the nose, throat and upper respiratory tract. Symptoms may include coughing, choking and wheezing.

Sign and symptoms ingestion

: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Sign and symptoms skin : Causes skin irritation.

Sign and symptoms eyes : Causes eye irritation.

Potential Chronic Health Effects

: Prolonged or repeated contact may cause drying, cracking and defatting of the skin. Prolonged or repeated overexposure may cause liver, kidney and blood system effects.

Mutagenicity : Not expected to be mutagenic in humans.

Carcinogenicity : No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP.

Reproductive effects & Teratogenicity

: Not expected to have other reproductive effects.

Senitization to material : Not expected to be a skin or respiratory sensitizer.

Specific target organ effects : Eyes, skin, respiratory system and digestive system.

Irritancy : Mild to moderate skin irritant. Severe eye irritant.

Medical conditions aggravated by overexposure

: Pre-existing skin, eye and respiratory disorders.

Synergistic materials : No information available.

Toxicological data : See below for toxicological data on the substance.

<u>Chemical name</u>	<u>LC₅₀(4hr)</u>	<u>LD₅₀</u>	
	<u>inh, rat</u>	<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
Copper Carbonate	N/Av	1291 mg/kg	> 2000 mg/kg

Other important toxicological hazards

: See Section 3 for additional information.

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SECTION 12. ECOLOGICAL INFORMATION

- Ecotoxicity** : No data is available on the product itself. The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters. This product contains the following substance which may also be hazardous for the environment: Copper carbonate.
- The acute toxicity of copper carbonate is (ECHA):
 Toxicity to fish - LC50/96h/Oncorhynchus mykiss (rainbow trout) = 0.068 - 0.094 mg/L
 Toxicity to daphnia - LC50/48h/Daphnia magna (Water flea) = 0.03 - 0.063 mg/L
 Toxicity to algae
 EC50/72h/algae = 0.032 - 0.245 mg/L
 NOEC = 0.057 mg/L/72h
- Persistence and degradability** : No data is available on the product itself. Contains: Copper carbonate. Copper carbonate is considered to be slowly biodegradable.
- Bioaccumulation potential** : No data is available on the product itself. Contains: Copper carbonate. Copper carbonate has a bioconcentration factor (BCF) of 4.5 - 50 µg Cu/L.
- Mobility in soil** : No data is available on the product itself.
- Other Adverse Environmental effects** : No data is available on the product itself.

SECTION 13. DISPOSAL CONSIDERATIONS

- Handling for Disposal** : Handle waste according to recommendations in Section 7. Empty containers retain residue (liquid and/or vapour) and can be dangerous.
- Methods of Disposal** : Dispose in accordance with all applicable federal, state, provincial and local regulations. Contact your local, state, provincial or federal environmental agency for specific rules.
- RCRA** : If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method.

SECTION 14. TRANSPORTATION INFORMATION

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
TDG	None.	Not regulated.	Not regulated	none	
TDG Additional information	Not regulated unless shipping internationally by sea. If shipping by sea, this product is shipped as: UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S (Copper carbonate), Class 9, PG III. The 'Environmentally hazardous' mark must appear on packagings holding more than 5 kg of the material.				
49CFR/DOT	None.	Not regulated.	Not regulated	none	
49CFR/DOT Additional information	Not regulated unless shipping internationally by sea. If shipping by sea, this product is shipped as: UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S (Copper carbonate), Class 9, PG III. The 'Environmentally hazardous' mark must appear on packagings holding more than 5 kg of the material.				

- Special precautions for user** : Appropriate advice on safety must accompany the package.
- Environmental hazards** : This substance meets the criteria for an environmentally hazardous substance according to the IMDG Code. See ECOLOGICAL INFORMATION, Section 12.

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

: This information is not available.

SECTION 15. REGULATORY INFORMATION

US Federal Information:

TSCA: All listed ingredients appear on the Toxic Substances Control Act (TSCA) inventory.

CERCLA Reportable Quantity (RQ) (40 CFR 117.302): None reportable.

SARA TITLE III: Sec. 302, Extremely Hazardous Substances, 40 CFR 355: No Extremely Hazardous Substances are present in this material.

SARA TITLE III: Sec. 311 and 312, MSDS Requirements, 40 CFR 370 Hazard Classes: Immediate (Acute) health hazard; Chronic Health Hazard. Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds for the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

SARA TITLE III: Sec. 313, Toxic Chemicals Notification, 40 CFR 372: This material is not subject to SARA notification requirements, since it does not contain any Toxic Chemical constituents above de minimus concentrations.

US State Right to Know Laws:

California Proposition 65: To the best of our knowledge, this product does not contain any chemicals known to the State of California to cause cancer or reproductive harm.

Other U.S. State "Right to Know" Lists: None known.

Canadian Information:

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

Refer to Section 2 for a WHMIS Classification for this product.

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

International Information:

European EINECs information: All ingredients listed appear on the European EINECs inventory.

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SECTION 16. OTHER INFORMATION

Legend : ACGIH: American Conference of Governmental Industrial Hygienists
CAS: Chemical Abstract Services
CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR: Code of Federal Regulations
DOT: Department of Transportation
ERAP: Emergency Response Assistance Plan
HMIS: Hazardous Materials Identification System
IARC: International Agency for Research on Cancer
Inh: Inhalation
LC: Lethal Concentration
LD: Lethal Dose
MSHA: Mine Safety and Health Administration
N/Ap: Not Applicable
N/Av: Not Available
NIOSH: National Institute of Occupational Safety and Health
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
PEL: Permissible exposure limit
RTECS: Registry of Toxic Effects of Chemical Substances
SARA: Superfund Amendments and Reauthorization Act
STEL: Short Term Exposure Limit
TDG: Canadian Transportation of Dangerous Goods Act & Regulations
TLV: Threshold Limit Values
TPQ: Threshold Planning Quantity
TWA: Time Weighted Average
TSCA: Toxic Substance Control Act
WHMIS: Workplace Hazardous Materials Identification System

References : 1. ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices for 2013.
2. International Agency for Research on Cancer Monographs, searched 2013.
3. Canadian Centre for Occupational Health and Safety, CCIInfoWeb databases, 2013 (Chempendium, HSDB and RTECs).
4. Material Safety Data Sheets from manufacturer.
5. US EPA Title III List of Lists - October 2012 version.
6. California Proposition 65 List - February 8, 2013 version.

Preparation Date (mm/dd/yyyy) : 03/21/2013

Other special considerations for handling : Provide adequate information, instruction and training for operators.

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DISCLAIMER

This Safety Data Sheet was provided by the importer of this material. The information in the Safety Data Sheet is offered for your consideration and guidance when exposed to this product. Arlimin Industries LLC expressly disclaim all expressed or implied warranties and assume no responsibilities for the accuracy or completeness of the data contained herein. The data in this SDS does not apply to use with any other product or in any other process.

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