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MATERIAL SAFETY DATA SHEET

November 1, 2008

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Common Name: BASIC COPPER CARBONATE

Manufacturer: Old Bridge Chemicals, Inc.
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HAZARD CLASSIFICATION: NFPA: Health-3 / Fire-0 / Reactivity-0
HMIS: Health-3 / Fire-0 / Reactivity-0

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200).

SECTION I. MATERIAL IDENTIFICATION

Common Name: Copper Carbonate
Synonyms: Copper (II) Carbonate Hydroxide (2:1:2); Copper (carbonato (2-1)) dihydroxydi-; Basic copper (II) carbonate; Copper carbonate hydroxide.
Molecular Formula: $\text{CuCO}_3 \cdot \text{Cu}(\text{OH})_2$
EPA Reg. Number: 46923-8
CAS Number : 12069-69-1

SECTION II. INGREDIENTS

Copper (II) Carbonate Hydroxide (CAS No. 12069-69-1)) 96.0%

SECTION III. PHYSICAL DATA

Physical State: Fine green powder
Boiling Point: N/A
Melting Point: 392 degrees F
Specific Gravity: 4.0

Solubility in H ₂ O:	Insoluble (soluble in acids)
Appearance:	Fine green powder
Odor:	Odorless

SECTION IV. FIRE AND EXPLOSION DATA

Flash Point:	Not applicable.
Extinguishing Media:	Copper carbonate does not burn nor will it support combustion. Use dry chemical, Carbon Dioxide, foam or water mist or fog. If stored with other combustible products use water, CO ₂ or dry chemical.
Special Fire Fighting Instructions:	Wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full-face piece operated in the pressure demand or other positive pressure mode. If water is used, dike fire control water for later disposal. Keep away from streams or lakes.
Fire and Explosion Hazards:	May be an explosion hazard when mixed with incompatibles.

SECTION V. REACTIVITY DATA

Stability:	Stable at normal temperatures.
Conditions to Avoid:	Incompatibles.
Incompatibility:	Sodium hypobromite, acetylene, hydrazine, nitromethane and strong acids.
Hazardous Decomposition Products:	None at normal production temperatures and pressures. May cause acrid and irritating fumes when heated to decomposition temperatures.
Polymerization:	Will not occur.

SECTION VI. HEALTH AND HAZARD INFORMATION

Health Rating:	2 – Moderate
Flammability Rating:	0 - None
Reactivity Rating:	0 –None
Contact Rating:	1- Slight
Storage Color Code:	Orange (General Storage)

Swallowing: Oral LD50: 159 mg/kg (rabbit); 1350 mg/kg (rat). May cause burning pain in mouth, esophagus and stomach. Hemorrhagic gastritis, nausea, vomiting, abdominal pain, metallic taste and diarrhea may occur. If vomiting does not occur immediately systemic copper poisoning may occur. Symptoms may include capillary damage, headache, cold sweat, weak pulse, kidney and liver damage, central nervous excitation followed by depression, jaundice, convulsions, blood effects, paralysis and coma. Death could occur from shock or renal failure.

Skin Exposure: Certain individuals may be sensitive to copper. May cause irritation with redness and pain.

Eye Contact: May cause irritation, redness, pain, blurred vision and discoloration. May cause corneal opacity, inflammation, and conjunctivitis.

Inhalation: Cause irritation to the upper respiratory tract. Symptoms may include coughing, sore throat and shortness of breath. May result in ulceration and perforation of respiratory tract. When heated, this compound may give off copper fume, which can cause symptoms similar to the common cold, including chills and stuffiness of the head.

Chronic Exposure: Prolonged or repeated skin exposure may cause dermatitis. Prolonged exposure to dusts of copper salts may cause discoloration of the skin or hair, blood or liver damage, ulceration and perforation of the nasal septum, runny nose, metallic taste and atrophic changes and irritation of the mucous membranes.

Carcinogenicity: None as per NTP, OSHA, and IARC.

ATTENTION: This product contains chemicals known to the State of California to cause cancer or birth defects

SECTION VII. FIRST AID PROCEDURES

Swallowing:	Induce vomiting. Do not give anything by mouth or induce vomiting if the person is unconscious. Call Poison Control Center or a physician immediately.
Skin:	Wash thoroughly with soap and plenty of water. Remove and wash contaminated clothing before reuse. Get medical attention.
Eyes:	Immediately flush eyes with plenty of water for 15 minutes. Hold eyelids apart during irrigation. Immediately call a physician.
Inhalation:	Remove person to fresh air. If not breathing, give artificial respiration. Call a physician.

SECTION VIII. HANDLING PRECAUTIONS

Airborne Exposure Limits: OSHA Permissible Exposure Limit (PEL): 1 mg/m³ (TWA) for copper dusts and mists as Cu. CGIH Threshold Limit Value (TLV): 1 mg/m³ (TWA) for copper dusts and mists as Cu.

Ventilation System: A system of local exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation generally controls the emissions of the containment at its source thereby preventing dispersion of it into the general working area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, latest edition, for details.

Skin Protection: Wear protective gloves and clean body-covering clothing.

Eye Protection: Chemical safety goggles or full face shield where dusting or splashing of solution is possible. Maintain an eyewash station and quick-drench facility in the work area.

SECTION IX. DISPOSAL INFORMATION

Whatever cannot be saved for recovery or recycling should be disposed of in an approved waste disposal facility. Adhere to State and Federal disposal regulations. Dispose of container and unused contents in accordance with Federal, State and local requirements.

SECTION X. SPECIAL PRECAUTIONS

Storage: Store in a dry place.
Other Precautions: None other than those stated in the MSDS or on the package.

SECTION XI. REGULATORY INFORMATION

NOTICE: The information herein is presented in good faith and believed to be accurate. However, no warranty, express or implied, is given. Regulatory Requirements are subject to change and may differ from one location to another. It is the buyer's responsibility to ensure that its activities comply with Federal, State, and local laws. Toxic Substances Control Act (TSCA): Copper Carbonate (II) Hydroxide, CAS 12069-69-1 is on the list.

U.S. REGULATIONS: SARA 313 Information; this product contains the following substance subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372: COPPER COMPOUND 55 – 57 %

SARA HAZARD CATEGORY: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following category:

AN IMMEDIATE HEALTH HAZARD

SECTION XII. SHIPPING INFORMATION

DOT Shipping Name: Copper Carbonate
Non-regulated

SECTION XIII. MSDS PREPARATION INFORMATION

Prepared By: Joel L. Goldschmidt
Vice President