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MATERIAL SAFETY DATA SHEET OF

COPPER HYDROXIDE 77% WP

1. IDENTIFICATION OF THE CHEMICAL PRODUCT AND COMPANY

Supplier: Shanghai Bosman Industrial Co., Ltd

Street address: No. 1611, North Sichuan Road, Hongkou, Shanghai R.P. China

Tel: + 86 21 63065878

Fax: + 86 21 63065878

Product name: Copper hydroxide 77% WP

2. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT	CAS NO	PROPORTION
Copper hydroxide	20427-59-2	≥ 77%
other	Not available	≤ 23%

Other ingredients determined not to be hazardous

3. HAZARDS INDENTIFICATION

Emergency overview:

Harmful if swallowed.

Causes serious eye damage.

Fatal if inhaled.

Very toxic to aquatic life.

Toxic to aquatic life with long lasting effects.

Routes of entry: Inhalation; skin contact; eye contact.

4. FIRST AID MEASURES

General: If poisoning is suspected, immediately contact the poison information centre, doctor or nearest hospital. Have the product container, label or Material Safety Data Sheet with you when going for treatment. Tell the person contacted the complete product name, and the type and amount of exposure. Describe any symptoms and follow the advice given.

Inhalation: Move subject to fresh air.

Eye Contact: Flush eyes with a large amount of water for at least 15 minutes. Consult a physician if irritation persists.

Skin Contact: Wash affected skin areas thoroughly with soap and water. Consult a physician if irritation

persists. Remove and wash contaminated clothing thoroughly.

Ingestion: onsult a physician. Never give anything by mouth to an unconscious person. Rinse mouth with water.

Note to physician: No specific antidote is known. Treat symptomatically.

5. FIRE FIGHTING MEASURES

Flammable limits: Not determined.

Autoignition temperature: Not determined.

Hazardous combustion products: Combustion generates toxic fumes including oxides of copper and hydrogen chloride .

Extinguishing media: Use the following extinguishing media when fighting fires involving this material: carbon dioxide, dry chemical, or water spray.

Fire-fighting instructions: Contain run-off. Remain upwind. Avoid breathing smoke. Use water spray to cool containers exposed to fire. Fire fighting equipment should be thoroughly decontaminated after use.

Protective equipment for firefighters: Wear self-contained breathing apparatus (pressure-demand MSHA/NIOSH approved or equivalent) and full protective gear.

6. ACCIDENT RELEASE MEASURES

Personal precautions: Withdrawal combustion sources, sufficient respiratory ventilation/protection, fight against dusts, prevention to skin and eyes contact.

Environmental precautions: Avoid sewage, surface water, ground water and soil contamination.

Method for cleaning up: Shovel the spill into drums. Recover the product by sweeping up or vacuuming without raising dust. Collect spilled material and waste in sealable open-top type containers for disposal. Dispose of only with local, state and federal regulations.

7. HANDLING AND STORAGE

Storage: Do not store this material near food, feed or drinking water. Store in a well ventilated area. Store in a dry area. Do not allow this product to become wet or overheated in storage; decomposition, impaired activity or fire may result.

Handling: Do not handle material near food, feed or drinking water. Avoid high concentrations of dust in air and accumulation of dust on equipment. An airborne dust of this material can create a dust explosion. When handling and processing this material local exhaust ventilation may be required to control dust and reduce exposure to vapors.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guideline.

Personal protective equipment (PPE):

Respiratory protection: Where airborne exposure is likely, use NIOSH approved respiratory protection equipment appropriate to the material and/or its components.

Skin protection: Minimize skin contamination by following good industrial hygiene practice. Wearing rubber gloves is recommended. Wash hands and contaminated skin thoroughly after handling.

Eye protection: Where there is potential for eye contact, wear chemical goggles and have eye flushing equipment available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Blue loose powder.

pH: 6.0~10.0

Solubility in water: wettable in water.

10. STABILITY AND REACTIVITY

Chemical stability: Stable under normal conditions.

Conditions to avoid: Keep away from moisture, heat or flame.

Hazardous decomposition products: Thermal decomposition may yield the following: oxides of copper and hydrogen chloride.

Incompatible materials: Avoid contact with the following: oxidizing agents – acids.

Hazardous reactions: Hazardous polymerization will not occur.

11. TOXICOLOGICAL IMFORMATION

Acute toxicity:

Oral: LD_{50} for rats 600-1600 mg/kg (Calculated)

Dermal: LD_{50} for rats >2000 mg/kg

Inhalation: LC_{50} (4 h) for rats>0.7 mg/L (Calculated)

Irritant properties:

Skin: Mild skin irritation.

Eye: Severely irritating and corrosive to eyes.

12. ECOLOGICAL IMFORMATION

The following information is for the active ingredient, copper Hydroxide

Birds Acute oral LD50 for mallard ducks 223 mg Cu/kg. Dietary LC50 (8 d) for mallard ducks 219.7 mg

Cu/kg b.w. daily.

Fish LC50 (96 h) for rainbow trout 10 mg Cu/l.

Daphnia EC50 (48 h) 0.0422 mg Cu/l. Algae EC50 22.5 mg Cu/l.

Bees LD50 (oral) 49.0 μg Cu/bee; (contact) 42.8 μg Cu/bee. Worms LC50 (14 d) >677.3 mg/kg soil.

13. DISPOSAL CONSIDERATION

Triple or preferably pressure rinse containers before disposal. Add rinsings to spray tank. DO NOT dispose of undiluted chemicals on site. If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling, break, crush or puncture and bury empty containers in a local authority landfill. If no landfill is available, bury the containers below 500 mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots. Empty containers and product should not be burnt.

14. TRANSPORT INFORMATION

UN Number: 3077

UN Proper shipping name: Environmentally hazardous substances, solid, n.o.s.

Transport hazard class: 9

Packing group: III

Marine pollutant: Yes

15. REGULATARY INFORMATION

Safety phrases:

S1/2: Keep locked up and out of reach of children.

S13: Keep away from food, drink and animal feeding stuffs.

S23: Do not breathe sprays.

S24/25: Avoid contact with skin and eyes.

S36/37/38: Wear suitable protective clothing, gloves and face protection.

S60: This material and its container must be disposed of as hazardous waste.

16. OTHER INFORMATION

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This MSDS summarizes our best knowledge of the health and safety hazard information of the product and how to safely handle and use the product in the workplace. Each user should read this MSDS and consider the information in the context of the how the product will be handled and used in the workplace

including in conjunction with other products.

If clarification or further information is needed to ensure that an appropriate risk assessment can be made the user should contact the company.

END OF MSDS