

MATERIAL SAFETY DATA SHEET (MSDS)

_____ Tsurumi Soda Co., Ltd. Hydrochloric acid (hydrogen chloride) 1/4 _____

1. PRODUCT IDENTIFICATION AND SUPPLIER INFORMATION

[PRODUCT NAME: Copper oxide powder (ES copper oxide powder)]

SUPPLIER/MANUFACTURER'S NAME: Tsurumi Soda Co., Ltd.

ADDRESS: 1-7 Suehiro Cho, Tsurumi-Ku, Yokohama, JAPAN

DIVISION IN CHARGE: Sales Headquarters, Tsurumi Soda Co., Ltd.

ADDRESS: 2-12-15 Simbashi Minato-ku, Tanaka-Tamuracho Building, Tokyo, JAPAN

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EMERGENCY PHONE: CALL 045-503-7326 (Main Plant of the Headquarters)

DOCUMENT NUMBER: S-O-09-1

DATE OF PREPARATION: 2002/7/17 REVISION DATE:

2. COMPOSITION AND INFORMATION ON INGREDIENTS

CHEMICAL NAME: Copper oxide

COMPONENT and CONTENT: >=90.0%;

CHEMICAL FORMULA or STRUCTURAL DIAGRAM: CuO

DOCUMENT NUMBER of OFFICIAL GAZETTE NOTICE:

Number 1-297 of the Existing Chemical Substances under the Law Concerning Examination and Regulation of Manufacture, etc. of Chemical Substances Industrial Health and Safety Law: No number assigned.

CAS #: 1317-38-0

EXPORT (IMPORT) STATISTICS ITEM: 2825.50-000

PRTR LAW: Not Applicable

PRODUCT SUBJECT TO THE NOTIFICATION PURSUANT TO THE INDUSTRIAL HEALTH AND SAFETY LAW:

Copper oxide >=90.0%

3. EMERGENCY OVERVIEW:

CLASSIFICATION NAME: Not Applicable

PHYSICAL HAZARDS: Not Applicable

BIOLOGICAL HAZARDS: Contact of the liquid with the eyes and/or skin can lead to inflammation. Stimulate mucosa such as a throat, a nose, and lead to coughing.

4. FIRST-AID MEASURES

EYE EXPOSURE: Immediately flush eyes (including all the areas under the eyelid) with

running water for MINIMUM OF 15 MINUTES, then consult an ophthalmologist for required treatment in the first opportunity.

SKIN EXPOSURE: Remove the contamination on the clothing (including shoes, etc.) then cleanse the attached or contacted area with soap. Rinse with ample water afterwards.

INHALATION EXPOSURE: Let the victim blow his/her nose and goggle. If the sense of discomfort persists, remove the victim to the fresh air, keep the victim quiet, and seek medical attention.

INGESTION EXPOSURE: In case the victim remains conscious, give victim ample water to drink. Immediate medical attention is required

5. FIRE-FIGHTING MEASURES (IN CASE OF NEIGHBORING FIRE)

FIRE-FIGHTING MEASURES: non-flammable.

IN CASE OF NEIGHBORING FIRE: Promptly remove the container to a safer area. If the removal is not available, cool down the container and the surrounding area with sprinkled water to prevent the container from being destroyed.

6. SPILL AND LEAK RESPONSE

Implement necessary measures to prevent people from entering the site of the dispersion, such as setting up a rope around the site.

Proper protective equipments must be used upon the operation. No operation must be conducted in the downwind area.

Retrieve in a container, and then rinse it with ample water.

7. HANDLING and STORAGE

HANDLING: Due to its behavior being suspension particle in the air, protection glasses (goggles style,) and protection gloves are required, and caution for the leaks/dispersion must be used.

STORAGE: Pack it to prevent it from leaking/dispersing, and store it in a place protected from rain/dew moistures.

Basin for washing hands/faces should be installed around the operation/storage areas of the product.

8. EXPOSURE CONTROLS and PERSONAL PROTECTION

STANDARD CONTROL CONCENTRATION: Not Specified.

ACCEPTABLE CONCENTRATION:

Japan Society for Occupational Health (1992): Not described

ACGIH (1992 - 1993): Not described

FACILITIES MEASURES: Total/spot exhaust ventilation systems

PERSONAL PROTECTIVE EQUIPMENTS

RESPIRATOR: Dust mask

PROTECTION GLASSES: Goggles style

PROTECTION GLOVES: Rubber glove

PERSONAL PROTECTIVE CLOTHING: Rubber boots, Splash suit with rubber lining

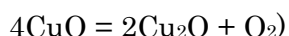
9. PHYSICAL and CHEMICAL PROPERTIES

APPEARANCE, ETC.: Black powder

SPECIFIC GRAVITY: 6.3

BOILING POINT: 1026°C

(Note: Partly decomposed and engages into the oxygen behavior.



10. STABILITY and REACTIVITY

FLAMMABILITY: None.

FIRE POINT: None.

COMBUSTIBILITY: None.

OXIDIZABILITY: None.

SELF-REACTIVITY/EXPLOSIBILITY: None.

DUST EXPLOSION CHARACTERISTICS: None.

STABILITY AND REACTIVITY: Reacts with acid, and becomes copper (II) salt; No dissolution in water.

11. TOXICOLOGICAL INFORMATION (INCLUDING BIOLOGICAL / EPIDEMIOLOGICAL INFORMATION)

SKIN CORROSIVENESS: Nothing specific to be reported.

IRRITANCY (skin, eye): Gives eye a feeling of foreign body sensation, and stimulates mucosa. Has little stimulatory for skin.

ACUTE TOXICITY (including 50% lethal dose): Nothing specific to be reported

12. ECOLOGICAL INFORMATION

FISH TOXICITY: Nothing specific to be reported.

13. DISPOSAL CONSIDERATIONS

Ask professional industrial waste disposer for management.

14. TRANSPORT INFORMATION

Nothing specific to be reported.

15. REGULATORY INFORMATION

Article 57 section 2: Substance Requiring Notification, Occupational Safety and Health Law

16. OTHER INFORMATION (CONTACT INFORMATION REGARDING THIS STATEMENT, WORKS CITED, ETC.)

A REFERENCE OF MENTION CONTENTS: Sales Headquarters, Tsurumi Soda Co., Ltd.

TEL. 03-3503-0856 FAX. 03-3503-4595

WORKS CITED

- 1) *Kagaku Dai Jiten* (Great Chemistry Dictionary,) Kyoritsu Publishing (1964)
- 2) *Kagaku Binran* (Chemistry Handbook,) Japan Chemistry Association (1977)
- 3) *13599 No Kagaku Syouhin* (13599 Chemical Merchandise Items,) Nippon Chemical Industrial Co., Ltd.(1999)

"CAUTION"

Albeit the information contained herein was prepared based on the references, information, and data available at the time of the preparation, no warranty is expressed or implied regarding the accuracy and completeness of this information.

All the precautions included herein were for ordinary use, operation of the substance, and wherefore additional safety measures that deemed fit to the purpose must be employed for any special operation of the substance.