

MSDS (MATERIAL SAFETY DATA SHEET)

SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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| SUBSTANCE | BRASS SALT |
| TRADE NAMES/SYNONYMS | BRASS SALT Cyanide Salt |
| CHEMICAL FAMILY | |
| USE | ELECTRO PLATING CHEMICAL |
| MANUFACTURER INFORMATION | COMPANY : INCHEON CHMICAL CO.,LTD ADDRESS : #173-90, GAJWA-DONG ,SEO-GU, INCHEON, KOREA TELEPHONE : 032 - 578 - 4711 FACSIMILE : 032 - 578 - 4716 |

SECTION 2 COMPOSITION, INFORMATION ON INGREDIENTS

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| COMPONENT | Copper Cyanide |
| CAS NO. | 544-92-3 |
| EC Number | 208-883-6 |
| CONTENT | 34 % |
| COMPONENT | Zinc Cyanide |
| CAS NO. | 557-21-1 |
| EC Number | 209-162-9 |
| CONTENT | 7.5 % |
| COMPONENT | The Other Metal |
| CAS NO. | |
| EC Number | |
| CONTENT | 57.5 % |

SECTION 3 HAZARDOUS IDENTIFICATION

NFPA RATINGS (SCALE 0–4): HEALTH=2 FIRE=0 REACTIVITY=0

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| EMERGENCY OVERVIEW | PHYSICAL FORM | Solid (white crystal) |
| | MAJOR HEALTH HAZARDS | respiratory tract irritation, skin irritation, eye irritation |
| | PHYSICAL HAZARDS | Dust/air mixtures may ignite or explode. |
| | INHALATION | SHORT TERM EXPOSURE: irritation. LONG TERM EXPOSURE: nausea, headache, dizziness |
| POTENTIAL HEALTH EFFECTS | SKIN CONTACT | SHORT TERM EXPOSURE: irritation, itching LONG TERM EXPOSURE: nausea, headache, dizziness |
| | EYE CONTACT | SHORT TERM EXPOSURE: same as effects reported in short term ingestion, irritation (possibly severe), eye damage. LONG TERM EXPOSURE: same as effects reported in short term exposure |
| | INGESTION | SHORT TERM EXPOSURE: metallic taste, nausea, vomiting, diarrhea, stomach pain, chest pain. LONG TERM EXPOSURE: no information on significant adverse effects. |
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SECTION 4 FIRST AID MEASURES

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| INHALATION | When safe to enter area, remove from exposure. Use a bag valve mask or similar device to perform artificial respiration (rescue breathing) if needed. Get medical attention immediately. |
| SKIN CONTACT | Remove contaminated clothing, jewelry, and shoes immediately. Wash with soap or mild detergent and large amounts of water until no evidence of chemical remains (at least 15–20 minutes). Get medical attention, if needed.. |
| EYE CONTACT | Wash eyes immediately with large amounts of water or normal saline, occasionally lifting upper and lower lids, until no evidence of chemical remains. Get medical attention immediately. |

INGESTION

Contact local poison control center or physician immediately.

Never make an unconscious person vomit or drink fluids. When vomiting occurs, keep head lower than hips to help prevent aspiration.

If person is unconscious, turn head to side.

Get medical attention immediately.

**NOTE TO
PHYSICIAN**

Consider amyl nitrite inhalation, 1 ampoule (0.2 mL) every 5 minutes, and oxygen. For ingestion, consider gastric lavage.

Consider oxygen.

SECTION 5 FIRE FIGHTING MEASURES

**FIRE AND
EXPLOSION
HAZARDS**

Negligible fire hazard.

**EXTINGUISHING
MEDIA**

regular dry chemical, carbon dioxide, water, regular foam

LARGE FIRE

Use regular foam or flood with fine water spray.

FIREFIGHTING

Move container from fire area if it can be done without risk. Do not scatter spilled material with high-pressure water streams.

Dike for later disposal. Use extinguishing agents appropriate for surrounding fire.

Avoid inhalation of material or combustion by-products.

Stay upwind and keep out of low areas.

Full firefighting turn-out gear (bunker gear).

**FIREFIGHTING
PROTECTIVE
EQUIPMENT**

Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.

Any self-contained breathing apparatus with a full facepiece.

SECTION 6 ACCIDENTAL RELEASE MEASURES

**OCCUPATIONAL
RELEASE**

Collect spilled material in appropriate container for disposal.

Keep out of water supplies and sewers.

Keep unnecessary people away, isolate hazard area and deny entry.

SECTION 7 HANDLING AND STORAGE

Store and handle in accordance with all current regulations and standards.

Keep separated from incompatible substances.

SECTION 8 EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:

COPPER CYANIDE:

COPPER AND COMPOUND (as Cu):

- 0.1 mg/m³ OSHA TWA (fume)
- 1.0 mg/m³ OSHA TWA (dust)
- 0.2 mg/m³ ACGIH TWA (fume)
- 1.0 mg/m³ ACGIH TWA (dust)
- 0.1 mg/m³ NIOSH recommended TWA 10 hour(s)

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| VENTILATION | Provide local exhaust ventilation system. |
| | Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. |
| | Ensure compliance with applicable exposure limits. |
| EYE PROTECTION | Wear splash resistant safety goggles. |
| | Provide an emergency eye wash fountain and quick drench shower in the immediate work area. |
| CLOTHING | Wear appropriate chemical resistant clothing. |
| GLOVES | Wear appropriate chemical resistant gloves. |
| RESPIRATOR | The following respirators and maximum use concentrations are drawn from NIOSH and/or OSHA. |
| | Respiratory equipment must be certified by NIOSH/MSHA. |
| Measurement Element | Cu |
| | - 5 mg/m ³ Any dust and mist respirator. |
| | - 10 mg/m ³ Any dust and mist respirator. Any supplied-air respirator. |
| | - 25 mg/m ³ Any supplied-air respirator. Any powered, air-purifying respirator with a dust and mist filter. |
| | - 50 mg/m ³ Any air-purifying respirator with a full facepiece and a high-efficiency particulate filter. Any self-contained breathing apparatus with a full facepiece. Any supplied-air respirator with a full facepiece. |

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

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| PHYSICAL FORM | SOLID (WHITE CRYSTAL) |
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| MOLECULAR FORMULA |
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| MELTING POINT | No data available. |
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| VAPOR PRESSURE | not applicable |
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| VAPOR DENSITY | not applicable |
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| SPECIFIC GRAVITY | not applicable |
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| WATER SOLUBILITY | soluble. |
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| pH | not applicable |
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| VOLATILITY | not applicable |
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| ODOR THRESHOLD: | No data available. |
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| EVAPORATION RATE | not applicable |
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SECTION 10 STABILITY AND REACTIVITY

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| REACTIVITY | Stable at normal temperatures and pressure. |
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| CONDITIONS | Avoid heat, flames, sparks and other sources of ignition. |
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| TO AVOID | Avoid contact with incompatible materials. |
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| INCOMPATIBILITIES | oxidizing materials, combustible materials. |
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| HAZARDOUS DECOMPOSITION | Thermal decomposition products: oxides of tin, oxides of sulfur, carbon. |
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| POLYMERIZATION | Will not polymerize. |
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SECTION 11 TOXICOLOGICAL INFORMATION

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| COPPER CYANIDE |
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| TOXICITY DATA | 1265 mg/kg oral-rat LD50. |
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| ACUTE TOXICITY LEVEL | Moderately Toxic : ingestion. |
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| TARGET ORGANS | No data available. |
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| MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE | blood system disorders, liver disorders, skin disorders and allergies. |
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SECTION 12 ECOLOGICAL INFORMATION

No data available.

SECTION 13 DISPOSAL CONSIDERATIONS

Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste
Number(s): P029. Dispose in accordance with all applicable regulations.

SECTION 14 TRANSPORT INFORMATION

U.S. DOT 49 CFR 172.101. SHIPPING NAME-UN NUMBER; HAZARD CLASS; PACKING
GROUP; LABEL:

Copper cyanide-UN1587; 6.1; II; POISON

SECTION 15 REGULATORY INFORMATION

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| U.S. REGULATIONS | TSCA INVENTORY STATUS | Y |
| | TSCA 12(b) EXPORT NOTIFICATION | Not listed. |
| | CERCLA SECTION 103 (40CFR302.4) | Y |
| | SARA SECTION 302 (40CFR355.30) | Y |
| | SARA SECTION 304 (40CFR355.40) | Y |
| | SARA SECTION 313 (40CFR372.65) | Y |
| | SARA HAZARD CATEGORIES, SARA SECTIONS 311/312 40CFR370.21) | ACUTE : Y CHRONIC : N FIRE : N REACTIVE : Y SUDDEN RELEASE : N |
| | OSHA PROCESS SAFETY (29CFR1910.119) | Y |
| STATE REGULATIONS | CALIFORNIA PROPOSITION 65 | N |
