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MATERIAL SAFETY DATA SHEET

SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

SUBSTANCE	CUPROUS CYANIDE
TRADE NAMES/SYNONYMS	CUPROUS CYANIDE
CHEMICAL FAMILY	COPPER(I) CYANIDE, COPPER CYANIDE(CU(CN)), CUPRICIN, CYANIDES
USE	ELECTRO PLATING CHEMICAL
MANUFACTURER INFORMATION	COMPANY : INCHEON CHEMICAL CO.,LTD ADDRESS : #173-90, GAJWA-DONG ,SEO-GU, INCHEON, KOREA TELEPHONE : 032 - 578 - 4711~5 FACSIMILE : 032 - 578 - 4716

SECTION 2 COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT	CUPROUS CYANIDE
CAS NO.	544-92-3
EC NUMBER (EINECS)	208-883-6
CONTENT	100

SECTION 3 HAZARDOUS IDENTIFICATION

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

EC CLASSIFICATION (CALCULATED)

T+ Very Toxic

R 26/27/28-32

EMERGENCY OVERVIEW	COLOR	off-white, green, red, white
	PHYSICAL FORM	white powder
	MAJOR HEALTH HAZARDS	respiratory tract irritation, skin irritation, eye irritation

POTENTIAL HEALTH EFFECTS	INHALATION	SHORT TERM EXPOSURE: irritation. LONG TERM EXPOSURE: nausea, headache, dizziness
	SKIN CONTACT	SHORT TERM EXPOSURE: irritation. 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, digestive disorders chest pain, difficulty breathing, irregular heartbeat headache, bluish skin color, lung congestion, kidney damage, paralysis, convulsions, coma LONG TERM EXPOSURE: dizziness, blood disorders

SECTION 4 FIRST AID MEASURES

INHALATION	<p>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.</p>
SKIN CONTACT	<p>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..</p>
EYE CONTACT	<p>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.</p>
INGESTION	<p>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.</p>

ANTIDOTE

amyl nitrite, inhalation; sodium nitrite, intravenous; sodium thiosulfate, infusion; oxygen. calcium disodium edetate / dextrose, intravenous; penicillamine, oral.

**NOTE TO
PHYSICIAN**

**Consider amyl nitrite inhalation, 1 ampoule (0.2mL) 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.

SECTION 6 ACCIDENTAL RELEASE MEASURES

**OCCUPATIONAL
RELEASE**

Do not touch spilled material. Stop leak if possible without personal risk. Small spills: Absorb with sand or other non-combustible material. Collect with absorbent into suitable container. Small dry spills: Collect spilled material in appropriate container for disposal. Move containers away from spill to a safe area. Large spills: Dike for later disposal. 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.
Store in a cool, dry place. Store in a tightly closed container.
Keep separated from incompatible substances.**

SECTION 8 EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:**CRPROUS CYANIDE****COPPER AND COMPOUNDS (as Cu):**

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

CYANIDES (as Cn)

- 5 mg/m³ OSHA TWA
- 5 mg/m³ ACGIH TWA (skin)
- 5 mg/m³ NIOSH recommended ceiling 10 minute(s)

HYDROGEN CYANIDE:

- 10 ppm (11 mg/m³) OSHA TWA (skin)
- 4.7 ppm (5 mg/m³) OSHA STEL (skin) (vacated by 58 FR 35338, June 30, 1993)
- 4.7 ppm (5 mg/m³) ACGIH ceiling (skin)
- 4.7 ppm (5 mg/m³) NIOSH recommended STEL (skin)

VENTILATION	Provide local exhaust or process enclosure ventilation system Ensure compliance with applicable exposure limits.
EYE PROTECTION	Wear splash resistant safety goggles with a faceshield. 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.
	The following respirators and maximum use concentrations are drawn from NIOSH and/or OSHA.
Measurement Element	Copper (Cu)

RESPIRATOR

- 5 mg/m³
Any dust and mist respirator.
- 10 mg/m³
Any dust and mist respirator.
Any supplied-air respirator.
- 25 mg/m³
Any supplied-air respirator.
Any powered, air-purifying respirator with a dust and mist filter.
- 50 mg/m³
Any air-purifying respirator with a full facepiece and a high-efficiency particulate filter.
Any powdered, 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.
- 100 mg/m³
Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode.

**Measurement
Element****CYANIDE (CN)**

-
- 25mg/m³
Any supplied-air respirator
Any self-contained breathing apparatus with a full facepiece
-

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL FORM**SOLID**

COLOR**off-white, green, red, white**

ODOR**not available**

MOLECULAR WEIGHT**89.56**

MOLECULAR FORMULA**CU-C-N**

BOILING POINT	decomposes
MELTING POINT	883 F (473 C) (under nitrogen)
VAPOR PRESSURE	not applicable
VAPOR DENSITY	not applicable
SPECIFIC GRAVITY(water=1)	2.92
WATER SOLUBILITY	insoluble
pH	not applicable
VOLATILITY	not applicable
ODOR THRESHOLD:	not available.
EVAPORATION RATE	not applicable
COEFFICIENT OF WATER/ OIL DISTRIBUTION	not available

SECTION 10 STABILITY AND REACTIVITY

REACTIVITY	Stable at normal temperatures and pressure.
CONDITIONS TO AVOID	Avoid heat, flames, sparks and other sources of ignition. Avoid generating dust. Keep out of water supplies and sewers.
INCOMPATIBILITIES	acids, metals, oxidizing materials, halogens
HAZARDOUS DECOMPOSITION	Thermal decomposition products: cyanides
POLYMERIZATION	Will not polymerize.

SECTION 11 TOXICOLOGICAL INFORMATION

TOXICITY DATA	1265 mg/kg oral-rat LD50
LOCAL EFFECTS	Irritant: inhalation, skin, eye
CARCINOGEN STATUS	None.
ACUTE TOXICITY LEVEL	Moderately Toxic: ingestion
TARGET ORGANS	No data available.
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE	blood system disorders, liver disorders, skin disorders and allergies

SECTION 12 TRANSPORT INFORMATION

U.S. DOT 49 CFR 172.101 SHIPPING NAME-UN NUMBER; HAZARD CLASS; PACKING GROUP; LABEL: Copper cyanide-1587; 6.1; II; POISON

SECTION 13 REGULATORY INFORMATION

U.S. REGULATIONS	TSCA INVENTORY STATUS	Y
	TSCA 12(b) EXPORT NOTIFICATION	Not listed.
	CERCLA SECTION 103 (40CFR302.4)	N
	HYDROGEN CYANIDE	10 LBS RQ
	CUPROUS CYANIDE	10 LBS RQ
	SARA SECTION 302 (40CFR355.30)	Y
	HYDROGEN CYANIDE	10 LBS TPQ
	SARA SECTION 304 (40CFR355.40)	Y
	HYDROGEN CYANIDE	10 LBS RQ
	SARA SECTION 313 (40CFR372.65)	Y
	COPPER AND COMPOUNDS (as Cu)	
	HYDROGEN CYANIDE	
		ACUTE : Y
	SARA HAZARD CATEGORIES, CHRONIC : Y	
	SARA SECTIONS 311/312 FIRE : N	
	40CFR370.21) REACTIVE : N	
		SUDDEN RELEASE : N

OSHA PROCESS SAFETY
(29CFR1910.119)

Y

HYDROGEN CYANIDE

1000 LBS TQ

EUROPEAN
REGULATION

EC NUMBER (EINECS)

208-883-6

EC RISK AND SAFETY
PHRASES

R 26/27/28 Very toxic by inhalation, in contact with skin and if swallowed.

R 32 Contact with acids liberates very toxic gas.

S 1/2 Keep locked-up and of reach of children.

S 7 Keep container tightly closed.

S 28b After contact with skin, wash immediately with plenty of soap and water.

S 29 Do not empty into drains.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
