

MATERIAL SAFETY DATA SHEET

CREATION DATE : JAN. 06, 2012.

SECTION 1 COMPANY IDENTIFICATION

COMPANY NAME : SAMHWA NON FERROUS METAL IND. CO., LTD.

HEAD OFFICE & FACTORY : 779-9 WONSI-DONG DANWON-GU ANSAN-SI KYUNGKI-DO R. O. KOREA

PHONE : + 82-31-491-2161~4, FAX : + 82-31-491-2164

CHARGE DEPT-QUALITY ASSURANCE DEPT.

PERSON IN CHARGE : D. W. Ha

SECTION 2 COMPOSITION, INFORMATION ON INGREDIENTS

COMMODITY : TIN-ZINC ALLOY WIRES

ITEM & ITS COMPONENT : **TZ4060 WIRE**

TIN (Sn) : 40%± 1% (Typical Assay : 40.08%)

ZINC (Zn) : Rest [60%]

ITEM & ITS COMPONENT : **TZ6040 WIRE**

TIN (Sn) : 60%± 1% (Typical Assay : 59.98%)

ZINC (Zn) : Rest [40%]

ITEM & ITS COMPONENT : **TZ7030 WIRE**

TIN (Sn) : 70%± 1% (Typical Assay : 70.11%)

ZINC (Zn) : Rest [30%]

ITEM & ITS COMPONENT : **TZ80185 WIRE**

TIN (Sn) : 80%± 2% (Typical Assay : 79.97%)

ZINC (Zn) : Rest [18.5%]

ANTIMONY (Sb) : 1.0%, + 0.5% , - 0.3% (Typical Assay : 0.99%)

COPPER (Cu) : 0.5% ± 0.3% (Typical Assay : 0.042%)

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ITEM & ITS COMPONENT : **S-9 WIRE**

TIN (Sn) : 84%± 2% (Typical Assay : 83.92%)

ZINC (Zn) : Rest [14.55%]

ANTIMONY (Sb) : 1.0%, ± 0.3% (Typical Assay : 0.99%)

COPPER (Cu) : 0.05% ± 0.03% (Typical Assay : 0.042%)

BISMUTH (Bi) : 0.4% ± 0.2% (Typical Assay : 0.39%)

CAS NUMBERS :

TIN CAS NUMBER: 7440-31-5

ZINC CAS NUMBER: 7440-66-6

ANTIMONY CAS NUMBER: 7440-36-0

COPPER CAS NUMBER: 7440-50-8

BISMUTH CAS NUMBER : 7440-69-9

SECTION 3 HAZARDS IDENTIFICATION

NFPA RATINGS (SCALE 0-4) : HEALTH = 1, FIRE = 3, REACTIVITY = 0

EMERGENCY OVERVIEW :

COLOR : White.

PHYSICAL FORM : Solid.

POTENTIAL HEALTH EFFECTS :

INHALATION :

SHORT TERM EXPOSURE : Irritation, Metal fume fever.

LONG TERM EXPOSURE : Lung damage.

SKIN CONTACT :

SHORT TERM EXPOSURE : Irritation.

LONG TERM EXPOSURE : Same effects as short term exposure.

EYE CONTACT :

SHORT TERM EXPOSURE : Irritation.

LONG TERM EXPOSURE : Same effects as short term exposure.

INGESTION :

SHORT TERM EXPOSURE : No information on significant adverse effects.

LONG TERM EXPOSURE : Nausea, Vomiting, Stomach pain.

CARCINOGEN STATUS : OSHA : N, NTP : N, IARC : N

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SECTION 4 FIRST AID MEASURES

INHALATION : Remove from exposure immediately.

Use a bag valve mask or similar device to perform artificial respiration (rescue breathing) if needed.

Get medical attention.

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.

Give water, milk or activated charcoal slurry.

Allow vomiting to occur.

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 : For ingestion, consider gastric lavage.

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SECTION 5 FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS : Negligible fire and explosion hazard in bulk form.

Dust / Air mixtures may ignite or explode.

EXTINGUISHING MEDIA : Dolomite, dry powder for metal fires, sand, graphite, soda ash, sodium chloride.

Do not get water directly on material.

FIRE FIGHTING : Move container from fire area if it can be done without risk.

Cool containers with water spray until well after the fire is out.

Stay away from the ends of tanks.

For fires in cargo or storage area : Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out.

If this is impossible then take the following precautions : Keep unnecessary people away, isolate hazard area and deny entry.

Let the fire burn. Use extinguishing agents appropriate for surrounding fire.

Avoid inhalation of material or combustion by-products.

SECTION 6 ACCIDENTAL RELEASE MEASURES

OCCUPATIONAL RELEASE :

Large spills : Collect spilled material in appropriate container for disposal.

Avoid generating dust. Clean up residue with a high-efficiency particulate filter vacuum.

SECTION 7 HANDLING AND STORAGE

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

Store in a cool, dry place.

Keep separated from incompatible substances.

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SECTION 8 EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS :

TIN AND INORGANIC TIN COMPOUNDS (as Sn) :

2 mg/m³ OSHA TWA

2 mg/m³ ACGIH TWA

2 mg/m³ NIOSH recommended TWA 10 hour(s)

2 mg/m³ DFG MAK TWA (total particulate)

4 mg/m³ DFG MAK peak 30 minute average value 4 times/shift

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

COLOR : White

PHYSICAL FORM : Solid

MELTING POINT : TZ6040 = 197 - 330 °C, TZ7030 = 197 - 308 °C, TZ7030 = 197 - 280 °C

SPECIFIC GRAVITY (Water = 1) : 7.19 ~ 7.22

WATER SOLUBILITY : Insoluble

PH : Not applicable

EVAPORATION RATE : Not applicable

SOLVENT SOLUBILITY :

Soluble : Hydrochloric acid, Sulfuric acid, Aqua regia, Hot potassium hydroxide Solutions, Alkali

Slightly Soluble : Dilute nitric acid, Acetic acid

SECTION 10 STABILITY AND REACTIVITY

REACTIVITY : Stable at normal temperatures and pressure.

CONDITIONS TO AVOID : Avoid generating dust. Avoid heat, flames, sparks and other sources of ignition.

INCOMPATIBILITIES : Acids, Oxidizing materials, Halogens, Metal salts, Peroxides, Bases, Metal oxides, Metals,
Combustible materials.

HAZARDOUS DECOMPOSITION : Thermal decomposition products: Oxides of tin.

POLYMERIZATION : Will not polymerize.

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SECTION 11 TOXICOLOGICAL INFORMATION

TIN :

CARCINOGEN STATUS : None.

ACUTE TOXICITY LEVEL : No data available.

TARGET ORGANS : No data available.

TUMORIGENIC DATA : Available.

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY DATA :

FISH TOXICITY : 840 ug/L 96 hour(s) LC50 (Mortality) Banded killifish (*Fundulus diaphanus*)

INVERTEBRATE TOXICITY : 45.8 ug/L 72 hour(s) EC50 (Shell Valve Closure) Swan mussel (*Anodonta cygnea*)

ALGAL TOXICITY : 65 ug/L 4 hour(s) IC50 (Population Growth) Diatom (*Nitzschia closterium*)

PHYTOTOXICITY : 10000 ug/L 4 hour(s) EC50 (Growth) Duckweed (*Lemna minor*)

FATE AND TRANSPORT :

BIOCONCENTRATION : 7100 uM 2 hour(s) BCFD (Residue) Duckweed (*Lemna trisulca*) 3.06 uM

SECTION 13 DISPOSAL CONSIDERATIONS

Subject to disposal regulations : U.S. EPA 40 CFR 262. Hazardous Waste Number(s) : D001.

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 :

Metal powders, Flammable, N.O.S. (Tin)-UN3089 ; 4.1; II ; Flammable solid

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SECTION 15 REGULATORY INFORMATION

U.S. REGULATIONS :

TSCA INVENTORY STATUS : Y

TSCA 12(b) EXPORT NOTIFICATION : Not listed.

CERCLA SECTION 103 (40CFR302.4) : N

SARA SECTION 302 (40CFR355.30) : N

SARA SECTION 304 (40CFR355.40) : N

SARA SECTION 313 (40CFR372.65) : N

SARA HAZARD CATEGORIES, SARA SECTIONS 311/312 (40CFR370.21) :

ACUTE : Y

CHRONIC : N

FIRE : Y

REACTIVE : N

SUDDEN RELEASE : N

OSHA PROCESS SAFETY (29CFR1910.119) : N

STATE REGULATIONS :

CALIFORNIA PROPOSITION 65 : N

SECTION 16 OTHER INFORMATION

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