HI-TECH WIRES ASIA	**SAFETY DATA SHEET** **EDM WIRE**	Révision 0

	Signature
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Vérificateur	M.LY

Valide à compter du	15/10/08
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Nombre de pages incluant celle-ci : 11

1.PRODUCT' S NAME AND MANUFACTURER' S NAME

1.1. PRODUCT' S NAME AND USE

ELECTRIC DISCHARGE MACHINING WIRE ELECTRODE MADE OF COPPER BASED ALLOYS.

THIS WIRE IS MADE FOR USE ON SPECIFIC EDM MACHINES, BY QUALIFIED OPERATORS.

1: EDM WIRE, WOUND ON SPOOLS.
2: SAID SPOOLS SURROUNDED BY A PLASTIC SLEEVE OR BAG.
3: SAID BAGS MAY CONTAIN A DESICCANT SACHET
4: SAID SLEEVES OR BAGS CONTAINED IN SMALL CLOSED CARDBOARD BOXES.
5: SAID BOXES GROUPED INTO A SHIPMENT CARDBOARD BOX AND IN SOME CASES IN A WOOD BOX.
6: SAID GROUP BEING WRAPED IN A PLASTIC FILM.
7: PAPER DOCUMENTS AND LABELS.

1.2. MANUFACTURER' S NAME

HI TECH WIRES ASIA
46, STREET NUMBER 6, VSIP 1
THUAN AN DISTRIC, BINH DUONG PROVINCE
VIETNAM

1.3. PHONE AND FAX NUMBERS FOR INFORMATION

Tel: +84 (0) 650 3 769 131
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2.DETAILS OF COMPONENTS

ALL WIRES:

CU: > 50 % (WEIGHT) CAS # 7440-50-8

ZN: < 50 % (WEIGHT) CAS # 7440-66-6

LIGHT TRACES OF WIRE DRAWING PROCESS FLUIDS ARE PRESENT ON THE SURFACE OF THE WIRE (<1%).

THE METALS USED FOR THE MANUFACTURING OF WIRES ARE NOT ALLOYED WITH LEAD

PACKAGING:

SPOOL
POLYSTYRENE SPOOL CAS # 9003-53-6
OR ABS SPOOL CAS # 9003-56-9

DESICCANT SACHET
SODIUM/CALCIUM ALUMINOSILICATE CAS # 97862-66-3

BAG OR SLEEVE
POLYAMIDE + POLYETHYLENE BAG CAS # 25038-54-4 POLYAMIDE
CAS # 9002-88-4 POLYETHYLENE

OR POLYESTER/ALUMINIUM/POLYETHYLENE LAMINATE FOR PRODUCTS CF.105, 107, 108, 127
CAS # 25038-59-9 POLYESTER
CAS # 7429-90-5 ALUMINIUM
CAS # 9002-88-4 POLYETHYLENE
MAY CONTAIN TRACES OF:
CAS # 7439-96-5 MANGANESE
CAS # 7440-47-3 CHROME
CAS # 7440-50-8 COPPER
CAS # 7440-66-6 ZINC
CAS # 7440-02-0 NICKEL
CAS # 7440-48-4 COBALT

BOX FOR 1 TO 4 SPOOLS
CARDBOARD BOX
SYNTHETIC STRAPS
ADHESIVE TAPE

SHIPMENT BOX
WOOD BOX (IN SOME CASES)
CARDBOARD BOX (IN OTHER CASES)
POLYETHYLENE FILM

OTHERS
LABELS AND DOCUMENTS

3. PHYSICAL DATA OF THE WIRE

APPEARANCE OF WIRES

WIRE TYPE	**REFERENCE**	**APPEARANCE**	Approx. Copper	Approx. Zinc
ZINC COATED BRASS A OR SD TYPE	CF.104….. CF.107….. CF.111…..	SILVER-GREY	61%	39%
PLAIN BRASS	CF.012….. CF.015….. CF.016….. CF.018….. CF.019…..	YELLOW	63%	37%

UNS CORRESPONDANCE

THIS TABLE RELATES THE UNIFIED NUMBER DESIGNATION (UNS) WITH THE AVERAGE GLOBAL COMPOSITION OF THE WIRES

AVERGE COPPER CONTENT	AVERAGE ZINC CONTENT	UNS
63 %	37 %	C27000
61 %	39 %	C28000

PHYSICAL DATA

	VALUE		UNIT
MATERIAL	COPPER	ZINC	
FORM	SOLID	SOLID	
DENSITY	8.9	7.14	g/cm^3
MELTING POINT	1084	420	°C
BOILING POINT	2595	906	°C
VAPOR PRESSURE AT 25°C	$< 10^{-10}$	$<10^{-10}$	Pa
VAPOR PRESSURE AT MELTING POINT	72.10^{-3}	20	Pa
SOLUBILITY (H2O)	<0.1%	<0.1%	

COPPER AND/OR ZINC OXIDES ARE PRESENT AT THE SURFACE OF THE WIRES.

4. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: N/A

FLAMMABLE LIMITS N/A

SPECIAL FIRE FIGHTING PROCEDURE:

WEAR SELF CONTAINED BREATHING APPARATUS AND PROTECTION CLOTHING TO PREVENT CONTACT WITH SKIN AND EYES.

FIRE EXTINGUISHING MEDIA FOR WIRE:

USE EXTINGUISHING MEDIA APPROPRIATE FOR SURROUNDING FIRE.

FIRE EXTINGUISHING MEDIA FOR THE PACKAGING

WATER SPRAY.
CARBON DIOXIDE, DRY CHEMICAL POWDER OR APPROPRIATE FOAM.

TOXIC GASES PRODUCED BY WIRE:

COPPER & COPPER OXIDES FUMES
ZINC & ZINC OXIDES FUMES

TOXIC GASES PRODUCED BY THE PACKAGING:

POLYETHYLENE

EMITS TOXIC FUMES UNDER FIRE CONDITIONS.
THIS MATERIAL, IN POWDER FORM, IS CAPABLE OF CREATING A DUST EXPLOSION.

POLYAMIDE

THERMAL DECOMPOSITION PRODUCTS MAY INCLUDE CARBON OXIDES, NITROGEN OXIDES, AND HYDROGEN CYANIDE.

POLYESTER

DECOMPOSITION PRODUCTS INCLUDE CARBON OXIDES, ALDEHYDES, TEREPHTHALIC ACID

POLYSTYRENE

CARBON DIOXIDE, CARBON MONOXIDE

UNUSUAL FIRE AND EXPLOSION HAZARDS

WIRE	ZINC REACTS VIOLENTLY WITH WATER LIBERATING AND IGNITING HYDROGEN. MAY EXPLODE IF IN POWDER FORM.
PACKAGING	MAY EXPLODE IF IN POWDER FORM UNDER FIRE CONDITIONS, MATERIAL MAY DECOMPOSE TO FORM FLAMMABLE AND/OR EXPLOSIVE MIXTURES IN AIR. STATIC ELECTRICAL CHARGE MAY BUILD UP ON THE PLASTIC PACKAGING, AND START A FIRE IF A SPARK OCCURS IN A FLAMABLE ATMOSPHERE.

5. HEALTH HAZARD DATA

PRODUCT IS A SOLID MASS, HOWEVER, WARNINGS ARE BASED ON INHALATION DUST, MIST OR FUME EMISSIONS THAT ARE POSSIBLE DURING MANUFACTURING OR CHEMICAL REACTIONS.

PRIMARY ROUTES OF ENTRY: SKIN CONTACT

5.1 EMERGENCY AND FIRST AID PROCEDURES

INGESTION: IF SWALLOWED AND THE PERSON IS CONSCIOUS, IMMEDIATELY GIVE LARGE AMOUNTS OF WATER. GET MEDICAL ATTENTION.
INHALATION: IF A PERSON BREATHES IN LARGE AMOUNTS, MOVE THE EXPOSED PERSON TO FRESH AIR. GET MEDICAL ATTENTION.
EYE CONTACT: IMMEDIATELY FLUSH WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. GET MEDICAL ATTENTION.
SKIN CONTACT: IMMEDIATELY WASH WITH PLENTY OF SOAP AND WATER FOR AT LEAST 15 MINUTES. IMMEDIATELY REMOVE CONTAMINATED CLOTHING AND SHOES. WASH CLOTHING BEFORE RE-USE.

5.2 WIRE

THRESHOLD LIMIT VALUE (TLV/TWA):

COPPER: 1 mg/m3
ZINC 10 mg/m3

CARCINOGENICITY:

COPPER:	NTP:NO	IARC:NO	Z LIST: NO	OSHA REG : NO
ZINC:	NTP:NO	IARC:NO	Z LIST: NO	OSHA REG : NO

TARGET ORGANS

NONE IDENTIFIED

EFFECT OF OVEREXPOSURE

COPPER: DUST MAY CAUSE SNEEZING AND COUGHING.
DUST MAY IRRITATE SKIN OR EYES.
PROLONGED EXPOSURE MAY CAUSE DERMATITIS.
INGESTION MAY CAUSE NAUSEA, VOMITING, HEADACHES, DIZZINESS, GASTROINTESTINAL IRRITATION.

ZINC: CONTACT WITH SKIN OR EYES MAY CAUSE IRRITATION OR BURNS.
INHALATION OF DUST MAY CAUSE IRRITATION TO UPPER RESPIRATORY TRACT.
PROLONGED EXPOSURE MAY CAUSE DERMATITIS

5.3 PACKAGING

DO NOT EAT THE DESICANT SACHET OR ITS CONTENT!

ACUTE EFFECTS

MAY BE HARMFUL BY INHALATION, INGESTION, OR SKIN ABSORPTION.
MAY CAUSE EYE IRRITATION.
MAY CAUSE SKIN IRRITATION.
MATERIAL MAY BE IRRITATING TO MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT.

EXPOSURE TO THERMAL DECOMPOSITION PRODUCTS CAN CAUSE "POLYMER FUME FEVER", A TEMPORARY FLU-LIKE CONDITION WHICH USUALLY APPEARS SEVERAL HOURS AFTER EXPOSURE AND PASSES WITHIN 36-48 HOURS.

TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL, PHYSICAL, AND TOXICOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY INVESTIGATED.

TARGET ORGANS

POLYETHYLENE: TUMORIGENIC	IARC CANCER REVIEW GROUP 3
POLYAMIDE : TUMORIGENIC	IARC CANCER REVIEW GROUP 3
POLYSTYRENE: TUMORIGENIC	IARC CANCER REVIEW GROUP 3

6: REACTIVITY DATA

COPPER

STABILITY:	STABLE
HAZARDOUS POLYMERIZATION:	WILL NOT OCCUR
CONDITIONS TO AVOID:	MOISTURE
INCOMPATIBLES:	STRONG ACIDS, ACTIVE HALOGEN COMPOUNDS, CHLORINE, FLUORINE, IODINE, BROMINE, AMMONIA
DECOMPOSITION PRODUCTS:	COPPER AND COPPER OXYDES FUMES

ZINC

STABILITY:	UNSTABLE
HAZARDOUS POLYMERIZATION:	WILL NOT OCCUR
CONDITIONS TO AVOID:	MOISTURE
INCOMPATIBLES:	STRONG ACIDS, STRONG BASES, STRONG OXIDIZING AGENTS, ALKALI METALS, HALOGENATED HYDROCARBONS
DECOMPOSITION PRODUCTS:	ZINC OXIDE FUMES

PACKAGING

STABILITY

STABLE UNDER ORDINARY CONDITIONS OF USE AND STORAGE.

INCOMPATIBLES

STRONG ACIDS, STRONG BASES,
STRONG OXIDIZING AGENTS, ALKALI METALS,
REDUCING AGENTS
HALOGENATED HYDROCARBONS.
DISSOLVED BY CRESOL, PHENOL, STRONG ACIDS

DECOMPOSITION PRODUCTS FOR THE PACKAGING

CARBON MONOXIDE, CARBON DIOXIDE
OXIDES OF NITROGEN
ACROLEIN
FORMALDEHYDE
TEREPHTHALIC ACID

7: SPILL AND DISPOSAL PROCEDURE

STEPS TO BE TAKEN IN THE EVENT OF A SPILL OR DISCHARGE

WEAR SUITABLE PROTECTIVE CLOTHING. CAREFULLY SWEEP UP AND REMOVE.

DISPOSAL PROCEDURE

DISPOSE OR RECYCLE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL ENVIRONMENTAL REGULATIONS.

NON BIODEGRADABLE MATERIALS

8 : PROTECTIVE EQPUIPEMENT

EYE/SKIN PROTECTION:

SAFETY GLASSES WITH SIDESHIELDS.
PROTECTIVE GLOVES ARE RECOMMENDED.
AVOID PROLONGED OR REPEATED EXPOSURE.
WASH THOROUGHLY AFTER HANDLING.

PRODUCT IS A SOLID MASS, HOWEVER, WARNINGS ARE BASED ON INHALATION DUST, MIST OR FUME EMISSIONS THAT ARE POSSIBLE DURING MANUFACTURING OR CHEMICAL REACTIONS.

VENTILATION:

USE GENERAL OR LOCAL EXHAUST VENTILATION TO MEET TLV REQUIREMENTS. DO NOT BREATHE DUST.

RESPIRATORY PROTECTION:

NONE REQUIRED WHERE ADEQUATE VENTILATION CONDITIONS EXIST. IF AIRBORNE CONCENTRATION EXCEEDS TLV, A DUST/MIST RESPIRATOR IS RECOMMENDED. IF CONCENTRATION EXCEEDS CAPACITY OF RESPIRATOR, A SELF-CONTAINED BREATHING APPARATUS IS ADVISED.

9: STORAGE, HANDLING, AND TRANSPORTATION

SPECIAL PRECAUTIONS

KEEP CONTAINER TIGHTLY CLOSED, SUITABLE FOR ANY GENERAL CHEMICAL STORAGE AREA.

KEEP OFF HUMIDITY

DO NOT STORE NEAR CORROSIVE SUBSTANCES.

DO NOT STORE NEAR AMMONIA-CONTAINING PRODUCTS (IE CLEANING AGENTS): WIRES PERFORMANCE WILL BE AFFECTED.

DO NOT STORE NEAR HEAT SPRING

STORE IN A COOL DRY PLACE.

HANDLING & TRANSPORTATION

WIRE SPOOLS ARE HEAVY (>1KG). THEY WILL CAUSE SERIOUS INJURIES IF THEY FALL ON OR SHOCK HUMAN BODIES.

AVOID STRESSES AND SHOCKS WHICH WILL DAMAGE SPOOLS OR THEIR ORIGINAL PACKAGING.

AVOID EYE CONTACT AND PROLONGED SKIN CONTACT.
WORKERS SHOULD WASH HANDS THOROUGHLY WITH SOAP AND WATER PRIOR TO EATING, DRINKING, SMOKING, AND USING LAVATORY.

WIRES MAY PERFORATE SKIN AND PENETRATE INTO BODIES.
PACKAGINGS MAY SCRATCH OR CUT SKIN.

A MAXIMUM STORAGE PERIOD OF ONE YEAR IS RECOMMENDED BETWEEN PRODUCTION AND USAGE OF THE WIRE FOR ELECTRICAL DISCHARGE MACHINING. PRODUCTION DATE CAN BE READ ON SPOOLS LABELS. THE FIRST 5 DIGITS (IN CASE OF BRASS WIRE) OR 7 DIGITS (FOR ZINC PLATED BRASS WIRE) CORRESPOND TO THE BATCH NUMBER, THE NEXT 2, TO THE WEEK NUMBER (01 TO 52), THE NEXT 2, TO THE YEAR NUMBER (03 FOR 2003). THE NEXT FIGURES ARE THERE FOR FURTHER TRACABILITY PURPOSES.

THUS, 08012L 2008 TZ05 MEANS THE SPOOL HAS BEEN PRODUCED IN WEEK 20 OF YEAR 2008. FOR BETTER PERFORMANCE, IT IS RECOMMENDED TO USE THIS SPOOL BEFORE WEEK 20 OF YEAR 2009.