



MATERIAL SAFETY DATA SHEET

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SECTION 1 – PRODUCT IDENTIFICATION AND USE

ALLOY: **LEAD FREE METAL SOLDER ALLOYS**

TRANSPORT EMERGENCY # 1-800-535-5053 INFOTRAC

SECTION 2 INGREDIENTS AND HAZARDS

CHEMICAL NAME	CAS #	% W/W	OSHA PEL - TWA
TIN	7440-31-5	0 - 99.9	2.0mg/m3
SILVER	7440-22-4	0 - 25	0.01mg/m3
ANTIMONY	7440-36-0	0 - 40	0.5mg/m3
BISMUTH	7440-69-9	0 - 60	N/E
ZINC	7440-66-6	0 - 20	N/E
COPPER	7440-50-8	0 - 20	0.1mg/m3 (fume) 1.0 mg/m3 (dusts & mists as CU)
INDIUM	7400-74-6	0 - 50	0.1mg/m3
ALUMINIUM	7429-90-50	0 - 4	10mg/m3

PRODUCT CONTAINS ONE OR MORE OF THESE METALLIC ELEMENTS IN VARYING PERCENTAGES. SEE PRODUCT LABEL FOR EXACT COMPOSTION.

SECTION 3 – HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: MODERATE EYE IRRITANT. WILL NOT BURN. TOXIC BY INHALATION. GASTROINTESTINAL TRACT IRRITANT. RESPIRATORY TRACT IRRITANT. CAUSES SKIN IRRITATION.

HMIS RATING SYSTEM:
Health: 2 ; Flammability: 0 ; Reactivity: 0 ; Protection: B

NFPA RATING SYSTEM:
Health 2 ; Flammability 0 ; Reactivity 0

ROUTES OF ENTRY: INHALATION; INGESTION; SKIN CONTACT; EYE CONTACT;
ABSORPTOIN

TARGET ORGANS: BLOOD; DIGESTIVE TRACT; KIDNEYS; NERVOUS SYSTEM
MEDICAL CONDITIONS AGGRAVATED: DIGESTIVE TRACT DISEASE; KIDNEY DISEASE

IMMEDIATE (ACUTE) SYMPTOMS OVER-EXPOSURE BY ROUTE OF EXPOSURE:
INHALATION: CAN CAUSE MODERATE RESPIRATORY IRRITATION, DIZZINESS, WEAKNESS, FATIGUE, NAUSEA AND HEADACHE.
EYES: CAN CAUSE MODERATE IRRITATION, TEARING AND REDDENTING, BUT NOT LIKELY TO PERMENENTLY INJURE EYE TISSUE.
SKIN CONTACT: CAN CAUSE SLIGHT IRRITATION
INGESTION: IRRITATING TO MOUTH, THROAT AND STOMACH. CAN CAUSE ABDOMINAL DISCOMFORT, NAUSEA, VOMITING AND DIARRHEA.

LONG TERM (CHRONIC) HEALTH EFFECTS:

REPRODUCTION: SEE SECTION 11 OF THIS MSDS.
MUTACENICITY: SEE SECTOIN 11 OF THIS MSDS.

SECTION 4 – FIRST AID MEASURE

SKIN EXPOSURE: WASH WITH SOAP AND WATER. REMOVE CONTAMINATED CLOTHING AND LAUNDRY. GET MEDICAL ATTENTION IF IRRITATION DEVELOPS OR PERSISTS.

EYE EXPOSURE: FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 20 MINUTES. RETRACTING EYELIDS OFTEN. TILT THE HEAD TO PREVENT CHEMICAL FROM TRANSFERRING TO THE UNCONTAMINATED EYE. GET IMMEDIATE MEDICAL ATTENTION.

INHALATION: REMOVE TO FRESH AIR. IF BREATHING IS DIFFICULT, HAVE A TRAINED INDIVIDUAL ADMINISTER OXYGEN. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION AND HAVE A TRAINED INDIVIDUAL ADMINISTER OXYGEN. GET MEDICAL ATTENTION IMMEDIATELY.

INGESTION: SEEK MEDICAL ATTENTION IMMEDIATELY.

NOTES TO DOCTOR: NO ADDITIONAL FIRST AID INFORMATION AVAILABLE.

SECTION 5 – FIRE FIGHTING MEASURES

FLAMMABILITY SUMMARY: NOT COMBUSTIBLE

FLASH POINT: N/A

AUTOIGNITION TEMPERATURE: N/E

EXPLOSIVE LIMITS % IN AIR: N/E

FIRE FIGHTING METHODS: WILL NOT BURN, NO SPECIAL INSTRUCTIONS AVAILABLE. USE METHODS APPROPRIATE FOR SURROUNDING MATERIALS.

HAZARDOUS COMBUSTION PRODUCTS: METAL FUMES; TOXIC FUMES.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

PRECAUTIONS AND EQUIPMENT: EXPOSURE TO THE SPILLED MATERIAL MAY BE IRRITATING OR HARMFUL. FOLLOW PERSONAL PROTECTIVE EQUIPMENT RECOMMENDATIONS FOUND IN SECTION VIII OF THIS MSDS

METHODS FOR CLEAN-UP: WEAR COMPLETE AND PROPER PERSONAL PROTECTIVE EQUIPMENT FOLLOWING THE RECOMMENDATION OF SECTION VIII GATHER AND STORE IN A SEALED CONTAINER PENDING A WASTE DISPOSAL EVALUATION. DO NOT USE BROOM OR AIR CLEANING ETC.

SECTION 7 – HANDLING AND STORAGE

HANDLING MEASURES: HARMFUL OR IRRITATING MATERIAL. AVOID CONTACTING AND AVOID BREATHING THE MATERIAL. USE ONLY IN A WELL VENTILATED AREA. AS WITH ALL CHEMICALS, GOOD INDUSTRIAL HYGIENE PRACTICES SHOULD BE FOLLOWED WHEN HANDLING THIS MATERIAL. AVOID CONTACT WITH MATERIAL. AVOID BREATHING DUSTS OR FUMES. USE ONLY IN A WELL VENTILATED AREA. WASH THOROUGHLY AFTER HANDLING; WASH HANDS BEFORE EATING; DO NOT GET IN EYES, ON SKIN AND CLOTHING; MINIMIZE DUST GENERATION AND ACCUMULATION; REMOVE CONTAMINATED CLOTHING AND WASH BEFORE REUSE.

STORAGE MEASURES: NO SPECIAL REQUIREMENT. STORE IN A TIGHTLY CLOSED CONTAINER; KEEP AWAY FROM FOOD AND DRINKING WATER. STORE IN A COOL DRY PLACE; KEEP AWAY FROM HEAT, SPARKS, AND FLAME: KEEP UNDER A NITROGEN BLANKET

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

ENGINEERING MEASURES:	USE LOCAL EXHAUST VENTILATION OR OTHER ENGINEERING CONTROLS TO MINIMIZE EXPOSURE AND MAINTAIN OPERATOR COMFORT. ENGINEERING CONTROLS MUST BE DESIGNED TO MEET THE OSHA CHEMICAL SPECIFIC STANDARD IN 29 CFR 1910. VENTILATION IS REQUIRED TO MAINTAIN OPERATOR EXPOSURE BELOW PUBLISHED EXPOURE LIMITS. USE PROCESS ENCLOSURES, LOCAL EXHAUST VENTILATION, OR OTHER ENGINEERING CONTORLS TO CONTROL AIRBORNE LEVELS BELOW RECOMMEDD EXPOSURE LIMITS; EXPLOSINO PROOF EXHAUST VENTILATION SHOULD BE USED. FACILITIES STORING OR USING THIS MATERIAL SHOULD BE EQUIPPED WITH AN EYEWAH AND SAFETY SHOWER.		
RESPIRATORY PROTECTION:	RESPIRATORY PROTECTOIN MAY BE REQUIRED TO AVOID OVEREXPOSURE WHEN HANDLING THIS PRODUCT. GENERAL OR LOCAL EXHAUST VENTILATION IS THE PREFERRED MEANS OF PROTECTION. USE ARESPIRATOR IF GENERAL ROOM VENTILATION IS NOT AVAILABLE OR SUFFICIENT TO ELIMINATE SYMPTOMS. FOLLOW A RESPIATORY PROTECTION PROGRAM THAT MEETS 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS WHENEVER WORK PLACE CONDITIONS WARRANT THE USE OF A RESPIRATOR. WEAR A NIOSH APPROVED RESPIRATOR IF ANY EXPOSURE IS POSSIBLE.		
EYE PROTECTION:	WEAR CHEMICALLY RESISTANT SAFETY GLASSED WITH SIDE SHIELDS WHEN HANKLING THIS PRODUCT. DO NOT WEAR CONTACT LENSES.		
SKIN PROTECTION:	WEAR PROTECTIVE GLOVES. INSPECT GLOVES FOR CHEMICAL BREAK-THROUGH AND REPLACE AT REGULAR INTERVALS.. CLEAN PROTECTIVE EQUIPMENT REGULARLY. WASH HAND AND OTHER EXPOSED AREAS WITH MILD SOAP AND WATER BEFORE EATING, DRINKING, AND LEAVING WORK. WHERE CONTACT IS LIKELY, WEAR CHEMICAL RESISTANT GLOVES, A CHEMICLA SUIT, RUBBER BOOTS, AND CHEMICAL SAFETY GOGGLES PLUS A FACE SHIELD.		
CONTROL PARAMETERS:	-----ACGIH EXPOSURE LIMITS-----		
CHEMICLA NAME	TLV-TWA	STEL	CEILING
TIN	2mg/m3 TWA		
SILVER	0.1mg/m3		
ANTIMONY	0.5mg/m3 TWA		
BISMUTH	N/E		
ZINC	N/E		
COPPER	1 mg/m3		
	0.1mg/m3 (as copper fume)		
INDIUM	0.1mg/m3		

SECTION 9– PHYSICAL AND CHEMICAL PROPERTIES

COLOR:	GREY
ODOR:	NONE
ph:	N/A
SOLUBILITY IN WATER:	NEGLIGIBLE; 0-1%

OTHER PHYSICLA AND CHEMICAL PROPERTIES DEPEND ON ALLOY COMPOSTION.

SECTION 10 – STABILITY AND REACTIVITY

DECOMPOSTION PRODUCTS:	METAL FUMES; TOXIC FUMES.
INCOMPATIBLE MATERIALS:	PEROXIDES; METALS; STRONG ACIDS; STRONG OXIDIZING AGENTS; STRONG REDUCING AGENTS; ACIDS; CHLORING; MOISTURE; STRONG ALKALIES
CONDITOINS TO AVOID:	NONE KNOWN
CONTAMIANATION:	CONTACT WITH AIR. CONTACT WITH WATER.

SECTION 11 – TOXICOLOGICAL INFORMATION

INHALATION AND INGESTION: INGESTION OF DUST OR FUME MUST BE AVOIDED
ANTIMONY: ANTIMONY IS TOXIC AND DUST OR FUME CAN CAUSE NASAL SEPTAL ULCERATION AND STOMACH LINING IRRITATION.
TIN: TIN IS NOT REGARDED AS TOXIC BUT EXCESSIVE EXPOSURE CAN CAUSE FEVER, NAUSEA, STOMACH CRAMPS OR DIARRHEA. EXPECTED TO BE SIGNIFICANT IN COMPARISON WITH OTHER METALS PRESENT
COPPER: COPPER DUST AND FUME AFFECT THE RESPIRATORY SYSTEM, LUNGS, SKIN, LIVER AND EYES
ZINC & BISMUTH: ZINC AND BISMUTH ARE NOT CONSIDERED HAZARDOUS
SILVER: SILVER MAY CAUSE DISCOLORATION OF EYES AND SKIN (ARGYRIA)
INDIUM: INDIUM IS NOT REGARDED AS TOXIC BUT EXCESSIVE EXPOSURE CAN CAUSE FEVER, NAUSEA, STOMACH CRAMPS OR DIARRHEA.
ALUMINUM: INGESTION OF DUST FUME MAY IRRITATE THE LINING OF THE STOMACH WITH SYSTEMS OF FEVER, CRAMPS OR DIARRHEA.

SECTION 12 – ECOLOGICAL INFORMATION

OVERVIEW: ECOLOGICAL HAZARD. IN HIGH CONCENTRATIONS, THIS PRODUCT MAY BE DANGEROUS TO PLANTS AND/OR WILDLIFE.

SECTION 13 – DISPOSAL CONSIDERATIONS

WASTE DESCRIPTION: RETURN TO SUPPLIER TO BE RECYCLED FOR METAL UNIT VALUE. SPENT OR DISCARDED MATERIAL IS PROBABLY A HAZARDOUS WASTE.
DISPOAL METHODS: DISPOSE OF IN ACCORDANCE WITH FEDERAL, STATE LOCAL ORE PROVINCIAL LAWS AND REGULATIONS

SECTION 14 – TRANSPORT INFORMATION

SHIPPING BASIC DESCRIPTION: DOT & IATA: NOT RESTRICTED UNLESS IN FINE PARTICALE SIZE LESS THAN 0.004 INCHES IN DIAMETER. DEPENDS ON ALLOY. CONSULT LABEL OR MANUFACTURER FOR ADDITIONAL INFORMATION.

SECTION 15 – REGULATORY INFORMATION

TSCA STATUS: ALL COMPONENTS OF THIS PRODUCT ARE LISTED ON THE TSCA INVENTORY OF EXISTING CHEMICAL SUBSTANCES.

REGULATED CHEMICALS:

CHEMICAL NAME		REGULATION
SILVER	7440-22-4	SARA 313
ANTIMONY	7440-36-0	SARA 313
ZINC	7440-66-6	SARA 313
COPPER	7440-50-8	SARA 313

SECTION 16 – OTHER INFORMATION

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