

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: TIN-ALL FREE LEAD FREE SOLDERING POWDER
CHEMICAL FAMILY: INORGANIC FLUX - METAL HALIDE
PHYSICAL HAZARD: REACTIVE
HEALTH HAZARD: CORROSIVE, EYE & SKIN HAZARD
HAZARD RATINGS: HEALTH: 3
FLAMMABILITY: 0
REACTIVITY: 1

NUMBER: DMN-197
REVISED: 5/16/01

DAMON INDUSTRIES INC.
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24 HOUR EMERGENCY ONLY PHONE: 1-800-535-5053

0 = Insignificant
1 = Slight
2 = Moderate
3 = Serious
4 = Severe

INFORMATION PHONES: 1-800-362-9850 OR 330-821-5310
FAX: 330-821-5563

D.O.T. HAZARD CLASS: ZINC CHLORIDE, ANHYDROUS, 8, UN2331, P.G. III.

SECTION 2 - HAZARDOUS INGREDIENTS

INGREDIENT	CAS NO.	PERCENT	TWA	STEL	CEILING
AMMONIUM CHLORIDE FUME	12125-02-9	2 - 10%	10 mg/m ³	20 mg/m ³	-
COPPER (FUME)	7440-50-8	1 - 2%	.1 mg/m ³	.2 mg/m ³	-
TIN	7440-31-5	30 - 60%	2 mg/m ³	2 mg/m ³	-
ZINC CHLORIDE FUME	7646-85-71	30 - 60%	1 mg/m ³	2 mg/m ³	-

THE BALANCE OF INGREDIENTS ARE NOT CONSIDERED HAZARDOUS UNDER CFR 29 1910.1200.

NONE OF THE INGREDIENTS ARE LISTED AS CARCINOGENS BY N.T.P., I.A.R.C. OR OSHA.

SECTION 3 - PHYSICAL DATA

BOILING POINT: 330° F.
VAPOR PRESSURE: NOT APPLICABLE
PERCENT VOLATILES: NOT APPLICABLE
VAPOR DENSITY: NOT APPLICABLE
EVAPORATION RATE: NOT APPLICABLE
SOLUBILITY IN WATER: ALL BUT SOLDER IS SOLUBLE.
APPEARANCE AND ODOR: GRAY HEAVY POWDER WITH NO ODOR.

SPECIFIC GRAVITY: 1.4
pH: 0.0 ± 0.5

SECTION 4 - FIRE AND EXPLOSION DATA

FLASH POINT: NONE
LOWER EXPLOSIVE LIMIT: NOT APPLICABLE
UPPER EXPLOSIVE LIMIT: NOT APPLICABLE
EXTINGUISHING MEDIA: NOT APPLICABLE
SPECIAL FIRE FIGHTING PROCEDURES: NONE
UNUSUAL FIRE AND EXPLOSION HAZARDS: MAY RELEASE HYDROGEN CHLORIDE, AMMONIA, ZINC OXIDE, ETC. IF INVOLVED IN FIRE.

SECTION 5 - REACTIVITY DATA

STABILITY: STABLE
INCOMPATIBILITY: STRONG ALKALIS, OXIDIZERS.
HAZARDOUS DECOMPOSITION PRODUCTS: HYDROGEN CHLORIDE, AMMONIA, ZINC OXIDE.
HAZARDOUS POLYMERIZATION: WILL NOT OCCUR.

SECTION 6 - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE (TLV): NONE KNOWN
PRIMARY ROUTES OF ENTRY:
 THROUGH SKIN INHALATION INGESTION

EFFECTS OF OVEREXPOSURE:
BREATHING - FUMES FROM SOLDERING CONTAIN AMMONIUM CHLORIDE, ZINC CHLORIDE AND POSSIBLY SMALL AMOUNTS OF TIN AND COPPER. FUMES CAUSE RESPIRATORY IRRITATION.

EYES - CAUSES IRRITATION, REDNESS AND MAY CAUSE EYE DAMAGE.

SKIN - CAUSES IRRITATION, REDDENING, DERMATITIS, POSSIBLE SENSITIZATION. PROLONGED CONTACT CAN CAUSE SKIN DAMAGE.

SWALLOWING - MAY RESULT IN SEVERE DAMAGE TO MUCOUS MEMBRANES.

FIRST AID PROCEDURES:

EYE CONTACT: IMMEDIATELY FLUSH WITH LARGE AMOUNTS OF WATER FOR AT LEAST 15 MINUTES, LIFTING UPPER AND LOWER LIDS OCCASIONALLY. GET MEDICAL ATTENTION IMMEDIATELY.

SKIN CONTACT: IMMEDIATELY FLUSH EXPOSED AREA WITH WATER FOR AT LEAST 15 MINUTES. IF IRRITATION PERSISTS, GET MEDICAL ATTENTION. REMOVE CONTAMINATED CLOTHING AND LAUNDRY BEFORE RE-USE.

INGESTION: IF THIS PRODUCT IS SWALLOWED DO NOT INDUCE VOMITING. IF AFFECTED PERSON IS CONSCIOUS, GIVE TWO GLASSES OF WATER TO DRINK. GET MEDICAL ATTENTION IMMEDIATELY. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. TREAT FOR SHOCK BY KEEPING WARM AND QUIET.

INHALATION: IF AFFECTED, REMOVE INDIVIDUAL TO FRESH AIR. IF BREATHING IS DIFFICULT, ADMINISTER OXYGEN. IF BREATHING HAS STOPPED GIVE ARTIFICIAL RESPIRATION. KEEP PERSON WARM AND GET MEDICAL ATTENTION.

SECTION 7 - SPECIAL PRECAUTIONS

SPILL/LEAK PROCEDURES

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: EMPTY CONTAINERS RETAIN PRODUCT RESIDUE AND MAY BE HAZARDOUS. OBSERVE ALL PRECAUTIONS GIVEN IN THIS DATA SHEET.

DO NOT EAT OR SMOKE IN AREAS WHERE PRODUCT IS USED.

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: SCOOP UP MATERIAL INTO CLEAN CONTAINER. WASH RESIDUE TO SEWER WITH PLENTY OF WATER. IN SOME LOCALITIES EVEN SMALL AMOUNTS OF COPPER AND ZINC ARE PROHIBITED FROM ENTERING SEWERS. COMPLY WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.

WASTE DISPOSAL METHOD: IF PRODUCT CAN NOT BE USED, DISPOSE OF AT A CHEMICAL LANDFILL IN COMPLIANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

SECTION 8 - PROTECTIVE EQUIPMENT

RESPIRATORY PROTECTION: IF FUMES EXCEED OSHA LIMITS FOR ANY INGREDIENT, AN OSHA APPROVED BREATHING APPARATUS OR RESPIRATOR SHOULD BE USED.

VENTILATION: PROVIDE SUFFICIENT MECHANICAL (GENERAL) AND/OR LOCAL EXHAUST TO MAINTAIN EXPOSURE TO FUMES BELOW OSHA LIMITS. IT IS HIGHLY RECOMMENDED THAT AN ELECTROSTATIC PRECIPITATOR AND/OR LOCAL EXHAUST BE USED TO REMOVE AIRBORNE ZINC FUMES.

PROTECTIVE GLOVES: WEAR RESISTANT GLOVES SUCH AS: NEOPRENE.

EYE PROTECTION: SAFETY GLASSES, OR CHEMICAL GOGGLES IN COMPLIANCE WITH OSHA REGULATIONS.

OTHER PROTECTIVE EQUIPMENT: IMPERVIOUS CLOTHING OR APRON, BOOTS.

THE COMPONENTS OF THIS PRODUCT ARE ON THE TSCA INVENTORY OF CHEMICAL SUBSTANCES.

THE INFORMATION ACCUMULATED HEREIN IS BELIEVED TO BE ACCURATE BUT IS NOT WARRANTED TO BE. RECIPIENTS ARE ADVISED TO CONFIRM IN ADVANCE THAT THE INFORMATION IS CURRENT, APPLICABLE, AND SUITABLE TO THEIR CIRCUMSTANCES.

SECTION 313 SUPPLIER NOTIFICATION

THIS PRODUCT CONTAINS THE FOLLOWING TOXIC CHEMICALS SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF THE EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT OF 1986 AND OF CFR 372:

CHEMICAL NAME	CAS#	% BY WEIGHT	LBS/GAL (If sold by gallons)
ZINC CHLORIDE	7646-85-71	55%	
COPPER	7440-50-8	1.55%	