



NORTH CHICAGO REFINERS & SMELTERS

DIVISION OF R. LAVIN & SONS, INC.
2028 SHERIDAN ROAD
NORTH CHICAGO, ILLINOIS 60064

MSDS REFERENCE

NC 42

EMERGENCY TELEPHONE

708 689 4300

Material Safety Data Sheet

I PRODUCT IDENTIFICATION

DATE ISSUED: NOV 1, 1991

COMMON NAME

NON-FERROUS BRASS & BRONZE INGOT

FORMULA

CU - SI - ZN

ALLOY NAMES & NUMBERS

LAVIN	CDA	SAE	ALLOY NAMES	
500	874	-	SILICON BRASS	88-3-14
500	875	-	13B SILICON BRASS	82-4-14
500	875	-	145 SILICON BRASS	82-4-14
500	876	-	LOW ZINC SILICON BRASS	90-5-5
500	878	-	DIE CAST SILICON BRASS	82-4-14
500	879	-	YELLOW SILICON BRASS	65-1-34
500	-	-	HERCULOY	91-5-4

II HAZARDOUS INGREDIENTS

	%	ACGIH 8-HR TWA MG/M3	OSHA 8-HR PEL MG/M3
* COPPER (CAS 7440-50-8)	63 - 90	.2 (FUME)	.1 (FUME)
SILICON (CAS 7440-21-3)	1 - 5	15. (TOTAL DUST) 5. (RESP. DUST)	10. (TOTAL DUST) 5. (RESP. DUST)
* ZINC (CAS 7440-66-6)	4 - 34	5. (OXIDE)	5. (FUME)

(*) SEE SECTION X
(#) SEE SECTION X

ACIGH/OSHA STEL MG/M3:	ZN	
	10.	X

III PHYSICAL DATA

BOILING POINT (F°)	SOLUBLE IN WATER; NA	SPECIFIC GRAVITY (H ₂ O=1)	8.3 - 8.5
CU 4703°	VAPOR PRESSURE : NA	% VOLATILE BY VOLUME:	NA
SI 4860°	VAPOR DENSITY : NA		
ZN 1663°			

MOLTEN STATE OPERATING TEMPERATURES ARE 1900 TO 2150° F.
IN THIS RANGE ONLY ZN BOILS OFF FORMING ZINC OXIDE.

APPEARANCE & ODOR:

ODORLESS YELLOW METAL

IV HEALTH HAZARD INFORMATION

TWA/PEL: SEE SECTION II

THERE ARE TWO MAJOR MEANS OF METAL ABSORPTION, NAMELY, INHALATION AND INJECTION. THESE PRODUCTS IN THEIR NATURAL STATE DO NOT PRESENT AN INHALATION, INJECTION OR CONTACT HEALTH HAZARD. OPERATIONS SUCH AS BURNING, SAWING, BRAZING, GRINDING, MELTING AND MACHINING, WHICH RESULT IN ELEVATING THE TEMPERATURE TO OR ABOVE THE MELTING POINT OR RESULTS IN THE GENERATION OF AIRBORNE PARTICULATES MAY PRESENT HAZARDS. MOST INHALATION PROBLEMS CAN BE PREVENTED WITH ADEQUATE USE OF VENTILATION AND NIOSH/MSHA APPROVED RESPIRATOR. FOOD AND DRINK SHOULD NOT BE CONSUMED OR TOBACCO PRODUCTS USED, NOR COSMETICS APPLIED IN AREAS WHERE METAL EXPOSURE EXCEED APPLICABLE LIMITS. WASH THOROUGHLY AFTER HANDLING AND BEFORE EATING, DRINKING OR SMOKING.

COPPER EFFECTS & EXPOSURE: COPPER FUME FROM MELTING OR THERMAL CUTTING CAN AFFECT THE BODY IF INHALED OR IF IT COMES IN CONTACT WITH THE EYES OR SKIN. DUST OR FUME CAN CAUSE IRRITATION OF THE EYES, NOSE AND THROAT AND A FLU-LIKE ILLNESS CALLED METAL FUME FEVER. IT MAY ALSO CAUSE A METALLIC OR SWEET TASTE IN THE MOUTH. REPEATED OR PROLONGED EXPOSURE MAY CAUSE DISCOLORATION OF THE SKIN AND HAIR. CHRONIC POISONING CAN RESULT IN WILSON'S DISEASE.
EMERGENCY & FIRST AID: REMOVE TO FRESH AIR. KEEP THE EFFECTED PERSON WARM AND AT REST. GET MEDICAL ATTENTION AS SOON AS POSSIBLE.

ZINC EFFECTS & EXPOSURE: ZINC OXIDE FUME CAN AFFECT THE BODY IF INHALED. EXPOSURE TO FUMES MAY CAUSE METAL FUME FEVER WITH THE ONSET OF SYMPTOMS DELAYED 4 TO 12 HOURS. SYMPTOMS INCLUDE IRRITATION OF THE NOSE, MOUTH AND THROAT, COUGH, STOMACH PAIN, HEADACHE, NAUSEA, VOMITING, METALLIC TASTE, CHILLS, FEVER AND PAIN IN THE JOINTS AND MUSCLES. THE ATTACK MAY LAST 6 TO 24 HOURS, BUT WILL GO AWAY.
EMERGENCY & FIRST AID: REMOVE TO FRESH AIR. IF BREATHING HAS STOPPED, PERFORM ARTIFICIAL RESPIRATION AND GET MEDICAL ATTENTION. THERE IS NO KNOWN TREATMENT AND NO KNOWN LASTING EFFECTS.

SILICON EFFECTS & EXPOSURE: SILICON METAL IS OF LOW TOXICITY IN COLD STATE LUMP FORM AND IS NOT DANGEROUS. HIGH CONCENTRATIONS OF DUST WILL CAUSE SOME IRRITATION TO THE EYES, NOSE AND THROAT. REPEATED OR PROLONGED EXPOSURE CAN LEAD TO SILICOSIS.
EMERGENCY & FIRST AID: REMOVE FROM EXPOSURE. FLUSH EYES AND SKIN WITH LARGE QUANTITIES OF WATER. NO RESIDUAL INJURY IS EXPECTED.

THE HAZARDS PRESENTED ABOVE ARE THOSE OF THE INDIVIDUAL COMPONENTS AS THE PRODUCT MIXTURE HAS NOT BEEN TESTED AS A WHOLE.

V FIRE & EXPLOSION DATA

<u>FLASH POINT:</u>	NA	<u>FLAMMABLE LIMIT (%V)</u>	<u>LOWER</u> NA	<u>UPPER</u> NA
<u>EXTINGUISHING MEDIA</u>	: DRY CHEMICALS, SAND OR CARBON DIOXIDE. DO NOT USE WATER WHERE MOLTEN METAL IS PRESENT.			
<u>SPECIAL FIRE FIGHTING PROCEDURES</u>	: USE NIOSH/MSHA APPROVED SELF-CONTAINED BREATHING APPARATUS AND FULL PROTECTIVE CLOTHING.			
<u>UNUSUAL FIRE & EXPLOSION HAZARDS</u>	: PRODUCT IS INERT IN SOLID FORM. FIRE & EXPLOSION HAZARDS ARE MODERATE WHEN MATERIAL IS IN THE FORM OF DUST. MOLTEN METAL PRODUCES FUME AND VAPOR WHICH MAY BE TOXIC.			

VI REACTIVITY DATA

<u>STABILITY :</u>	STABLE	<u>HAZARDOUS POLYMERIZATION:</u>	WILL NOT OCCUR
<u>INCOMPATIBILITY</u>	: STRONG OXIDIZERS, ACIDS MAY CAUSE HYDROGEN TO BE EVOLVED.		
<u>HAZARDOUS DECOMPOSITION PRODUCTS</u>	: HIGH TEMPERATURES MAY PRODUCE HEAVY METAL FUME OR VAPOR.		

VII SPILL/LEAK PROCEDURES

<u>STEPS TO BE TAKEN IN CASE MATERIAL IS SPILLED</u>	: NO SPECIAL PRECAUTIONS ARE NECESSARY FOR SPILLS OF BULK MATERIAL. DUSTY MATERIAL SHOULD BE VACUUMED OR WET SWEEPED. USE OF NIOSH/MSHA APPROVED RESPIRATOR ADVISED IF DRY SWEEPING.
<u>WASTE DISPOSAL METHOD</u>	: WASTE IS RECYCLED OR SENT TO AN APPROVED LAND FILL SITE IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS.

VIII CONTROL MEASURES

<u>RESPIRATORY PROTECTION:</u>	NIOSH/MSHA APPROVED RESPIRATOR FOR TOXIC DUST AND/OR FUME.
<u>VENTILATION</u>	: LOCAL AND/OR MECHANICAL EXHAUST.
<u>PROTECTIVE GLOVES</u>	: INDUSTRIAL TYPE.
<u>EYE PROTECTION</u>	: SAFETY GLASSES W/ SIDE SHIELD AND/OR FACE SCREEN.
<u>OTHER PROTECTION</u>	: FIRE RESISTANT CLOTHING, LEGGINGS DESIRABLE AROUND MELTING OPERATIONS.

IX SPECIAL PRECAUTIONS

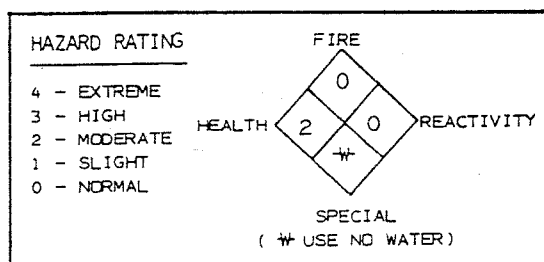
MATERIAL IN STORAGE CAN BECOME WET FROM CONDENSATION. IT MUST BE DRIED THOROUGHLY BEFORE ADDING TO MOLTEN METAL.

SINCE YOU MAY REDIRECT THIS PRODUCT TO MORE THAN ONE PLACE WITHIN YOUR LOCATION, PLEASE MAKE SURE THIS MSDS INFORMATION IS AVAILABLE TO ALL PERSONS USING THIS PRODUCT.

IF YOU REDISTRIBUTE THIS PRODUCT TO OTHER CUSTOMERS, AN MSDS SHOULD BE SENT TO THEM.

X ADDITIONAL INFORMATION

- (#) IARC INTERNATIONAL AGENCY FOR RESEARCH ON CANCER
NTP NATIONAL TOXICOLOGY PROGRAM
- (*) THE CHEMICALS IN THIS LIST MARKED WITH AN (*) ARE SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF TITLE III OF THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 IN 40 CFR, PART 372.
- (#) THE CHEMICALS ON THIS LIST MARKED WITH AN (#) ARE SUBJECT TO THE REPORTING REQUIREMENTS OF THE CALIFORNIA SAFE DRINKING WATER & TOXIC ENFORCEMENT ACT OF 1986.
- CHEMICALS KNOWN TO CAUSE CANCER NONE
CHEMICALS KNOWN TO CAUSE REPRODUCTIVE TOXICITY NONE



XI REFERENCES

- 'THRESHOLD LIMIT VALUES & BIOLOGICAL EXPOSURE INDICES FOR 1987-1988' (ISBN:0-936712-72-4)
AMERICAN CONFERENCE OF GOVERNMENTAL HYGIENISTS
- 'NIOSH GUIDE TO CHEMICAL HAZARDS' (DHHS-NIOSH NO 85-114)(2ND PRINTING)
- 'HANDBOOK OF HAZARDOUS MATERIALS' (LIBRARY OF CONGRESS 83-71356)(2ND EDITION)
ALLIANCE OF AMERICAN INSURERS
- 'NIOSH REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES' (DHHS-NIOSH NO 87-114)
- 'FOURTH ANNUAL REPORT ON CARCINOGENS' (NTP 85-002)
NATIONAL TOXICOLOGY PROGRAM
- 'MONOGRAPHS ON THE EVALUATION OF CARCINOGENIC RISK TO HUMANS' (SUPPLEMENT 7)
INTERNATIONAL AGENCY FOR RESEARCH ON CANCER
- 'CALIFORNIA PROPOSITION 65 HANDBOOK (2ND EDITION)
CALIFORNIA CHAMBER OF COMMERCE
- 'ENCYCLOPAEDIA OF OCCUPATIONAL HEALTH & SAFETY' (VOLUMES I & II)
INTERNATIONAL LABOUR OFFICE, GENEVA
- 'METALS HANDBOOK .. PROPERTIES OF METALS' (8TH EDITION - VOLUME 1)
AMERICAN SOCIETY OF METALS
- 'STANDARDS HANDBOOK' (PART 7)
COPPER DEVELOPMENT ASSOCIATION

IMPORTANT NOTICE

THE PRECEDING INFORMATION IS PROVIDED FOR THE SOLE PURPOSE OF ASSESSING POTENTIAL HAZARDS THAT MIGHT ARISE FROM THE USE OF THIS MATERIAL. THE SOURCES LISTED WERE REVIEWED TO DETERMINE THE HAZARD EVALUATIONS AND ARE CONSIDERED TO BE RELIABLE AND ACCURATE. THIS INFORMATION IS GIVEN IN GOOD FAITH AND IS CONSIDERED TO BE CORRECT, BUT WITHOUT GUARANTEE. WE DO NOT ASSUME RESPONSIBILITY FOR THE RESULTS OF ITS USE.