U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration

Form Approved
OMB No. 44-R1387

Nov. 25, 1985

MATERIAL SAFETY DATA SHEET

000410

Required under USDL Safety and Health Regulations for Ship Repairing, Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I

MANUFACTURER'S NAME	EMERGENCY TELEPHONE NO.
Willard Lead Products	704 523 1230
ADDRESS (Number, Street, City, State, and ZIP Code) 101 New Bern St. P.O. Box 11815 Charlotte, N.C 28220	
CHEMICAL NAME AND SYNONYMS	TRADE NAME AND SYNONYMS: Solder
CHEMICAL FAMILY	FORMULA: Tin/Lead Formulation to Specification

SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS			BASE METAL Lead (PB)	**	.05mg/M^3
CATALYST			ALLOYS Tin (SN)	**	10mg/M^3 *
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES	%	TLV (Units)
* as Tin Oxide		
** Specification Dependent		

SECTION III - PHYSICAL DATA

BOILING POINT (°F.)	Tin 4100 Lead 2984	SPECIFIC GRAVITY (H_2O=1)	Lead 11.35 Tin 5.75	**
VAPOR PRESSURE (mm Hg.)	Lead 750°F none 945°F .00006	PERCENT, VOLATILE BY VOLUME (%)		N/A
VAPOR DENSITY (AIR=1)	In 2718°F 1.0 N/A	EVAPORATION RATE (_____ =1)		N/A
SOLUBILITY IN WATER	None			
APPEARANCE AND ODOR	Gray to silver metallic - no odor			

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	N/A	FLAMMABLE LIMITS	Lel	Uel
EXTINGUISHING MEDIA	N/A			
SPECIAL FIRE FIGHTING PROCEDURES	N/A			
UNUSUAL FIRE AND EXPLOSION HAZARDS	none			

(Continued on reverse side)

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE
*Lead - .05mg/M^3 Tin 10mg/M^3 (as Tin Oxide)

EFFECTS OF OVEREXPOSURE Prolonged excessive absorption of inorganic lead by ingestion on inhalation of dust and fume is characterized by abdominal pain or what is sometimes referred to as "lead colic" - metallic taste in mouth, loss of weight, pain in muscles and muscular weakness. This similarity of symptoms with those of other illnesses require that excessive absorption of lead be verified by medical examination and analysis of biological specimens. Tin Oxide is a "nuisance dust".

EMERGENCY AND FIRST AID PROCEDURES: Skin: If molten, treat as burn.
Eyes: Flush with clean water. If molten treat as burn
Inhalation: Remove patient from area to fresh air. Refer to physician.
Ingestion: Water, vomit. Refer to physician.

SECTION VI - REACTIVITY DATA

STABILITY			CONDITIONS TO AVOID
	UNSTABLE		
	STABLE	X	

INCOMPATABILITY *(Materials to avoid)* Tin: Chlorine, Turpentine.
Lead: Strong Oxidizer, hydrogen peroxide, active metals- sodium, potassium.

HAZARDOUS DECOMPOSITION PRODUCTS

HAZARDOUS POLYMERIZATION			CONDITIONS TO AVOID
	MAY OCCUR		
	WILL NOT OCCUR	X	

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
When molten, allow to cool (solidify).

WASTE DISPOSAL METHOD
Return for salvage. Comply with applicable Federa, State & Local Regulations.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION *(Specify type)* If TLV(s) exceeded, see OSHA 29CFR 1910.1025 Table II (Lead) and/or 29CFR 1910.134 (Tin) (ANSI Z88.2-1969, NIOSH-BOM approved respirators only).

VENTILATION		
	LOCAL EXHAUST: ANSI Z9.2-1960 (fume hood over soldering area)	SPECIAL
	MECHANICAL *(General)*: ACGIH "Industrial Ventilation" 13th edition.	OTHER

PROTECTIVE GLOVES	EYE PROTECTION
Heat protective recommended	Safety glasses recommended.

OTHER PROTECTIVE EQUIPMENT
As required to meet applicable OSHA 29CFR 1910.1025(Lead) and/or 29CFR 1910.1000(Tin) when TLV(s) exceeded.

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING
.Wash hands after considerable handling.

No special storage required.

OTHER PRECAUTIONS
Do not permit smoking or eating while handling material. If TLV(s) exceeded, see .OSHA 29CFR 1910.1025(Lead); and/or 29 CFR 1910.1000 (Tin).

 *NOTE: At or above the "Action Level" (.03mg/M^3) 8 hr. TWA refer to applicable requirements of OSHA 29 CFR 1910.1025 (Lead).

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