MATERIAL SAFETY DATA SHEET
FOR
TECHNO-WELD LOW TEMPERATURE ALUMINIUM FUSION WELDING RODS AND MATERIAL

VENDEE AND THIRD PERSONS ASSUME THE RISK OF INJURY DIRECTLY OR INDIRECTLY CAUSED BY THE MATERIAL IF REASONABLE SAFETY PROCEDURES ARE NOT FOLLOWED AS PROVIDED FOR IN THE DATA SHEET, AND VENDOR SHALL NOT BE LIABLE FOR SUCH INJURY. FURTHERMORE, VENDOR SHALL NOT BE LIABLE FOR INJURY TO VENDEE OR THIRD PERSONS, DIRECTLY OR INDIRECTLY CAUSED BY ABNORMAL USE OF THE MATERIAL, EVEN IF REASONABLE SAFETY PRECAUTIONS ARE FOLLOWED.

ALL PERSONS USING THIS PRODUCT, ALL PERSONS WORKING IN AN AREA WHERE THIS PRODUCT IS USED, AND ALL PERSONS HANDLING THIS PRODUCT SHOULD BE FAMILIAR WITH THE CONTENT OF THIS DATA SHEET. POSTING THIS DOCUMENT FOR EMPLOYEE NOTIFICATION IS RECOMMENDED BY THE VENDOR AND MAY BE REQUIRED BY LAW.

Revision Date: 23/02/94

PRODUCT IDENTIFICATION

Supplied by: TECHNO-WELD LTD.

Address: ASTON WORKS, BACK LANE, ASTON, OXON, OX18 2BX, ENGLAND.

Trade Name: TECHNO-WELD

Synonyms: LOW TEMPERATURE ALUMINIUM FUSION WELDING MATERIAL.

Intended Use: FOR D.I.Y., COMMERCIAL AND INDUSTRIAL USE. CADMIUM-FREE FLUXLESS FUSION WELDING FILLER MATERIAL.

HAZARDOUS INGREDIENTS

MATERIAL OR COMPONENT	(CAS #)	WEIGHT %	HAZARD DATA OSHA PEL	ACGIH TLV
ZINC	(CAS # 7440-66-6)	90 - 98	2 mg/m^3	2 mg/m^3
ALUMINIUM	(CAS # 7429-90-5)	1.0 - 9.0	6.5 mg/m^3	0.5 mg/m^3
COPPER	(CAS # 7440-50-8)	0.1 - 5.0	30 mg/m^3	action level
			DUST 1.0 mg/m^3(m&D)	1.0 mg/m^3(m&D)
			FUME 0.1 mg/m^3	0.2 mg/m^3

PHYSICAL DATA

BOILING POINT	Zinc = 907°C	Aluminium = 2467°C	Copper = 2595°C
SPECIFIC GRAVITY (Density @ 25°C)	Zinc = 7.133 g/cm^3	Aluminium = 2.699 g/cm^3	Copper = 8.94 g/cm^3
VAPOUR PRESSURE	Not Applicable		
VAPOUR DENSITY		Not Applicable	
SOLUBILITY IN H^2O		Not Applicable	
% VOLATILES BY VOL.	Not Applicable		
EVAPORATION RATE	Not Applicable		
APPEARANCE AND ODOUR	Silver Coloured Metal with no Odour		

HEALTH HAZARD INFORMATION

PRIMARY ROUTES OF EXPOSURE: Ingestion of Dust, Inhalation of Dust or Fume.

Zinc : Chronic inhalation of Zinc Oxide dust or fume. See attached MSDS on pure Zinc.
Note: Zinc is a high percentage of the Techno-Weld formula.

Aluminium : Inhalation of fumes from melting, casting, welding or burning and dust from grinding or cutting.
Note: Aluminium is a low percentage of the Techno-Weld formula.

Copper : Industrial exposure to copper fumes, dusts or mists result in metal fume fever with atrophic changes in nasal mucous membranes. Chronic poisoning results in Wilson's disease, characterised by a hepatic cirrhosis, brain damage, demyelination, renal disease and copper deposition in the cornea.
Note: Copper is a low percentage of the Techno-Weld formula.

EFFECTS OF OVEREXPOSURE:

Acute Overexposure: Excessive inhalation of fumes from many metals can produce an acute reaction known as "metal fever". Symptoms consist of chills and fever (very similar to and easily confused with flu symptoms) which comes on a few hours after such an exposure. Long-term effects have not been noted.

Chronic Overexposure: Fumes may cause irritation of the respiratory tract, skin and eyes.

Emergency and First Aid Treatment:
Flush eyes with water at least for 15 minutes, and seek medical assistance if necessary.

Remove excess dust from skin and wash affected area with soap and water. Seek medical assistance if necessary.

Treat burns from molten materials as you would any other serious burns.

Inhalation: Remove from over-exposure to fresh air. Consult Physician. Keep the Subject warm and resting. Perform artificial respiration if breathing has stopped.

Ingestion: If large quantities are ingested, give 1-2 glasses of water or milk. Induce vomiting only if Subject is fully conscious and has not convulsed. (Ingestion of significant amounts is likely.) All severe ingestion cases should have immediate medical aid.

FIRE AND EXPLOSION DATA

Flash Point: Not Applicable **Auto Ignition Temperature:** Not Applicable

Flammable Limits in Air (% by Vol.): Not Applicable

Extinguishing Media: Special mixtures of dry chemicals suitable for metal fume. Do not use water or moist sand. Fire fighters should wear self-contained breathing apparatus and protective clothing.

Special Fire: Metal products are no a fire hazard. However, dust generated from grinding especially if mixed with flammable coatings may present a fire or explosion hazard under certain conditions. At a temperature above 375°C this alloy may melt and continuous heating could produce metal vapour.

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REACTIVE DATA

Incompatibility:

Pure zinc:	Incompatible with strong acids, sodium's or halogens.
Pure Aluminium:	N/A
Pure copper:	Incompatible with 1-bromo-2-propyne, fume is incompatible with acetylene gas, dust and mist are incompatible with acetylene gas and magnesium metal.

Hazardous Decomposition: Not Applicable
Hazardous Polymerisation: Does not occur

SPILLS, LEAKS & DISPOSAL PROCEDURES

Steps to be taken: No special precautions are necessary for spills of bulk material. If large quantities of dust are spilled, remove by vacuuming with approved HEPA type filtration or wet sweeping to prevent heavy concentrations of airborne dust. Clean-up personnel should wear respirators and protective clothing.

Waste disposal: Scrap metal can be reclaimed for reuse. Follow Government and Local regulations regarding disposal.

SPECIAL PROTECTION INFORMATION

Ventilation Requirements: Use mechanical local exhaust ventilation adequate to maintain airborne concentration of all components and reaction produced to within their respective OSHA PELs'.

Specific Personal Protection:

Eyes:	Goggles, face shield.
Hands:	Use chemical resistant gloves to avoid repeated skin contact.
Other Clothing:	Wear non-flammable protective clothing suitable for the process of melting, casting and torch welding.
Work Hygiene:	Avoid ingestion of material. Wash hands and face before eating, drinking or consumption of tobacco.

Other Handling and Storage Requirements:
Use good housekeeping practices to prevent accumulations of dust and to keep airborne dust concentrations at a minimum. Avoid breathing dust or fumes. Store material away from incompatible

materials, and keep dust away from sources of ignition.

DISCLAIMER OF EXPRESSED OR IMPLIED WARRANTIES

ALTHOUGH REASONABLE CARE HAS BEEN TAKEN IN THE PREPARATION OF THIS DATA SHEET, AND ALL INFORMATION CONTAINED THEREIN HAS BEEN REVIEWED AND REVISED TO THE BEST OF OUR ABILITY, WE EXTEND NO WARRANTIES AND MAKE NO REPRESENTATIONS AS TO THE ACCURACY OR COMPLETENESS OF THE INFORMATION FOUND IN THESE DATA SHEETS. WE THEREFORE ASSUME NO RESPONSIBILITY REGARDING THE SUITABILITY OF THIS INFORMATION FOR THE USERS INTENDED PURPOSES OR FOR THE CONSEQUENCES OF THIS PRODUCTS USE. EACH INDIVIDUAL MUST MAKE HIS OR HER OWN DETERMINATION AS TO THE SUITABILITY OF THE INFORMATION FOR SUCH PURPOSES OR USE.

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