

MATERIAL SAFETY DATA SHEET

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Identifier TerraWeld® Exothermic Welding Powder	
Chemical formula Copper based welding powder.	
Manufacturer's Name ALLTEC LLC	
Street Address 64 Catalyst Drive	
City Canton	State North Carolina
Zip Code 28716	Emergency Telephone 828-646-9290
Date MSDS Prepared 3/21/2014	MSDS Prepared By ALLTEC LLC

SECTION 2 — COMPOSITION / INFORMATION ON INGREDIENTS

Substance / preparation:

Preparation

INGREDIENTS	CAS INDEX	% by weight
Aluminum Copper Alloy* < 60 – Aluminum < 60 – Copper	7429-90-5 7440-5-08	Not > 15%
Calcium Silicon	12775-68-7	Not > 5%
Copper Oxide	1317-39-1	Not > 80%
Copper	7440-50-8	Not > 10%

*Occupational exposure limits if available are listed in Section 8.

SECTION 3 — HAZARDS IDENTIFICATION

The preparation is not classified as dangerous according to Directive 1999/45/45/EC and its amendments

Classification	: Weld Metal
Additional Hazards	: Exothermic reaction, producing molten metal in excess of 1375degC
Appearance	: Grey-Black granular particles
Odor	: Odorless
Routes of entry	: The primary route of entry into the human system is by means of inhalation via mouth or nose.
Target Organs	: Contains material which may cause damage to the following organs; lungs, cardiovascular system, the upper respiratory tract, skin, eyes, the eye lens or the corneas.
Effects and symptoms	
Skin	: Burns from the heat given off during the reaction or from the resultant by-product. Long term exposure to copper dust may result in allergic dermatitis.
Eyes	: Temporary blindness from the intense light generated during the exothermic reaction. Irritation of the eyes from the dust and fumes result of the exothermic reaction.
Upper respiratory tract	: The inhalation of freshly formed oxide fumes and dust in high concentrations could result in influenza like symptoms. The repeated or prolonged inhalation may occasionally result in ulcerations and perforation of the nasal septum.
Aggravating conditions	: Repeated exposure to highly toxic material may produce a general deterioration of health by an accumulation in one or more human organs.

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SECTION 4 — FIRST AID MEASURES

First-aid measures

Inhalation	: If inhaled, remove the subject to fresh air, if not breathing, give artificial respiration. If breathing is difficult, give oxygen, and seek medical attention immediately .
Ingestion	: DO NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person . If a large quantity of this material is swallowed, seek medical attention immediately . Loosen all tight clothing such as a collar, tie, belt or waistband.
Burns	: Standard treatment for burns in the event of contact of molten metal, slag or hot by-product or equipment, seek medical attention immediately .
Eyes	: Check for and if necessary - remove any contact lenses. Then immediately flush the eyes with copious amounts of fresh clean water (making sure the eyes are always open during the washing) for at least 15 minutes. If the Irritation persists, seek medical attention .
Notes to physician	: No additional remarks
Protection of first-aiders	: No additional remarks

SECTION 5 — FIRE FIGHTING MEASURES

Ignition:	Weld Metal:	Indirect heating above 955°C (1777°F)
Flammable limits:	Weld Metal:	LEL – N/A UEL – N/A
Extinguishing Media:	Weld Metal:	By using dry sand or flooding with copious amounts of water in a fine spray. NEVER USE A DIRECT JET OF WATER
Special fire-lighting procedures:	Weld Metal:	The application of water should always be done at a safe distance from the fire. NEVER TRY TO USE HAND BUCKETS OR HAND HELD EXTINGUISHERS.
Unusual fire and explosion hazards:	Weld Metal:	Self propagating high temperature reaction will occur if heated above the ignition point (see flash point). This will result in molten metal, slag and dense, dusty smoke, volatile combustible decomposition of plastic and cardboard packaging.

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Personal precautions	Eyes:	Splash goggles.
	Respiratory System:	Dust protection mask.
	Skin and body:	Overalls buttoned to the neck and wrist.
Environmental precautions and clean-up methods:		All spilled or leaked materials may be wetted down and then swept up for disposal using a soft natural fiber brush and non-sparking conductive scoops. UNDER NO CIRCUMSTANCES SHOULD SYNTHETIC FIBER BRISTLE BRUSHES OR OTHER CONDUCTIVE SCOOPS BE USED. By wetting down the spillage you avoid the creation of a dust laden cloud or any action which could cause the powder dispersing into the air. If the powder should enter the storm water or sewer system, it is non-toxic and non-polluting.

Note: See Section 8 for personal protective equipment and Section 13 for waste disposal.

SECTION 7 — HANDLING AND STORAGE

Handling:	Keep away from heat.
Storage:	Store in a cool dry area and away from sources of ignition i.e. electrical outlet sockets; open flame etc.
Packaging:	Packed in hermetically sealed foil pouch, each with an amount of weld metal weighing between 15 and 250 grams in each pouch. There are 10 to 20 pouches in a cardboard box, dependent on the size of the pouch and there are between 20 and 30 cardboard boxes in a cardboard carton.

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SECTION 8 — EXPOSURE CONTROL / PERSONAL PROTECTION

Engineering measures:

Under normal conditions there is no need for any special protective measures as **TERRAWELD®** Copper Weld Metal is generally used in the outdoors and in very small quantities and for short durations of time.

Hygiene measures:

Wash hands after handling the weld metals and before eating, smoking, using the lavatory, and at the end of the shift.

Occupational exposure limits:

INGREDIENTS	CAS INDEX	Exposure Limits (mg/m ²)			
		OHS Act of 1993 (RSA) OSHA (USA)		ACGIH TLV	
Aluminum Copper Alloy <60 – Aluminum <60 – Copper	7429-90-5 7440-50-8	Total Dust – 15.0 Dust – 1.0	Respiration Fraction – 5.0 Fume – 0.1	Dust – 10.0 Dust – 1.0	Fume – 5.0 Fume 0.2
Calcium Silicon	12775-68-7	Ca -5.0 as CaO Si -5.0		Ca -5.0 as CaO Si -5.0	
Copper Oxide	1317-39-1	Dust – 1.0	Fume – 0.1	Dust – 1.0	Fume 0.2
Copper	4770-50-8	Dust – 1.0	Fume – 0.1	Dust – 1.0	Fume – 0.2

Personal protective equipment –

Respiratory System:

N95 grade NIOSH approved Mask or equivalent if the area requires it.

Skin and body:

Overalls buttoned to the neck and wrist, welder's apron and work boots.

Hands:

Welder's gloves.

Eyes:

Min. shade 3 tinted safety glasses.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Granular particles.
Color:	Grey-black.
Odor:	Odorless.
Boiling point:	N/A
Vapor Pressure:	N/A
Vapor Density:	N/A
Solubility in Water:	Insoluble.
Density / Specific Gravity (H ₂ O = 1):	2.5 nominal
Exothermic reaction temperature:	above 1375°C (2533°F)
Evaporation rate (Butyl Acetate = 1):	N/A
pH:	N/A
Flash point:	N/A

SECTION 10 — STABILITY AND REACTIVITY

Stability:	Stable.
Conditions to avoid:	Temperatures above (955°C or 1777°F).
Incompatibility (materials to avoid) of weld metal:	All problems associated with molten metals.
Hazardous decomposition:	None.
Hazardous polymerization:	None.

SECTION 11 — TOXICOLOGICAL INFORMATION

Local effects -

Skin Irritation:	Long term exposure to copper dust may result in allergic dermatitis.
Eye irritation:	No additional information.
Sensitization:	No additional information.

Acute toxicity -

Ingredient Name	Test	Result	Route	Species
No additional information				

Chronic toxicity:

Repeated exposure to a highly toxic material may produce a general deterioration of health by an accumulation in one or more human organs.

Specific effects –

Ingredient Name	Carcinogenic Effects	Mutagenic Effects	Developmental Toxicity	Impairs Fertility
No additional information				

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SECTION 12 — ECOLOGICAL INFORMATION

Exotoxicity Data -

Ingredient Name	Species	Period	Result
No additional information			

Ecological information

Mobility:	Not known.
Persistence / degradability:	Not really biodegradable.
Bio accumulative potential:	Not expected to bio accumulate.

Ingredient Name	BOD	COD	Persistence / degradability ThOD	Aquatic Half-life	Photolysis	Biodegradability	Bio Accumulative potential Log P	BCF	Potential
No additional information									

SECTION 13 — DISPOSAL CONSIDERATIONS

Methods of Disposal:

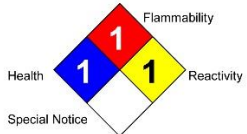
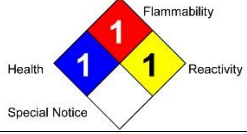
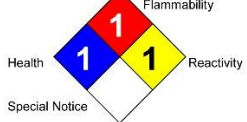
As the material is non-toxic it may be disposed of in a landfill sites, when in compliance with local regulations. Contaminated packaging may also be disposed of in landfill sites, when in compliance with local regulations.

Waste classification:

Not applicable.

SECTION 14 — TRANSPORT INFORMATION

Local / international transport regulations

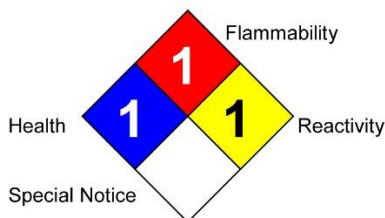
Regulatory information	UN Number	Proper Shipping Name	Class	Packing Group	Label	Additional information
SABS 0228 – Class Land – Road / Railway	Not Regulated	-	-	-		-
IMDG – Class Sea	Not Regulated	-	-	-		-
IATA - DGR Class Air	Not Regulated	-	-	-		-

SECTION 15 — REGULATORY INFORMATION

Hazard symbol(s) -

NFPA - HAZARD RATING

- 0 – Insignificant
- 1 – Slight
- 2 – Moderate
- 3 – High
- 4 – Extreme



Indication of Danger –

Risk phrase:
Safety phrase:
Contains:
Product use:

This product is not classified according to the EU regulations.

Not applicable.

Not applicable – (Non-Dangerous Substances).

Classification and labeling have been done in accordance to EU directives 67/548/EEC and 1999/45/EC including amendments and the intended use.

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SECTION 16 — OTHER INFORMATION

Other special considerations: None identified

History -

Date first approved for use: 07/June/2011

Date first issued: 07/June/2011

Review N°	Originated by:	Reviewed by:	Approved by:	Date Submitted:	Date first issued:	Date withdrawn:

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Appendix I

Respirator selection: Not applicable (Non-dangerous Substances)