

Product Name: Starting Powder
Revision Date: 8 January 2015

SAFETY DATA SHEET

SECTION 1	PRODUCT AND COMPANY IDENTIFICATION
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PRODUCT

Product Name: Starting Powder

Product Description: Black / silver granular metal

Intended Use: Ignition powder for exothermic weld metal

COMPANY IDENTIFICATION

Supplier: Continental Industries, a Division of Burndy LLC.
1140 North 129th East Ave
Tulsa, OK 74116 USA

24 Hour Emergency (INFOTRAC) (800) 535-5053
(352) 323-3500 (*International*)

TELEPHONE NUMBER FOR INFORMATION (800) 558-1373

SECTION 2	HAZARDS IDENTIFICATION
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CLASSIFICATION:

Health	Environmental	Physical
•Acute Toxicity - Oral, Category 4 •Skin Irritation - Category 3 •Eye Irritation - Category 2B	•No classifiable hazards	•Flammable Solids - Category 1

LABELING:

 Health Hazard	 Flame	 Irritant
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Signal Word: Warning

Hazard Statements	Precautionary Statements
•H 302: Harmful if swallowed •H 320: Causes eye irritation •H 228: Flammable Solid •H315: Causes skin irritation	•P 273: Avoid release to the environment •P 261: Avoid breathing dust/fume/gas/mist/vapors/spray •P 264: Wash thoroughly after handling •P 280: Wear protective gloves/clothing

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SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Reportable Hazardous Substance(s) or Complex Substance(s)

Name	Common Name/ Synonym	CAS #	Percentage	Impurities
Aluminum	Aluminum Flake, Aluminum Metallic, Atomized Aluminum, Aluminum Powder	7429-90-5	30-50	
Cuprous Oxide	Copper Oxide, Cu_2O , Cuprite	1317-39-1	10-30	<10% Cupric Oxide <1% Copper
Iron Oxide, Black	-	1317-61-9	10-30	
Cupric Oxide	Copper Oxide, CuO , Tenorite	1317-38-0	1-5	

* All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.
The exposure limits of this product, when allowed to enter the environment as dust particulate, are covered under the rules of 29 CFR 1910.1000, Table Z -3, "All inert or nuisance dusts, whether mineral, inorganic or organic."

SECTION 4 FIRST AID MEASURES

ROUTES OF ENTRY: Ingestion, Contact

EMERGENCY AND FIRST AID PROCEDURES:

Inhalation: Breathing airborne particles or dust may cause irritation to respiratory tract. Remove affected person to fresh air; if symptoms persist seek medical attention.

Eye Contact: Direct contact can cause eye irritation. Remove contact lenses. Flush eyes with clear running water for 15 minutes while holding eyelids open; if irritation persists, seek medical attention.

Skin Contact: Prolonged contact may lead to contact dermatitis. Remove contaminated clothing; wash affected area with soap and water; launder contaminated clothing before reuse; if irritation persists, seek medical attention.

Ingestion: May cause gastric distress, stomach pains, vomiting and diarrhea. Give two glasses of water for dilution; induce vomiting as directed by medical personnel; never give anything by mouth to an unconscious person; seek medical attention.

SECTION 5 FIRE FIGHTING MEASURES

GENERAL HAZARDS:

The materials are not explosive; ignition temperatures are in excess of 850° F (454C) for starting material and 1750° F (954C) for base material. They are not shock sensitive, nor are they subject to spontaneous ignition. Should the material be accidentally ignited, the immediate and direct application of large volumes of water will effectively retard the spread of fire and control it. Large amounts of dense, dusty smoke will be liberated during an accidental fire. Smoke, oxides of carbon; fumes of copper and aluminum, small amounts of fluoride fume or hydrofluoric acid fume may be released under ignition.

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use carbon dioxide, water, water fog, dry chemical, chemical foam, dry sand.
Inappropriate Extinguishing Media: None known

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FIRE FIGHTING PROCEDURES

Fire Fighting Instructions: Firefighters must wear full face piece self - contained breathing apparatus in positive pressure mode. Water may be used from a distance once reaction is complete. Molten metal contact with water can produce pockets of superheated steam.

Unusual Fire Hazards / Combustion Products: ThermOweld® copper base welding/joining materials are exothermic mixtures, which when reacted, produces a thermite reaction and hot molten materials with temperatures in excess of 4000° F (2204C) and a localized release of smoke.

SECTION 6 ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Confine and segregate product for reuse; place material into approved containers for disposal; for spills in excess of allowable limits (RQ) notify the National Response Center (800) 424 - 8802; refer to CERCLA 40 CFR 302 for detailed instructions; refer to SARA Title III, Section 313, 40 CFR 372 for reporting requirements. Do not discharge into lakes, ponds, streams or public waters.

ENVIRONMENTAL PRECAUTIONS:

Copper and Aluminum can be serious marine pollutants. Prevent entry into waterways, sewer, basements or confined areas. In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. The National Response Center can be reached at (800) 424-8802; refer to CERCLA 40 CFR 302 for detailed instructions; refer to SARA Title III, Section 313, 40 CFR 372 for reporting requirements.

CLEAN UP AND CONTAINMENT METHODS:

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Stop leak if you can do it without putting yourself in harm's way. All equipment used when handling the product must be grounded. Avoid breathing vapors/fumes/dusts and wear specific protective equipment specified in section 8. Use clean non-sparking tools to collect material and segregate material for reuse. If material cannot be reused place material in appropriate disposal container.

Spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

SECTION 7 HANDLING AND STORAGE

Storage of ThermOweld exothermic materials should be in a clean dry area and restricted to access by authorized personnel only. Do not subject to rough handling or physical damage, nor excessive vibration. Store in accordance with "This Side Up" labels. Protect from weather and moisture. DO NOT USE PRODUCTS THAT HAVE BEEN EXPOSED TO MOISTURE. Keep away from children.

Before using ThermOweld Exothermic Process, personnel should be trained by a ThermOweld representative. Read and understand the instruction sheet packaged with the mold, and observe all general and safety instructions. Do not tamper with valve. Keep away from ignition sources prior to use. Do not spray in eye, inhale vapors, or ingest. Use product in only well ventilated areas. Improper use can lead to exposure of molten metal and reaction by-products.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Name	CAS #	OSHA/PEL	NIOSH	ACGIH
Aluminum	7429-90-5	15 mg/m ³ TWA (Dust) 5 mg/m ³ TWA (Fume)	10 mg/m ³ TWA (Dust) 5 mg/m ³ TWA (Fume)	10 mg/m ³ TWA (Dust)
Cuprous Oxide	1317-39-1	0.1 mg/m ³ TWA (Fume) 1 mg/m ³ TWA (Dust)	0.1 mg/m ³ TWA (Fume) 1 mg/m ³ TWA (Dust)	1 mg/m ³ TWA (Dust) 0.2 mg/m ³ TWA (Fume)
Iron Oxide, Black	1317-61-9	10 mg/m ³ TWA	10 mg/m ³ TWA	Not Established
Cupric Oxide	1317-38-0	5 mg/m ³ TWA (Fume) 15 mg/m ³ TWA (Total Dust)	5 mg/m ³ TWA (Fume) 10 mg/m ³ TWA (Total Dust)	Not Established

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PERSONAL PROTECTIVE EQUIPMENT:

*Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: NIOSH approved respirator designed to remove airborne particulate present in excess of maximum allowable concentrations due to secondary operations such as mixing, spraying, sanding, buffing, etc. Refer to 29 CFR 1910.134 or European Standard EN 149 for regulations.

Hand Protection: Neoprene or rubber gloves.

Eye Protection: Protective eyeglasses or chemical safety goggles. Refer to 29 CFR 1910.133 or European Standard EN166.

Skin and Body Protection: No special protection is ordinarily required under normal conditions of use for skin and body. Wear appropriate clothing to the application used, along with all other personal protective equipment.

Other Protective Clothing or Equipment: Safety eyebath nearby

Specific Hygiene Measures: Practice safe workplace habits. Minimize body contact with this, as well as all chemicals in general.

SECTION 9 PHYSICAL/CHEMICAL PROPERTIES

Typical physical and chemical properties are given below. Consult the Supplier in Section 1 for additional data.

GENERAL INFORMATION

Physical State: Solid
Color: Black/ Silver
Odor: Characteristic odor
Odor Threshold: Not Available

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Appearance: Black/ Silver granules
pH: Not Applicable
Viscosity: Not Applicable
Freezing Point: Not Available
Boiling Point: Not Applicable
Flash Point: Not Applicable
Evaporation Rate (Water=1): Not Applicable
Lower Flammability Limit: Not Applicable
Upper Flammability Limit: Not Applicable
Vapor Pressure: Not Applicable
Vapor Density (Air=1): Not Applicable
Specific Gravity (Water = 1): Approximately 5.0
Solubility in Water: Insoluble
Coefficient of Water/Oil Distribution: Not Available
Auto-ignition Temperature: > 1750 °F (> 955 °C)
Percent Volatile, wt. %: Not Available
VOC content, wt. %: Not Available

SECTION 10 STABILITY AND REACTIVITY

STABILITY: Stable under normal conditions.

CONDITIONS TO AVOID: Avoid generating airborne dust, avoid moisture

INCOMPATIBLE MATERIALS: Strong oxidizers, strong acids

HAZARDOUS DECOMPOSITION PRODUCTS: Decomposition will not occur if handled and stored properly. In case of fire, smoke, oxides of carbon; fumes of copper and aluminum may be produced.

POSSIBILITY OF HAZARDOUS REACTIONS: HAZARDOUS POLYMERIZATION will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Ingredient	LD50/LC50 Route and Species	Conclusion / Remarks
Cuprous Oxide	LD ₅₀ : 470 mg / kg Oral-Rat LC ₅₀ : 5 mg / m ³ / 24H Inhalation - Rat	RTECS, EPA HSNO CCID
Cupric Oxide	LD ₅₀ : 470 mg / kg Oral-Rat LC ₅₀ : Not Established	RTECS
Aluminum (fume or dust)	LDL ₀ : 1,260 mg/kg Oral-Mouse LD ₅₀ : > 15,900 mg/kg Oral-Rat	-
Iron oxide, black	LD ₅₀ : Not established LC ₅₀ : Not established	Insufficient Data

ACUTE EFFECTS:

Eye Contact: Direct contact with eyes may cause irritation.

Skin Contact: None expected, however, prolonged contact may cause irritation.

Inhalation: Breathing airborne particles or dust from mixing, spraying, sanding, grinding, etc. may cause irritation to respiratory tract. Contains substances which are considered nuisance dusts which require a NIOSH approved respirator when airborne particulate exceeds maximum allowable limit.

Ingestion: May cause gastric distress, stomach pains, vomiting and diarrhea

Carcinogenicity: IARC: NO ACGIH: NO NTP: NO OSHA Regulated: NO

CHRONIC/OTHER EFFECTS:

Product is an eye, skin and respiratory irritant. Products containing tin can cause allergic contact dermatitis. Acute copper poisoning after ingestion can cause liver injury, methemoglobinemia and hemolytic anemia. Acute renal failure may result, secondary to massive homoglobinuria. Iron Oxide fumes can cause metal fume fever and prolong inhalation can cause damage to the liver and kidneys.

SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data available for the material, the components of the material and similar materials.

ECOTOXICITY:

Ingredient	LC₅₀ and Species	Conclusion
Cuprous Oxide	75 µg/L/96 hr Zebra Danio Fish 173 µg/L/96 hr Sheepshead Minnow	
Cupric Oxide	25.4 mg/L/96 hr Rainbow Trout 460 µg/L/96 hr Striped Bass	
Aluminum	1.13 mg/L/96 hr Loach Family	
Iron Oxide	Not Available	Insufficient Data

ENVIRONMENTAL FATE:

There is limited data regarding the mobility, degradability and potential for bioconcentration in aquatic species for the ingredients of this product. Evidence suggests that copper does not have significant mobility in soil unless under acidic conditions. Copper and copper oxides can be highly toxic to aquatic species. Aluminum contamination can be toxic to aquatic species. Industrial products should not be discharged to sewers or other water sources to prevent the risks of long term adverse effects and environmental contamination.

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SECTION 13 DISPOSAL CONSIDERATIONS

Avoid discharge into natural waters. Ultimate disposal of the chemical must consider: the material's impact on air quality; potential migration in soil or water; effects on animal, aquatic and plant life; and conformance with environmental and public health regulations.

According to the European Waste Catalogue, waste codes are application specific and should be assigned by the user based on the application for which the product is used. Dispose of in accordance with Local, State, and Federal Regulations. Do not flush to sanitary sewer or waterway. Refer to "40 CFR Protection of Environment Parts 260 - 299" for complete waste disposal regulations. US EPA guidelines for the classification determination are listed in 40 CFR parts 261.3. Consult your local, state, or Federal Environmental Protection Agency before disposing of any chemicals to ensure complete and accurate classification.

SECTION 14 TRANSPORTATION

UN Number: UN3089
UN Proper Shipping Name: Metal Powder, Flammable, N.O.S. (Aluminum powder (stabilized))
Transport Hazard Class: 4.1
Packing Group Number: II
Environmental Hazards: Marine Pollutant

*ThermOweld Starting Powder is shipped and sold in small quantities combined in the weld metal tubes. This factor allows ThermOweld Starting Powder to be shipped under 29 CFR 173.4 Exceptions for Small Quantities.

SECTION 15 REGULATORY INFORMATION

TSCA (USA - Toxic Substance Control Act)

All components of this product are listed on the U.S. Toxic Substances Control Act Chemical Inventory (TSCA Inventory) or are exempted from listing because a Low Volume Exemption has been granted in accordance with 40 CFR 723.50.

SARA TITLE III (USA - Superfund Amendments and Reauthorization Act)

311/312 Hazard Categories
Immediate health

313 Reportable Ingredients:

(a) Indicates a toxic chemical subject to annual reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40 CFR 372

CERCLA (USA - Comprehensive Response Compensation and Liability Act)

None

California Prop 65, Safe Drinking Water and Toxic Enforcement Act of 1986

There are no chemicals present known to the state of California to cause cancer or reproductive toxicity.

CPR (Canadian Controlled Products Regulations)

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations. WHMIS Classification: Not controlled

IDL (Canadian Ingredient Disclosure List)

Components of this product identified by CAS number and listed on the Canadian Ingredient Disclosure List are shown in Section 2.

DSL / NDSL (Canadian Domestic Substances List / Non-Domestic Substances List)

Components of this product identified by CAS number are listed on the DSL or NDSL and may or may not be listed in Section 2 of this document. Only ingredients classified as "hazardous" are listed in Section 2 unless otherwise indicated.

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EINECS (European Inventory of Existing Commercial Chemical Substances)

Components of this product identified by CAS numbers are on the European Inventory of Existing Commercial Chemical Substances.

WGK Water Quality Rating: 1

EU RISK (R) AND SAFETY (S) PHRASES:

- R 15: Contact with water liberates extremely flammable gases
- R 17: Spontaneously flammable in air
- R20/21/22 : Harmful by inhalation, in contact with skin and if swallowed
- R 36/37/38: Irritating to the eyes, respiratory system and skin
- S 22: Do not breathe the dust.
- S36/37/39: Wear suitable protective clothing, gloves and eye/face protection.

SECTION 16	OTHER INFORMATION
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HAZARDOUS MATERIALS IDENTIFICATION SYSTEM (HMIS) RATINGS:

Health - 1 Flammability - 0 Physical Hazard - 0 PPE - E

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:

Revision Date	Description	Sections Affected
8-14-14	Formatting	All
1/8/2015	Formatting	All

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