

Safety Data Sheet

1. Supplier and product

SINOWELD TECH CO.,LIMITED

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SDS Number: ZnAl0045

Product: Flux Cored ZnAl brazing wire/rods code: 9802

Product size: Variable

Product Use(s): for aluminum and aluminum-copper brazing and other metal brazing

2. Hazards identification

GHS classification of the substance/mixture.

Classified according to the Globally Harmonised System of Classification and Labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia. (Continued on Page 2)

Classification of the substance or mixture

The product is not classified as hazardous according to the Globally Harmonized System (GHS).

Additional information:

0 percent of the mixture consists of ingredient(s) of unknown toxicity.

There are no other hazards not otherwise classified that have been identified.

Label elements

GHS label elements

The product is not classified as hazardous according to OSHA GHS regulations within the United States.

Hazard pictograms Not Regulated

Signal word Not Regulated

Hazard-determining components of labelling: None.

Hazard statements Not Regulated

Precautionary statements Not Regulated

Additional information:

Other hazards which do not result in GHS classification:

Heat rays (infrared radiation) from flame or hot metal can injure eyes. Overexposure to brazing fumes and gases can be hazardous. Read and understand the manufacturer's instructions, Safety Data Sheets and the precautionary labels before using this product.

3. Composition/information on ingredients

Chemical characterization: Mixtures

Description: Mixture: consisting of the following components

Ingredient	CAS Number	% wt.	GHS note
Zinc Metal	7440-66-6	78-98	/
Aluminum	7429-90-5	2-22	/
Cesium fluoroaluminate	138577-01-2	10-25	/
Iron	7439-89-6	< 0.5	/
Copper	7440-50-8	< 0.5	/

Additional information:

For the listed ingredient(s), the identity and exact percentage(s) are being withheld as a trade secret.

Composition comments:

The term "Hazardous Ingredients" should be interpreted as a term defined in Hazard Communication standards and does not necessarily imply the existence of a hazard. The product may contain additional nonhazardous ingredients or may form additional compounds under the condition of use.

4. First aid measures**Description of first aid measures**

General information: No special measures required.

After inhalation:

Move to fresh air if breathing is difficult. If breathing has stopped, perform artificial respiration and obtain medical assistance at once.

After skin contact:

Remove contaminated clothing and wash the skin thoroughly with soap and water. For reddened or blistered skin, or thermal burns, obtain medical assistance at once.

After eye contact:

Dust or fume from this product should be flushed from the eyes with copious amounts of clean, tepid water until transported to an emergency medical facility. Do not allow victim to rub or keep eyes tightly closed. Obtain medical assistance at once.

After swallowing:

Unlikely due to form of product, except for granular materials. Avoid hand, clothing, food, and drink contact with metal fume or powder which can cause ingestion of particulate during hand to mouth activities such as drinking, eating, smoking, etc. If ingested, do not induce vomiting. Contact a poison control center. Unless the poison control center advises otherwise, wash out mouth thoroughly with water. If symptoms develop, seek medical attention at once.

Information for doctor:**Most important symptoms and effects, both acute and delayed**

No further relevant information available.

Danger

Brazing hazards are complex and may include physical and health hazards such as but not limited to infrared radiation from flame or hot metal, physical strains, thermal burns due to hot metal or spatter and potential health effects of overexposure to brazing fume or dust. Refer to Section 11 for more information.

Indication of any immediate medical attention and special treatment needed: Treat symptomatically.

5 Fire-fighting measures**Extinguishing media****Suitable extinguishing agents:**

As shipped, the product will not burn. In case of fire in the surroundings: use appropriate extinguishing agent. For metal fires: Use specific agents only.

For safety reasons unsuitable extinguishing agents: For metal fires: Use specific agents only.

Special hazards arising from the substance or mixture

Infrared radiation from flame or hot metal can ignite combustibles and flammable products.

Advice for firefighters**Special fire fighting procedures:**

Use standard firefighting procedures and consider the hazards of other involved materials.

Protective equipment:

Wear self-contained respiratory protective device.

Wear fully protective suit.

Additional information

Read and understand the Work Safe Australia Code of Practice on Welding Processes and “Standard for Fire Prevention During Welding, Cutting and Other Hot Work” before using this product. Section 274 of the Work Health and Safety Act (the WHS Act.)

6 Accidental release measures**Personal precautions, protective equipment and emergency procedures**

If airborne dust and/or fume is present, use adequate engineering controls and, if needed, personal protection to prevent overexposure. Refer to recommendations in Section 8.

Environmental precautions:

Avoid release to the environment.

Prevent further leakage or spillage if safe to do so.

Methods and material for containment and cleaning up:

Clean up spills immediately, observing precautions in the personal protective equipment in Section 8. Avoid generating dust. Prevent product from entering any drains, sewers or water sources. (Continued on Page 4)

Pick up mechanically.

Send for recovery or disposal in suitable receptacles.

Dispose contaminated material as waste according to item 13.

Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage**Handling:****Precautions for safe handling**

Prevent formation of dust.

Ensure good ventilation/exhaustion at the workplace.

Any deposit of dust which cannot be avoided must be regularly removed.

Read and understand the manufacturer's instruction and the precautionary label on the product

Information about protection against explosions and fires: No special measures required.

Conditions for safe storage, including any incompatibilities**Storage:****Requirements to be met by storerooms and receptacles:**

Store in closed original container in a dry place. Store away from incompatible materials. Store in accordance with local/regional/national regulations.

Information about storage in one common storage facility: No special requirements.

Further information about storage conditions: No special requirements.

Specific end use(s) No further relevant information available.

6. Accidental release measuresPersonal Precautions, Protective Equipment and Emergency Procedures

General Measures: Do not breathe vapors from molten product. Avoid all contact with skin, eyes, or clothing. Avoid breathing vapor, mist, gas.

For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protection equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

For Emergency Personnel

Protective Equipment: Equip response and cleanup crew with proper protection.

Emergency Procedures: Evacuate unnecessary personnel. Eliminate ignition sources. Ventilate area.

Environmental Precautions

Prevent entry to sewers and public waters.

Methods and Material for Containment and Cleaning Up

For Containment: Where possible allow molten material to solidify naturally. Contain and collect as any solid.

Methods for Cleaning Up: Clean up spills immediately and dispose of waste safely. Avoid generation of dust during clean-up of spills. Ventilate area. Use explosion proof vacuum during cleanup, with appropriate filter. Do not mix with other materials. Use only non-sparking tools. Transfer spilled material to a suitable container for disposal.

7. Handling and storage

Precautions for Safe Handling

Use proper ventilation and respiration apparatus; eye, hand, and body protection as necessary.

Additional Hazards When Processed: Risk of electric shock when welding. Arc rays and sparks can burn skin. Fumes from welding, or processing of this material can be harmful if inhaled. See ANSI Z49.1-1967 Safety in Welding and Cutting published by the American Welding Society and OSHA Hazard Communication Standard 1910.1200 for additional details regarding the handling and storage of this material.

Precautions for Safe Handling: Avoid contact with skin and eyes. Do not breathe dust. Use appropriate personal protective equipment when handling and observe good personal hygiene measures after handling. Do not handle until all safety precautions have been read and understood.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work.

Conditions for Safe Storage, Including Any Incompatibilities

Storage Conditions: Store in a dry, cool and well-ventilated place. Keep container closed when not in use. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials.

Incompatible Materials: Strong acids. Strong bases. Strong oxidizers. Halogens. Nitric oxide/nitrogen dioxide. Hydrogen peroxide. Phosphorus.

8 Exposure controls/personal protection

Exposure	Standardst		
CAS	Ingredient	TWA ppm	TWA mg/m3
7429-90-5	Aluminium Metal Dust		10
7429-90-5	Aluminium Welding Fumes		5
138577-01-2	Cesium fluoroaluminate		2
7440-66-6	Zinc Metal		

Additional information about design of technical systems: No further data; see item 7

Exposure Controls

Appropriate Engineering Controls: Emergency eye wash fountains and safety showers should be available in the immediate

vicinity. Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed. All equipment should comply with the National Electric Code. When cutting, grinding, crushing, or drilling, provide general or local ventilation systems, as needed, to maintain airborne dust concentrations below the regulatory limits. Local vacuum collection is preferred since it prevents release of contaminants into the work area by controlling it at the source. Other technologies that may aid in controlling airborne respirable dust include wet suppression, ventilation, process enclosure, and enclosed employee work stations. Dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product should contain explosion relief vents, explosion suppression system, or an oxygen-deficient environment. Prevent dust accumulation (to minimize explosion hazard).

Personal Protective Equipment: Gloves. Protective clothing. Face shield. Insufficient ventilation: wear respiratory protection.

Materials for Protective Clothing: With molten material wear thermally protective clothing.

Hand Protection: Leather gloves. Heat resistant gloves.

Eye Protection: Chemical goggles or safety glasses. Welders should wear goggles or safety glasses with side shields that comply with ANSI Z87.1 under welding helmets and always wear goggles or other suitable eye protection when gas welding or oxygen cutting.

Skin and Body Protection: Wear fire/flammable resistant/retardant clothing appropriate for task.

Respiratory Protection: Wear approved respiratory apparatus appropriate for task.

Thermal Hazard Protection: Fire retardant clothing and gloves, as well as safety shoes are required for safe furnace work.

Consumer Exposure Controls: Do not eat, drink or smoke during use.

9. Physical and chemical properties

Physical state: Solid	Appearance: silver, gray, metallic luster; rod or wire
Odor: none	Odor threshold: n/a
pH: n/a	Evaporation rate: n/a
Melting point: 420 °C	Freezing point: n/a
Boiling point (@ 24 mm Hg): 980°C	Flash point: n/a
Auto-ignition temperature: n/a	Decomposition temperature: n/a
Flammability (solid, gas): n/a	Lower flammable limit: n/a
Upper flammable limit: n/a	Vapor pressure (mm Hg @ 1284C): 1
Relative vapor density at 20C: n/a	Relative density (flux-cored wire/rod): ≈8g/cm ³
Specific gravity @ 20C (water = 1): n/a	Solubility in water: Insoluble
Partition coefficient (N-octanol/water): n/a	Viscosity: n/a
Explosion - sensitivity to mechanical impact: not expected to present an explosion hazard due to	Explosion - sensitivity to static discharge: not expected to present an explosion hazard due to static discharge

10. Stability and reactivity

Products as shipped are non-hazardous, nonflammable, non-explosive, and nonreactive.

Reactivity: None under normal conditions. If dust is formed: Metallic dusts may ignite or explode.

Chemical Stability: Stable under normal conditions.

Possibility of Hazardous Reactions: Will not occur.

Conditions to Avoid: Incompatible materials. Uncontrolled exposure to extreme temperatures.

Incompatible Materials: Strong acids. Strong bases. Strong oxidizers. Halogens. Nitrogen oxides. Nitrogen dioxide. Hydrogen peroxide. Alcohols. Halogenated hydrocarbons.

Hazardous Decomposition Products: Metal oxides. Oxides of aluminum. Oxides of magnesium. Oxides of manganese. Oxides of copper. Oxides of zirconium. Oxides of titanium. Chromium oxides. Silicon oxides. Vanadium oxides. (From flux: fluorides).

11. Toxicological information

Information on Toxicological Effects - Product

Acute Toxicity: Not classified	LD50 and LC50 Data: Not available
Skin Corrosion/Irritation: Not classified	Serious Eye Damage/Irritation: Not classified
Respiratory or Skin Sensitization: Not classified	Germ Cell Mutagenicity: Not classified
Teratogenicity: Not available	Carcinogenicity: Not classified.
Specific Target Organ Toxicity (Repeated Exposure): Not classified	Reproductive Toxicity: Not classified
Specific Target Organ Toxicity (Single Exposure): Not classified.	Aspiration Hazard: Not classified

Symptoms/Injuries After Inhalation: The primary acute health hazard associated with this product would be the potential for exposure to fumes during metal processing operations. During processing, the most significant route of exposure is by the inhalation (breathing) of fumes. Fumes, inhaled, can cause a condition commonly known as metal fume fever with symptoms which resemble influenza. Symptoms may be delayed 4-12 hours and begin with a sudden onset of thirst, and a sweet, metallic or foul taste in the mouth. Other symptoms may include upper respiratory tract irritation accompanied by coughing and a dryness of the mucous membranes, lassitude and a generalized feeling of malaise. Fever, chills, muscular pain, mild to severe headache, nausea, occasional vomiting, exaggerated mental activity, profuse sweating, excessive urination, diarrhea and prostration may also occur.

Symptoms/Injuries After Skin Contact: Contact with hot, molten metal will cause thermal burns.

Symptoms/Injuries After Eye Contact: Fumes from thermal decomposition may cause eye irritation. Risk of thermal burns on contact with molten product. Arc rays and sparks can burn eyes.

Symptoms/Injuries After Ingestion: Ingestion is likely to be harmful or have adverse effects.

Chronic Symptoms: This product is intended for use in ARC welding. During this process UV rays irritate the superficial corneal epithelium, causing inhibition of mitosis, production of nuclear fragmentation, and loosening of the epithelial layer. Under experimental conditions in animals, phototoxic effects have been demonstrated at all levels of the cornea, including the stroma and endothelium.

12. Ecological information

Zinc metal is relatively insoluble; however, processing of the product or extended exposure in aquatic and terrestrial environments may lead to the release of zinc compounds in bioavailable forms. Zinc is highly mobile, and can be toxic in the aquatic environment with water hardness, pH and dissolved organic carbon content being major regulating factors. Zinc also has the potential to bioaccumulate in plants and animals in both aquatic and terrestrial environments. In soils, zinc is moderately mobile in accordance with soil properties (e.g., cation exchange capacity, pH, redox potential, chemical species); these properties also influence its bioavailability to terrestrial plants.

Persistence and degradability

Inorganic product, is not eliminable from water by means of biological cleaning processes.

Behavior in environmental systems:

Bioaccumulative potential No further relevant information available.

Mobility in soil No further relevant information available.

Additional ecological information:**General notes:**

Negative ecological effects are, according to the current state of knowledge, not expected.

Results of PBT and vPvB assessment:

PBT: Not applicable.

vPvB: Not applicable.

Other adverse effects No further relevant information available.

13. Disposal considerations

Sewage Disposal Recommendations: Do not empty into drains; dispose of this material and its container in a safe way.

Waste Disposal Recommendations: Dispose of waste material in accordance with all local, regional, national, and international regulations.

Additional Information: Recycle where possible and/or dispose of spent material such as metals & metal-bearing waste and submerged arc welding (SAW) flux/slag appropriately.

EPA Waste Number: D007 Chromium (5.0 mg/L regulated level)

14. Transport information

Transport is not regulated in accordance with: USDOT, TDG (Canada), IATA, or IMDG.

15. Regulatory information

	US Federal Regulations	Canadian
Aluminum	Listed on the United States TSCA (Toxic Substances Control Act) inventory; Listed United States SARA Section 313 SARA Section 311/312 Hazard Classes: Fire hazard Reactive hazard SARA Section 313 - Emission Reporting: 1.0% (dust or fume only)	Listed on the Canadian DSL (Domestic Substances List); Listed on the Canadian IDL (Ingredient Disclosure List) IDL Concentration 1 % WHMIS Classification: Class B Division 6 – Reactive Flammable Material; Class B Division 4 - Flammable Solid
Zinc	Listed on the United States TSCA (Toxic Substances Control Act) inventory; Listed United States SARA Section 313 SARA Section 313 - Emission Reporting: 1.0% (dust or fume only)	Listed on the Canadian DSL (Domestic Substances List); Listed on the Canadian IDL (Ingredient Disclosure List)

16. Other information including information on preparation and revision of the SDS

NFPA Health Hazard: 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given. NFPA Fire Hazard: 0 - Materials that will not burn. NFPA Reactivity: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.	HMIS III Rating Health: 2 Moderate Hazard – Temporary or minor injury may occur; (Product containing flux: 3 - Major injury likely unless prompt action taken) Flammability: 0 Minimal Hazard Physical: 0 Minimal Hazard
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