The Brock Metal Company Limited

Product Safety Data Sheet
Zinc Anodes

Section 1 - Identification of the substance / preparation and of the company / undertaking:

Identification of the product
Product Name: Zinc Anodes

Use of the Substance / Preparation
Industrial Used in steel galvanising, alloying, batteries.

Function of the Substance / Preparation
Corrosion inhibitors and anti scaling agents
Plating agents and metal surface treating agents
Anodic protection/battery component

Operational Area Industrial processing.

Company / undertaking identification
The Brock Metal Company Limited
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Form: Cast shapes.

Section 2 - Hazardous Information:

Not classified as hazardous

Section 3 - Chemical Composition / Information on Ingredients

Chemical Name	CAS Number	EINECS No.	% Concentration
Zinc	7440-66-6	231-175-3	>98.5- 99.995%

Section 4 - Exposure Scenarios and First Aid Measures.

First Aid Measures

Inhalation Remove victim from exposure to processing fumes or dusts to fresh air. Seek medical attention immediately.

Ingestion: Not regarded as a normal occupational hazard. Do not induce vomiting – Seek medical attention immediately if large quantities of dust or fume are ingested.

Skin Contact: If dust, remove contaminated clothing and wash effected area with soap and water. Seek medical attention if irritation persists.
Molten Metal – flood contact area to solidify and cool but do not attempt to remove encrusted metal on skin or clothing. Continue to flush for at least 10 minutes. Cover burns, if bigger than a 50 pence piece. Seek further medical attention immediately.

Eyes: If dust enters eyes flush for 10 – 20 minutes with cold water. Seek medical attention if required.

Section 5 - Fire Fighting Measures

5.1 Extinguishing media

Appropriate extinguishing media:	metal fire powder, dry sand or dry inert sorption agent.
Inappropriate extinguishing media:	water, foam or carbon dioxide
5.2 Special hazards	The substance in pulverised form liberates in contact with water, extremely flammable gases.
5.3 Advice for fire-fighters	Prevent the water/foam from extinguishing the fire to reach ground water, waterways, water catchment, surface water, conduit, or water treatment plant.

Section 6 - Accidental Release Measures:

6.1 Personal precautions	Use Personal protective equipment. Avoid dust formation.
6.2 Environmental precautions	Prevent the substance from contaminating the groundwater
6.3 Methods for cleaning.	Sweep and shuffle into an appropriate container for disposal. Store in appropriate closed containers for disposal

Section 7 - Handling and Storage:

7.1 Safe Handling	Store away from moisture, incompatible substances such as acids.

Section 8 – Exposure Controls / Personal Protection

	Occupational Exposure limit	
	Long Term EXP Limit (8Hour TWA)	Short Term EXP Limit (15 minute TWA)
Zinc Oxide and fume (ZnO)	Not listed	Not Listed
Zinc	Not listed	Not listed

DNEL

Industrial / Professional	Consumer	Exposure Route	Exposure Duration	Remarks
Relevant	Not relevant	Oral	Short term / Long tern	
Relevant	Not relevant	Dermal	Short term / Long tern	
Relevant	Not relevant	Inhalation	Short term / Long tern	

Protective Clothing:
Protective clothing should be selected specifically for the work place, depending on the concentration and quantity of the hazardous substances handles. The resistance of protective clothing to molten metal should be ascertained with the respective supplier.

Gloves and coveralls, shop coat or other work clothing are recommended to prevent prolonged or repeated direct skin contact when this product is processed.

Eye protection should be worn where fume or dust is generated.

Respiratory protection may be required where oxide fume is generated.

Where hot or molten metal is handled, heat-resistant gloves, full face visor, and molten metal resistant clothing to protect from hot metal splash should be worn. Foundry or safety type boots are recommended.

Other Protective Equipment

Ventilation: Use adequate local or general ventilation to maintain the concentration of zinc oxide fumes in the working environment well below recommended occupational exposure limits. Supply sufficient replacement air to make up for air removed by the exhaust system. Where metallic dust particles of zinc metals are being collected and transported by a ventilation system, use a non-sparking, grounded ventilation system separate from other exhaust ventilation systems. Locate dust collectors and fans outdoors if possible and provide dust collectors with explosion vents or blow out panels.

Respirators: Where zinc oxide fumes are generated and cannot be controlled to within acceptable levels by engineering means use appropriate respiratory protection equipment.

Industrial Hygiene:
No special precautions required. Change contaminated clothing, wash hands and face after working with substance. Wash hands before eating, drinking or smoking.

Environmental exposure controls and protective equipment:

Water	Do not release to water
Air	Local Exhaust ventilation may be required
Soil	Do not release to soil

Exposure controls for consumer use and in articles.
It is thought that there are no exposure scenarios for Zinc Metal to consumers.

Section 9 - Physical and Chemical Properties

Form	Solid shapes
Appearance	Zinc is a silver grey metal
Odour	None in solid form
pH Value	Not applicable
Melting Point	416 ^{o}C
Boiling Point	907 ^{O}C
Vapour Pressure	Negligible @ 20ºC
Relative Vapour Density	Not applicable.
Density	6.7g/cm^{3}
Solubility in water	Insoluble

Section 10 – Stability and Reactivity Data

Zinc is stable under normal conditions but can react vigorously with acids and alkalis. Zinc is stable at room temperature. Hazardous fumes do not occur when Zinc is heated within normal melting ranges.

Incompatibilities: Contact with acids and alkalis will generate highly flammable hydrogen gas. Acidic arsenic or antimony compounds in contact with Zinc metal may evolve highly toxic arsine or stibine gas. Incompatible with strong oxidising agents such as chlorine, fluorine, bromine, sodium potassium or barium peroxide, sodium or potassium chlorate, chromium trioxide and fused ammonium nitrate. Also incompatible with elemental sulphur dust, halogenated hydrocarbons or chlorinated solvents and chlorinated rubber.

Hazardous Decomposition Products: Thermal oxidation of this metal or dust will generate Zinc oxide fume which on inhalation in sufficient quantity can produce metal fume fever, a transient influenza like illness.

Section 11 – Toxicological Information:

General: In the metallic form in which this product is sold it is relatively non-toxic. The primary route of exposure would be through the generation and inhalation of metal oxide fume, principally composed of zinc oxide.

Inhalation Heating Zinc to temperatures near or above its boiling point will produce Zinc Oxide fumes. It is therefore advisable to avoid conditions and practices, which generate fumes. Inhalation of Zinc fumes may produce metal fume fever, a benign, reversible, flu like condition. The symptoms of metal fume fever will occur within 3 to 10 hours of exposure. These will include immediate dryness and irritation of the throat, tightness of the chest, and coughing. These may later be followed by flu like symptoms which include fever, malaise, perspiration, frontal headache, muscle cramps, low back pain and occasionally blurred vision, nausea and vomiting. The symptoms are temporary and generally disappear, without medical intervention, within 24 to 48 hours of onset. There are no recognized complications, after affects, or chronic affects that result from this condition. Rest assists recovery and a symptomatic treatment such as aspirin is recommended.

Ingestion: Not normally regarded as a normal occupational hazard. When ingested in excessive quantities Zinc can irritate the stomach resulting in nausea and vomiting.

Skin Contact: Accidental burn by molten alloy or molten metal may cause severe burn damage to skin tissue. Contact with dust or fume may cause local skin irritation but would not cause tissue damage.

Eyes: Molten metal may cause severe burn damage and may result in loss of vision. This metal alloy is not chemically irritating to the eyes

Chronic:
There is no chronic form of metal fume fever but in rare instances an acute incident may be followed by complaints such as bronchitis or pneumonia. Some workers may develop a short-term immunity (resistance) so that repeated exposure to zinc oxide fumes does not cause metal fume fever. This immunity (resistance) however is quickly lost after short absences from work (weekends or holidays). Workers exposed to finely-divided metallic zinc for up to 35 years revealed no acute or chronic illnesses attributable to zinc. Zinc is not listed as a human carcinogen by the Occupational Safety and Health Administration (OSHA), the National Toxicology Program (NTP), the International Agency for Research on Cancer (IARC), the American Conference of Governmental Industrial Hygienists (ACGIH) or the European Union (EU).

Section 12 - Ecological Information:

Zinc in the metallic form has limited bioavailability and poses no immediate ecological risk. However, processes in the environment may alter it's bioavailability.

In aquatic systems Zinc bioaccumulates in both plants and animals. In terrestrial systems the mobility of Zinc in soil is dependent on soil conditions. Zinc also bioaccumulates in terrestrial plants vertebrates and mammals with plant uptake from soil dependent on the plant species, soil pH and soil composition.

Section 13 - Disposal Considerations:

Product
If material cannot be returned to process or salvage, dispose of in accordance with applicable local regulations. Your supplier may be able to recycle this material for you.

Packaging
Packaging must be disposed of in compliance with country specific regulations or must be passed to a packaging return system.
Steel banding can be recycled.

Section 14 - Transportation Information:

Zinc is not classified as hazardous for transport.

Section 15 – Regulatory Information

Ingredients Listed on the European Inventory of Existing
Commercial Chemical Substances (EINECS) - Yes
EU Classification - Not applicable. zinc is not listed as a dangerous substance.

Labelling according to EC Directives:
None Specific

Section 16 – Other Information

None

This information has been compiled is based on the present state of our knowledge and as completely and accurately as possible based on the normal usage of the material. However, all information is given without warranty of representation and is intended solely for your own investigation and verification. It is not possible to identify all hazards associated with the use of this product and we disclaim any liability for damages arising out of or related to the information provided.

The exposure limits are those listed in the current Guidance note EH 40 published by the UK Health and safety executive.