



**Material Safety Data Sheet:  
Zinc Alloy  
MSDS-002**

Revision No.:	B
Issue Date:	05/07/2010
Pages:	1 of 4

**Section 1: Product Information and Company Identification**

**Product Name:** Zinc Alloy  
**Synonym:** Zn/Al  
**Chemical Name:** None Allocated  
**Chemical Formula:** None Allocated  
**Hazchem Code:** None Allocated

**Contact Information:**

**MCPS Ltd**  
102/2A Throckley Way  
Middlefields Industrial Estate  
South Shields  
Tyne & Wear  
NE34 0NU  
England  
Tel: +44 (0) 191 456 0466  
Fax: +44 (0) 191 454 1066  
Web: [www.mcpsltd.co.uk](http://www.mcpsltd.co.uk)  
Email: [sales@mcpsltd.co.uk](mailto:sales@mcpsltd.co.uk)

**Section 2: Composition and Information on Elements**

Elements %	Zinc Alloy	MIL-A-18001K	ASTM B 418 Type II	ASTM B 418 Type I
<b>Aluminium</b>		0.100% - 0.500%	max. 0.005%	0.100% - 0.500%
<b>Cadmium</b>		0.025% - 0.070%	max. 0.003%	0.025% - 0.070%
<b>Iron</b>		max. 0.005%	max. 0.0014%	max. 0.005%
<b>Copper</b>		max. 0.005%	max. 0.002%	max. 0.005%
<b>Lead</b>		max. 0.006%	max. 0.003%	max. 0.006%
<b>Others</b>		max. 0.100%	-	max. 0.100%
<b>Zinc</b>		min. 99.314%	Remainder	Remainder

**Section 3: Hazards Identification**

**Potential Acute Health Effects:** Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.

**Potential Chronic Health Effects:**

CARCINOGENIC EFFECTS: Not available.  
MUTAGENIC EFFECTS: Not available.  
TERATOGENIC EFFECTS: Not available.  
DEVELOPMENTAL TOXICITY: Not available.

Repeated or prolonged exposure is not known to aggravate medical condition.

**Section 4: First Aid Measures**

**Eye Contact:** Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.

**Skin Contact:** Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops.

**Serious Skin Contact:** Not available.

**Inhalation:** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**Serious Inhalation:** Not available.

**Ingestion:** Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

**Serious Ingestion:** Not available.

**Section 5: Fire and Explosion Data**



**Material Safety Data Sheet:  
Zinc Alloy  
MSDS-002**

Revision No.:	B
Issue Date:	05/07/2010
Pages:	2 of 4

**Flammability of the Product:** Flammable.

**Auto-Ignition Temperature:** 480°C (896°F)

**Flash Points:** Not available.

**Flammable Limits:** Not available.

**Products of Combustion:** Not available.

**Fire Hazards in Presence of Various Substances:** Slightly flammable to flammable in presence of open flames and sparks, of heat, of oxidizing materials, of acids, of alkalis, of moisture.

Non-flammable in presence of shocks.

**Explosion Hazards in Presence of Various Substances:** Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

**Fire Fighting Media and Instructions:** Flammable solid. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, auto-ignition or explosion.

**Special Remarks on Fire Hazards:** Zinc + NaOH causes ignition. Oxidation of zinc by potassium proceeds with incandescence. Residues from zinc dust /acetic acid reduction operations may ignite after long delay if discarded into waste bins with paper. Incandescent reaction when Zinc and Arsenic or Tellurium, or Selenium are combined. When hydrazine mononitrate is heated in contact with zinc, a flaming decomposition occurs at temperatures a little above its melting point.

Contact with acids and alkali hydroxides (sodium hydroxide, potassium hydroxide, calcium hydroxide, etc.) results in evolution of hydrogen with sufficient heat of reaction to ignite the hydrogen gas.

Zinc foil ignites if traces of moisture are present.

It is water reactive and produces flammable gases on contact with water. It may ignite on contact with water or moist air.

**Special Remarks on Explosion Hazards:** Not available.

#### Section 6: Accidental Release Measures

**Small Spill:** Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

**Large Spill:** Flammable solid that, in contact with water, emits flammable gases. Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Cover with dry earth, sand or other non-combustible material. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal. Finish cleaning by spreading water on the contaminated surface and allow evacuating through the sanitary system.

#### Section 7: Handling and Storage

**Precautions:** Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not breathe dust. Keep away from incompatibles such as oxidizing agents, acids, alkalis, moisture.

**Storage:** Keep container tightly closed. Keep container in a cool, well-ventilated area. Keep from any possible contact with water. Do not allow water to get into container because of violent reaction.

#### Section 8: Exposure Controls / Personal Protection

**Engineering Controls:** Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

**Personal Protection:** Safety glasses. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

**Personal Protection in Case of a Large Spill:** Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

**Exposure Limits:** Not available.

#### Section 9: Physical and Chemical Properties



**Material Safety Data Sheet:  
Zinc Alloy  
MSDS-002**

Revision No.:	B
Issue Date:	05/07/2010
Pages:	3 of 4

**Physical state and appearance:** Solid. (Lustrous solid. Metal solid.)

**Odour:** Not available.

**Taste:** Not available.

**Molecular Weight:** 7103 kg/m<sup>3</sup>

**Colour:** Bluish-grey

**pH (1% soln/water):** Not applicable.

**Boiling Point:** 907°C (1664.6°F)

**Melting Point:** 419°C (786.2°F)

**Critical Temperature:** Not available.

**Specific Gravity:** Not available.

**Vapour Pressure:** Not applicable.

**Vapour Density:** Not available.

**Volatility:** Not available.

**Odour Threshold:** Not available.

**Water/Oil Dist. Coeff.:** Not available.

**Ionicity (in Water):** Not available.

**Dispersion Properties:** Not available.

**Solubility:** Insoluble in cold water, hot water, methanol, diethyl ether, n-octanol, acetone.

### Section 10: Stability and Reactivity Data

**Stability:** The product is stable.

**Instability Temperature:** Not available.

**Conditions of Instability:** Excess heat, incompatible materials, moisture

**Incompatibility with various substances:** Reactive with oxidizing agents, acids, alkalis. Slightly reactive to reactive with moisture. The product may react violently with water to emit flammable but non toxic gases.

**Corrosivity:** Non-corrosive in presence of glass.

**Special Remarks on Reactivity:** Incompatible with acids, halogenated hydrocarbons, NH<sub>4</sub>NO<sub>3</sub>, barium oxide, Ba(NO<sub>3</sub>)<sub>2</sub>, Cadmium, CS<sub>2</sub>, chlorates, Cl<sub>2</sub>, CrO<sub>3</sub>, F<sub>2</sub>, Hydroxylamine, Pb(N<sub>3</sub>)<sub>2</sub>, MnCl<sub>2</sub>, HNO<sub>3</sub>, performic acid, KClO<sub>3</sub>, KNO<sub>3</sub>, N<sub>2</sub>O<sub>2</sub>, Selenium, NaClO<sub>3</sub>, Na<sub>2</sub>O<sub>2</sub>, Sulfur, Te, water, (NH<sub>4</sub>)<sub>2</sub>S, As<sub>2</sub>O<sub>3</sub>, CS<sub>2</sub>, CaCl<sub>2</sub>, chlorinated rubber, catalytic metals, halocarbons, o-nitroanisole, nitrobenzene, non metals, oxidants, paint primer base, pentacarbonoyliron, transition metal halides, seleninyl bromide, HCl, H<sub>2</sub>SO<sub>4</sub>, (Mg +Ba(NO<sub>3</sub>)<sub>2</sub> +BaO<sub>2</sub>), (ethyl acetoacetate +tribromoneopentyl alcohol. Contact with Alkali Hydroxides(Sodium Hydroxide, Potassium Hydroxide, Calcium Hydroxide, etc) results in evolution of hydrogen. Ammonium nitrate + zinc + water causes a violent reaction with evolution of steam and zinc oxide. May react with water.

**Special Remarks on Corrosivity:** Not available.

**Polymerization:** Will not occur.

### Section 11: Toxicological Information

**Routes of Entry:** Inhalation. Ingestion.

**Toxicity to Animals:** Not available.

**Chronic Effects on Humans:** Not available.

**Other Toxic Effects on Humans:** Slightly hazardous in case of skin contact (irritant), of ingestion, of inhalation.

**Special Remarks on Toxicity to Animals:** Not available.

**Special Remarks on Chronic Effects on Humans:** Not available.

**Special Remarks on other Toxic Effects on Humans:** Acute Potential Health Effects:

**Skin:** May cause skin irritation. Dermal exposure to zinc may produce leg pains, fatigue, anorexia and weight loss.

**Eyes:** May cause eye irritation.

**Ingestion:** May be harmful if swallowed. May cause digestive tract irritation with tightness in throat, nausea, vomiting, diarrhea, loss of appetite, aise, abdominal pain. fever, and chills. May affect behaviour/central nervous system and autonomic nervous system with ataxia, lethargy, staggering gait, mild derangement in cerebellar function, light headiness, dizziness, irritability, muscular stiffness, and pain. May also affect blood.

**Inhalation:** Inhalation of zinc dust or fumes may cause respiratory tract and mucous membrane irritation with cough and chest pain. It can also cause "metal fume fever", a flu-like condition characterized appearance of chills, headache fever, maliase, fatigue, sweating, extreme thirst, aches in the legs and chest, and difficulty in breathing. A sweet taste may also be present in metal fume fever, as well as a dry throat, aches, nausea, and vomiting, and pale grey cyanosis.

The toxicological properties of this substance have not been fully investigated.

### Section 12: Ecological Information



**Material Safety Data Sheet:  
Zinc Alloy  
MSDS-002**

Revision No.:	B
Issue Date:	05/07/2010
Pages:	4 of 4

**Ecotoxicity:** Not available.

**BOD5 and COD:** Not available.

**Products of Biodegradation:** Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

**Toxicity of the Products of Biodegradation:** Not available.

**Special Remarks on the Products of Biodegradation:** Not available.

**Section 13: Disposal Considerations**

**Waste Disposal:** Waste must be disposed of in accordance with federal, state and local environmental control regulations.

**Section 14: Transport Information**

**Transport:** Aluminium is considered stable under normal handling conditions. Keep Zinc metal clean and dry during transport.

**DISCLAIMER**

The information above is believed to be accurate and represents the best information currently available to MCPS Ltd. However, MCPS Ltd make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall MCPS Ltd be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if MCPS Ltd has been advised of the possibility of such damages.