

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

<b>Product Name:</b>	Mild Steel	<b>Contact Information:</b>	<b>Marine Cathodic Protection Systems Ltd</b>
<b>Synonym:</b>	Carbon and Alloy Steel, AISI/SAE		6A/B Throckley Way
<b>Chemical Name:</b>	None Allocated		Middlefields Industrial Estate
<b>Chemical Formula:</b>	None Allocated		South Shields
<b>Hazchem Code:</b>	None Allocated		Tyne & Wear
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**Section 2: Composition and Information on Elements**

Elements %	% by weight	Elements %	% by weight
<b>Aluminium</b>	<0.01% - 0.50%	<b>Lead</b>	<0.15% - 0.35%
<b>Bismuth</b>	<0.20% - 0.50%	<b>Manganese</b>	<0.04% - 0.70%
<b>Boron</b>	<0.01% - 1.00%	<b>Molybdenum</b>	<0.15% - 1.10%
<b>Carbon</b>	<0.10% - 1.50%	<b>Nickel</b>	<0.10% - 10.00%
<b>Chromium</b>	<0.40% - 100%	<b>Phosphorous</b>	<0.04% - 0.12%
<b>Columbium</b>	<0.15% - 0.35%	<b>Silicon</b>	<0.15% - 2.00%
<b>Copper</b>	<0.30% - 1.90%	<b>Sulphur</b>	<0.05% - 0.35%
<b>Iron</b>	<86.50% - 99.50%	<b>Vanadium</b>	<0.01% - 0.15%

The above is a summary of elements used in alloying steel. Various grades of steel will contain different combinations of these elements. Trace elements may also be present in minute amounts.

**Section 3: Hazards Identification**

**Potential Acute Health Effects:** Excessive inhalation of metallic fumes and dust may result in irritation of eyes, nose and throat. High concentrations of fumes and dust of iron-oxide, manganese, copper, zinc and lead may result in metal fume fever. Typical symptoms last from 12 to 48 hours and consist of a metallic taste in the mouth, dryness and irritation of the throat, chills and fever.

**Potential Chronic Health Effects:** Chronic and prolonged inhalation of high concentrations of fumes or dust of the following elements may lead to the conditions listed opposite the element.

**Aluminium:** May initiate fibrotic changes to lung tissue.

**Bismuth:** No chronic debilitating symptoms indicated.

**Boron:** No chronic debilitating symptoms indicated.

**Chromium:** Lesions of the skin and mucous membranes, possible cancer of the nose or lungs-bronchogenic carcinoma

**Copper:** No chronic debilitating symptoms indicated.

**Iron:** Siderosis, pulmonary effects.

**Lead:** Anemia, urinary dysfunction, weakness, constipation, nausea, nervous disorder.

**Manganese:** Bronchitis, pneumonitis, lack of coordination.

**Molybdenum:** Respiratory tract irritation, possible liver and kidney damage, bone deformity.

**Nickel:** Lesions of the skin and mucous membranes, possible cancer of the nose or lungs-bronchogenic carcinoma.

**Phosphorous:** Necrosis of the mandible.

**Sulphur:** (as Sulphur Dioxide) Edema of the lungs.

**Vanadium:** (as Vanadium Pentoxide) Emphysema, pneumonia.

**Zinc:** Gastrointestinal inflammation reported in animal studies.

**Section 4: First Aid Measures**

**Eye Contact:** Flush thoroughly with running water to remove particulate; obtain medical attention.

**Skin Contact:** Remove particles by washing thoroughly with soap and water. Seek medical attention if condition persists.

**Serious Skin Contact:** Not available.

**Inhalation:** If inhaled, remove to fresh air; if condition continues, consult a physician..

**Serious Inhalation:** Not available.

**Ingestion:** If significant amounts of metal are ingested, consult a physician.

**Serious Ingestion:** Not available.

**Section 5: Fire and Explosion Data**

**Flammability of the Product:** Non-flammable.

**Auto-Ignition Temperature:** Not available

**Flash Points:** Not available.

**Flammable Limits:** Not available.

**Products of Combustion:** Not available.

**Fire Hazards in Presence of Various Substances:** Not available

Non-flammable in presence of shocks.

**Explosion Hazards in Presence of Various Substances:** Steel products do not present fire or explosion hazards under normal conditions. Fine metal particles such as produced in grinding or sawing can burn. High concentrations of metallic fines in air may present an explosion hazard.

**Fire Fighting Media and Instructions:** SMALL FIRE: Use DRY chemical powder or sand.

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

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

#### Section 6: Accidental Release Measures

**Small Spill:** Fine turnings and small chips should be swept or vacuumed. Scrap metal can be reclaimed for reuse.

**Large Spill:** Fine turnings and small chips should be swept or vacuumed. Scrap metal can be reclaimed for reuse.

#### Section 7: Handling and Storage

**Precautions:** Keep away from heat and direct sunlight. Do not breathe dust.

**Storage:** Keep container tightly closed. Keep container in a cool, well-ventilated area. Keep from any possible contact with water.

#### 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:** Appropriate dust/mist/fume respirator should be used to avoid excessive inhalation of particulates. If exposure limits are reached or exceeded, use NIOSH approved equipment. Safety glasses should be worn when grinding or cutting. Face shields should be worn when welding or cutting. Protective gloves should be worn as required for welding, burning or handling operations.

**Exposure Limits:** Not available.

#### Section 9: Physical and Chemical Properties

**Physical state and appearance:** Solid.

**Odour:** Odourless.

**Taste:** Not available.

**Molecular Weight:** 7850 kg/m<sup>3</sup>.

**Colour:** Silver-grey

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

**Boiling Point:** Not applicable

**Melting Point:** 1,426–1,538°C (2,599–2,800°F)

**Critical Temperature:** Not available.

**Specific Gravity:** (H<sub>2</sub>O = 1): Approx. 1.47.

**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:** Not applicable.

#### Section 10: Stability and Reactivity Data

**Stability:** The product is stable.

**Instability Temperature:** Not available.

**Conditions of Instability:** Steel at temperatures above the melting point may liberate fumes containing oxides of iron and alloying elements. Avoid generation of airborne fumes and dust.

**Incompatibility with various substances:** Reacts with strong acids to form Hydrogen gas.

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

**Special Remarks on Reactivity:** Metallic dust or fumes may be produced during welding, burning, grinding and possible machining.

**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.

**Eyes:** May cause eye irritation.

**Ingestion:** May be harmful if swallowed.

**Inhalation:** Inhalation of steel dust or fumes may cause respiratory tract and mucous membrane irritation with cough and chest pain.

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

### Section 12: Ecological Information

**Ecotoxicity:** Not available.

**BOD5 and COD:** Not available.

**Products of Biodegradation:** Not available.

**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:** Mild Steel is considered stable under normal handling conditions. Keep Mild Steel clean and dry during transport.

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