# Material Safety Data Sheet

## Award Metals Bare Metal Drywall Trim

### SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

- **PRODUCT:** Metal Drywall Accessories
- **CHEMICAL FAMILY:** Metal Coated Steel

### SECTION 2 - INGREDIENTS

<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>CAS Number</th>
<th>Weight %</th>
<th>PEL(mg/m³)</th>
<th>TVL(mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron:</td>
<td>7439-89-6</td>
<td>95 - 99.9</td>
<td>10mg/m³ - Iron Oxide Fume</td>
<td>5mg/m³ - Iron Oxide Dust and Fume</td>
</tr>
<tr>
<td>Aluminum:</td>
<td>7429-90-5</td>
<td>0.01 - 0.5</td>
<td>15mg/m³ - Total Dust 5mg/m³ - Respirable Fraction</td>
<td>10mg/m³ - Metal Dust 5mg/m³ - Welding Fume</td>
</tr>
<tr>
<td>Carbon:</td>
<td>7440-44-0</td>
<td>0.001 - 0.6</td>
<td>15mg/m³ - Total Dust (PNOR)³ 5mg/m³ - Respirable Fraction (PNOR)</td>
<td>10mg/m³ - Inhalable Fraction⁴ (PNOS)⁵ 3mg/m³ - Respirable Fraction⁶ (PNOS)</td>
</tr>
<tr>
<td>Chromium:</td>
<td>7440-47-3</td>
<td>0 - 0.7</td>
<td>1mg/m³ - Chromium Metal</td>
<td>0.5mg/m³ - Chromium Metal &amp; Cr compounds</td>
</tr>
<tr>
<td>Copper:</td>
<td>7440-50-8</td>
<td>0.005 - 0.4</td>
<td>0.1mg/m³ - Fume (as Cu) 1mg/m³ - Dusts &amp; Mists (as Cu)</td>
<td>0.1mg/m³ - Fume 1mg/m³ - Dusts &amp; Mists (as Cu)</td>
</tr>
<tr>
<td>Manganese:</td>
<td>7439-96-5</td>
<td>0.05 - 2.0</td>
<td>5mg/m³ (C) - Fume &amp; Mn compounds</td>
<td>0.2mg/m³</td>
</tr>
<tr>
<td>Nickel:</td>
<td>7440-02-0</td>
<td>0.004 - 0.5</td>
<td>1mg/m³ - Metal &amp; Insoluble compounds (as Ni)</td>
<td>1.5mg/m³ - Elemental Nickel (as Ni) 0.2mg/m³ - Insoluble compounds</td>
</tr>
</tbody>
</table>

**Notes:**
All steel products contain small amounts of various elements in addition to those listed, and they are referred to as trace elements. These trace elements are in the steel naturally. Typical Amounts are as follows:

- Boron <0.005 max, typically 0.001%
- Calcium <0.005 max, typically 0.0003%<br>Sulfur <0.04 max, typically 0.007%
- Columbium <0.15 max, typically 0.002%<br>Tin <0.03 max, typically 0.002%
- Molybdenum <0.4 max typically 0.006%<br>Titanium <0.15 max, typically 0.002%
- Phosphorous <0.1 max, typically 0.01 %<br>Vanadium <0.15 max, typically 0.001%

Percentages are shown as max and typical concentrations of trace elements for the purpose of showing the potential hazards of the finished product.

1. OSHA Permissible Exposure Limits (PELS) are 8-hour TWA (time-weighted average) concentrations unless otherwise noted. A ("C") designation denotes a ceiling limit, which should not be exceeded during any part of the working exposure unless otherwise noted. A Short Term Exposure Limit (STEL) is defined as a 15-minute exposure, which should not be exceeded at any time during a workday.
2. Threshold Limit Values (TLV) established by the American Conference of Governmental Industrial Hygienists (ACGIH) are 8-hour TWA concentrations unless otherwise noted.
3. PNOR (Particulates Not Otherwise Regulated). All inert or nuisance dusts, whether mineral, inorganic, or organic, not listed specifically by substance name are covered by a limit which is the same as the inert or nuisance dust limit of 15mg/m³ for total dust and 5 mg/m³ for the respirable fraction.
4. Inhalable fraction. The concentration of inhalable particulate for the application of this TLV is to be determined from the fraction passing a size-selector with the characteristics defined in the ACGIH TLVs and BEIs Appendix D, paragraph A.
5. PNOS (Particulates Not Otherwise Specified). Particulates identified under the PNOS heading are "nuisance dusts" containing no asbestos and <1% crystalline silica. A TWA-TLV of 10 mg/m³ for inhalable particulate and 3 mg/m³ for respirable particulate has been recommended.
6. Respirable fraction. The concentration of respirable dust for the application of this limit is to be determined from the fraction passing a size-selector with the characteristics defined in the ACGIH TLVs and BEIs Appendix D, paragraph C.
SECTION 3 - HAZARDS IDENTIFICATION

Emergency Overview

This formed solid metal product poses little or no immediate health or fire hazard. When product is subjected to welding, burning, melting, sawing, brazing, grinding or other similar processes, potentially hazardous airborne particulate and fumes may be generated. These operations should be performed in well ventilated areas. Avoid inhalation of dust and fumes. Iron or steel foreign bodies imbedded in the cornea of the eye could produce rust stains if not removed quickly. Appropriate respiratory and eye protection as well as other personal protection equipment should be used.

Chemical Surface Treatments/Coatings: The possible presence of chemical surface treatments and oil coatings should be considered when evaluating potential health hazards and exposures during handling and welding or other fume generating activities. Removal of surface coatings should be considered prior to such activities. Repeated or prolonged contact with chemical surface treatments or oil residue may cause skin irritation, dermatitis, ulceration or allergic reactions in sensitized individuals. Torching or burning operations on steel products with surface treatments, oil coatings, paint or acrylic films may produce emissions that can be irritating to the eyes and respiratory tract.

Potential Health Effects: Routes of Exposure: Inhalation, Ingestion, Skin Contact. Steel in its natural state does not present an inhalation, ingestion or contact hazard. However, operations such as burning, welding, sawing, brazing, machining and grinding may result in the following effects if exposures exceed recommended limits as listed in Section 2.

Target Organs: Respiratory system.

Acute Effects:

Inhalation: Excessive exposure to high concentrations of dust may cause irritations to the eyes, skin and mucous membranes of the upper respiratory tract. Excessive inhalation of fumes or dust from many metals can produce a reaction known as metal fume fever. Symptoms consist of chills and fever metallic taste in mouth, dryness and irritation of the throat followed by weakness and muscle pain. The symptoms come on in a few hours after excessive exposure and usually last 12 to 48 hours. Long term effects from metal fume fever have not been noted. Fumes from manganese and copper have been associated with causing metal fume fever. Inhalation of chromium compounds may cause upper respiratory tract irritation. Sulfur compounds, present in fumes may irritate the gastrointestinal tract. Boron oxide, molybdenum, nickel phosphorus oxide and vanadium compounds, especially vanadium pentoxide are respiratory tract irritants. Excessive inhalation of calcium oxide dusts may cause severe irritation and burns of the respiratory tract.

Ingestion: Ingestion of harmful amounts of this product as distributed is unlikely due to its insoluble form. Ingestion of dust may cause nausea or vomiting.

Eyes: Particles of iron or iron compounds could become imbedded in the eye. Torching or burning operations on steel products with surface treatments, oil coatings, or acrylic films may be irritating to the eyes. Sulfur compounds, present in generated fumes, may irritate the eyes. Calcium oxide, molybdenum and vanadium compounds, especially vanadium pentoxide are eye irritants.

Skin: Skin contact with metallic fumes and dust may cause physical abrasion. Sulfur compounds present in generated fumes may irritate the skin. Calcium oxide chromium, molybdenum and vanadium compounds, especially vanadium pentoxide, are skin irritants. Exposure to nickel may cause contact and atopic dermatitis and allergic sensitization. Repeated or prolonged contact with chemical surface treatments may cause skin irritation, dermatitis, ulceration or allergic reactions in sensitized individuals.
SECTION 3 - HAZARDS IDENTIFICATION (cont.)

**Chronic effects:** Chronic inhalation of metallic fumes and dusts are associated with the following conditions:

**Iron Oxide:** Chronic inhalation of excessive concentrations of iron oxide fumes or dust may result in the development of a benign pneumoconiosis called siderosis, which is observable as an x-ray change. No physical impairment of lung function has been associated with siderosis. Inhalation of excessive concentrations of ferric oxide may enhance the risk of lung cancer development in workers exposed to pulmonary carcinogens. Iron oxide is listed as a Group 3 (not classifiable) carcinogen by IARC.

**Aluminum:** Aluminum dust/fines are a low health risk by inhalation and should be treated as a nuisance dust. Aluminum dust is a respiratory and eye irritant.

**Boron:** Boron oxide dust and fumes may cause upper respiratory tract and eye irritation, dryness of mouth, nose or throat and sore throat and productive cough.

**Calcium:** Depending on the concentrations and duration of exposure, repeated or prolonged inhalation may cause inflammation of the respiratory passages, ulcers of the mucous membranes, and possible perforation of the nasal septum. Repeated or prolonged skin contact may cause dermatitis.

**Carbon:** Chronic inhalation of high concentrations to carbon may cause pulmonary disorders.

**Chromium:** The health hazards associated with exposure to chromium are dependant upon its oxidation state. The metal form (chromium as it exists in this product) is of very low toxicity. The hexavalent form is very toxic. Repeated or prolonged exposure to hexavalent chromium compounds may cause respiratory irritation, nosebleed, ulceration and perforation of the nasal septum. Industrial exposure to certain forms of hexavalent chromium has been related to an increased incidence of cancer. The national Toxicology Program (NTP) Fourth Annual report on carcinogens cites "certain chromium compounds" as human carcinogens. ACGIH has reviewed the toxicity data and concluded that chromium metal is not classified as a human carcinogen.

**Columbium:** No reports of human intoxication. There is no evidence of a human hazard due to inhalation. Can cause eye and skin irritation.

**Copper:** Inhalation of high concentrations of freshly formed oxide fumes and dusts of copper can cause metal fume fever. Chronic inhalation of copper dust has caused in animals, hemolysis of the red blood cells, deposition of hemofuscin in the liver and pancreas, injury to lung cells and gastrointestinal symptoms.

**Manganese:** Chronic exposure to high concentrations of manganese fumes and dust may adversely affect the central nervous system with symptoms including languor, sleepiness, weakness, emotional disturbances, spastic gait, mask-like facial expression and paralysis. Animal studies indicate that manganese exposure may increase susceptibility to bacterial and viral infections.

**Molybdenum:** Certain handling operations such as burning and welding, may generate both insoluble molybdenum compounds (metal and molybdenum dioxide) and soluble molybdenum compounds (molybdenum trioxide). Molybdenum compounds generally exhibit a low order of toxicity with the trioxide the more toxic. However, some reports indicate that the dust of the molybdenum metal, molybdenum dioxide and molybdenum trioxide may cause eye, skin, nose and throat irritation in animals.

**Nickel:** Exposure to nickel dusts and fumes can cause sensitization dermatitis, respiratory irritation, asthma, pulmonary fibrosis, edema and may cause nasal or lung cancer in humans. IARC lists nickel and certain nickel compounds as Group 2B carcinogens (sufficient animal data). ACGIH 2001 TLVs® and BEIs® lists insoluble nickel compounds as confirmed human carcinogens.

**Phosphorus:** Inhalation of phosphorus oxides may cause respiratory irritation.

**Silicon:** Silicon dusts are a low health risk by inhalation and should be treated as a nuisance dust. Eye contact with pure material can cause particulate irritation. Skin contact with silicone dusts may cause physical abrasion.

**Sulfur:** Sulfur compounds, present in the fumes, may irritate the skin, eyes, lungs and gastrointestinal tract.

**Titanium:** No systemic effects have been reported from industrial exposure to tin. However, exposure to dust and fume of tin (oxide) is recognized to result in a benign pneumoconiosis called stannosis. No cases of massive fibrosis from over-exposure to tin have been reported.

**Titanium:** There is no evidence of a health hazard from inhalation of titanium dioxide at airborne concentrations below 10 mg/m3. The toxicity of titanium dioxide has been found to be relatively inert. Eye contact with pure material can cause particulate irritation. Skin contact with titanium dusts may cause physical abrasion.
SECTION 3 - HAZARDS IDENTIFICATION (cont.)

Vanadium: Excessive long term or repeated exposure to vanadium compounds especially the pentoxide, may result in chronic pulmonary changes such as emphysema or bronchitis.

Zinc: Welding and burning on zinc coated steel has been implicated in cases of metal fume fever. Latent liver dysfunction and gastrointestinal disturbances with pressure in the stomach region, nausea, and weakness have been reported from repeated inhalation zinc oxide. Repeated or prolonged skin contact to zinc oxide, coupled with poor personal hygiene may result in "oxide pox" due to clogging of sebaceous glands. "Oxide Pox", especially localized to moist areas is characterized by small red hard projecting papules with a central white plug, which develops into a pustule with intense itching. The lesions usually clear within 7-10 days. Repeated or prolonged eye contact with zinc oxide fume may produce conjunctivitis.

Long-term inhalation exposure to high concentrations (over exposure) to pneumoconiotic agents may act synergistically with inhalation of oxides, fumes, dusts of this product to cause toxic effects.

Carcinogenicity: IARC, NTP, and OSHA do not list steel products as carcinogens. The international Agency for Research on Cancer (IARC) identifies nickel and certain nickel compounds and welding fumes as Group 2B carcinogens that are possibly carcinogenic to humans. IARC lists chromium metal and trivalent chromium compounds as Group 3 carcinogens not classifiable as to their human carcinogenicity. Hexavalent chromium compounds are listed by IARC as Group 1 of accidental carcinogens that are carcinogenic to humans.

Medical Conditions Aggravated by Long-Term Exposure: Individuals with chronic respiratory disorders (i.e., asthma, chronic bronchitis, emphysema, ect.) may be adversely affected by any fume or airborne particulate matter exposure. SARA Potential Hazard Categories: Immediate Acute Health Hazard, Delayed Chronic Health Hazard.

SECTION 4 - FIRST AID MEASURES

Inhalation: For over-exposure to airborne fumes and particulate, remove exposed person to fresh air. If breathing is difficult or has stopped, administer artificial respiration or oxygen as needed. Seek medical attention promptly.

Ingestion: Not a probable route of industrial exposure. However, if ingested, seek medical attention immediately.

Eyes: Flush with large amounts of clean water to remove particles. Seek medical attention if irritation persists.

Skin: Remove contaminated clothing. Wash affected areas with soap or mild detergent and water. If thermal burn has occurred flush area with cold water and seek medical attention. If mechanical abrasion has occurred, seek medical attention.

SECTION 5 - FIRE FIGHTING MEASURES

Flash Point: Not applicable

Flammable Limits Burning Rate: Not applicable

Upper Explosion Limits: Not applicable

Lower Explosion Limits: Not applicable

Auto Ignition Temperature: Not applicable

Flamability Classification: Non-flammable, non-combustible

Suitable Extinguisher Media: Not applicable for solid product. Carbon dioxide blanket, water spray, dry powder, foam

Special Fire-Fighting Procedures: Full-face self-contained breathing apparatus (SCBA) used in positive pressure mode should be worn to prevent inhalation of airborne contamnates. Do not release runoff from fire control methods to sewers or waterways.

Hazardous Combustion Products: At temperatures above the melting point, fumes containing metal oxides and toher alloying elements may be liberated. If present, surface treatments such as corrosion-inhibiting oils, resin, or coatings on the product may yield noxious gases such as the oxides of carbon.

Unusual Fire/Explosion Hazards: High concentrations of airborne metallic fines may present an explosion hazard. Not applicable for solid product. Molten metal may react violently with water. Do not use water on molten metal.
SECTION 6 - ACCIDENTAL RELEASE MEASURES

Spill/Leak Procedures: Not applicable to metal in solid state. For spills involving finely divided particles, personnel should be protected against contact with eyes and skin. If material is in a dry state, avoid inhalation of dust. Fine, dry material should be removed by vacuuming or wet sweeping methods to prevent spreading of dust. Avoid using compressed air. Do not release into sewers or waterways. Collect material in appropriate, labeled containers for recovery or disposal in accordance with federal, state and local regulations.

Regulatory Requirements: Follow applicable OSHA regulations (29 CFR 1910.120) and all other pertinent state and federal requirements.

Disposal: Contact your supplier or a licensed contractor for detailed recommendations. Follow applicable Federal, state and local regulations.

SECTION 7 - HANDLING & STORAGE

Handling: Use lifting and work devices (e.g., crane, hoist, etc.) within rated capacities and in accordance with manufacturer’s instructions when handling these products. Operations with the potential for generating high concentrations of airborne particles should be evaluated and controlled as needed.

Storage: Store away from acids and incompatible materials.

SECTION 8 - EXPOSURE CONTROLS - PERSONAL PROTECTION

Respiratory Protection: Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear a NIOSH-approved respirator. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination and presence of sufficient oxygen.

Ventilation: Provide general or local exhaust ventilation systems to minimize airborne concentrations. Local exhaust ventilation is preferred because it prevents contaminant dispersion into the work area by controlling it and its source.

Administrative Controls: Do not use compressed air to clean-up accumulated material or dust. Minimize generation of airborne emissions.

Protective Clothing/Equipment: For operations which result in elevating the temperature of the product to or above its melting point or result in the generation of airborne particulates, use protective clothing, gloves and safety glasses to prevent skin and eye contact. Contact lenses should not be worn where industrial exposures to this material are likely. Use safety glasses or goggles as required for welding, burning, sawing, brazing, grinding or machining operations. Protective gloves should be worn as required for welding, burning or handling operations. Where the oil coating is applied to the product, wear gloves when handling, do not continue to use gloves or work clothing that has become saturated or soaked through with oil coating. Wash skin that has been exposed to oil with soap and water or waterless hand cleaner.

Engineering Controls: Use controls as appropriate to minimize exposure to metal fumes and dust during handling operations.

SECTION 9 - PHYSICAL & CHEMICAL PROPERTIES

Physical State: Solid Water Solubility: Insoluble

Appearance and Odor: Metallic Gray, Odorless Other solubility: Not applicable

Odor Threshold: Not applicable Boiling Point: Not applicable

Vapor Pressure: Not applicable Viscosity: Not applicable

Vapor Density (Air= 1): Not applicable Refractive Index: Not applicable

Formula Weight: Not applicable Surface Tension: Not applicable

Density: 7.85 % Volatile: Not applicable

Specific Gravity (H₂O =1, at 4°C): 7.85 Evaporation Rate: Not applicable

pH: Not applicable

Freezing/Melting Point: Base Metal - 2750°F
SECTION 10 - STABILITY & REACTION

Stability: Steel products are stable under normal storage and handling conditions.

Hazardous Polymerization: Will not occur

Conditions to Avoid: Avoid storage with strong acids or calcium hypochlorite. Molten metal may react violently with water.

Incompatible Materials: Will react with strong acids to form hydrogen. Iron oxide dusts in contact with calcium hypochlorite evolve oxygen and may cause an explosion.

Hazardous Decomposition: Thermal oxidative decomposition of steel products can produce fumes containing oxides of iron, zinc, manganese as well as other elements. If present, surface treatments such as corrosion-inhibiting oils, resin, or coatings on the product may yield noxious gases such as the oxides of carbon upon thermal oxidative decomposition.

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity: No data available for the product as a whole. However, individual components of the product have been found to be toxic to the environment. Metal dusts may migrate into soil and groundwater and be ingested by wildlife.

Environmental Fate: No data available.

Environmental Degradation: No data available.

Soil Absorption/Mobility: No data available for the product as a whole. However, individual components of the product have been found to be absorbed by plants from soil.
SECTION 13 - DISPOSAL CONSIDERATIONS

**Disposal:** This material is considered to be a solid waste, not a hazardous waste. Follow applicable Federal, state, and local regulations for disposal of solid waste and airborne particulates accumulated during handling operations of the product. Waste steel products can be recycled for further use.

**Disposal Regulatory Requirements:** None

**Container Cleaning and Disposal:** Follow applicable Federal, state and local regulations. Observe safe handling precautions.

SECTION 14 - TRANSPORT INFORMATION

**DOT Transportation Data** (49 CFR 172.101): Metal Coated steel sheet are not listed as hazardous substances under 49 CFR 172.101.

SECTION 15 - REGULATORY INFORMATION

**Regulatory Information:** The following listing of regulations relating to an Award Metals product may not be complete and should not be solely relied upon for all regulatory compliance responsibilities. This product and/or its constituents are subject to the following regulations:

**OSHA Regulations:**
- Air Containment (29 CFR 1910.1000, Table Z-1, Z-1-A): Steel products as a whole is not listed. However, individual components of the product are listed.

**U.S. EPA Regulations:**
- **RCRA:** Chromium and Nickel are regulated under this act.
- **CERCLA:** Hazardous Substance (40 CFR 302.4): The product as a whole is not listed. However, individual components of the product are listed: Chromium, Copper, Manganese, Nickel, Phosphorous and Zinc compounds are listed under SARA 302.
- **SARA 311/312 Codes:** Immediate (acute) health hazard and delayed (chronic) health hazard
- **SARA 313:** Aluminum (fume or dust), Chromium, Copper, Manganese, Nickel, Phosphorous and Zinc (fume or dust) are subject to SARA 313 reporting requirements. Please also note that if you prepackage or otherwise redistribute this product to industrial customers, SARA 313 requires that a notice be sent to those customers.
- **Clean Water Act:** Chromium, Copper, Nickel and Zinc are Section 307 Priority Pollutants. Phosphorous is a Section 311 hazardous chemical.
- **Safe Drinking Water Act:** Aluminum, Boron, Chromium, Copper, Iron, Manganese, Molybdenum, Nickel, Vanadium and Zinc are regulated under this act.
- **State Regulations:** The product as a whole is not listed in any state regulations. However, individual components of the product are listed in various state regulations:
- **Pennsylvania Right to Know:** Contains regulated material in the following categories:
  - **Hazardous Substances:** Calcium, Molybdenum, Silicon, Sulfur and Tin
  - **Environmental Hazards:** Aluminum, Chromium, Copper, Manganese, Nickel, Phosphorous, Vanadium and Zinc
  - **Special Hazard Substances:** Chromium and Nickel
- **New Jersey Right to Know:** Contains regulated material in the following categories
  - **Environmental Hazardous Substance:** Aluminum (fume or dust), Chromium, Copper, Manganese, Nickel, Phosphorous and Vanadium (fume or dust)
  - **Special Health Hazard Substances:** Not regulated
- **California Prop. 65:** This product may contain an extremely small amount of lead in the metallic coating. Per customer specification, an extremely small amount of hexavalent chromium passivation treatment may be applied to the surface of product. Lead, nickel and hexavalent chromium are materials known to the state of California to cause cancer or reproductive toxicity.
- **Other regulations:** The product as whole is not listed in any state regulations. However, individual components of the product are listed in various state regulations.

**WHMIS (Canadian):** D2B Product Classification