



International Steel Group Incorporated

MATERIAL SAFETY DATA SHEET
 Date Issued: March 2000

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION INFORMATION
Product Name: Electrolytic Tin Coated Sheet
Electrolytic Tin Plate
 Synonym(s): Tin Mill Products
 Tin Coated Sheet
 Tin Plate

 International Steel Group Incorporated
 3250 Interstate Drive
 Richfield, Ohio 44286

2. COMPOSITION INFORMATION ON INGREDIENTS

COMPONENTS	CAS No.	Wt. %	OSHA PEL (mg/M ³)	ACGIH TLV (mg/M ³)	LD50 or LC50 Species/Route
Base Metal					
Iron (Fe)	7439-89-6	>95	10 - Iron Oxide Fume	5 - Iron Oxide Fume as Fe	5.4 gm/kg mouse/oral
Carbon (C)	7440-44-0	0.02-0.2	Not Established	Not Established	No Information
Chromium (Cr)	7440-47-3	0.01-0.06	1-Chromium Metal as Cr 0.5 - Chromium (II, III) Compounds as Cr 0.1 - Chromates as CrO ₃	0.5 - Chromium Metal 0.5 - Chromium (II, III) Compounds as Cr 0.05 - Chromium (VI) Compounds as Cr	No Information
Manganese (Mn)	7439-96-5	0.15-0.8	5 - Ceiling as Mn	5 - Dust as Mn 1 - Fume as Mn 3 - Fume as Mn (STEL)	9 gm/kg rat/oral
Nickel (Ni)	7440-02-0	0.01 - 0.06	1 - Metal as Ni 1 - Insoluble Compounds as Ni 1 - Soluble Compounds as Ni	1 - Metal 1 - Insoluble Compounds as Ni 0.1 - Soluble Compounds as Ni	No Information
Silicon (Si)	7440-21-3	0.001 - 0.03	15 - Total Dust 5 - Respirable Fraction	10	No Information
Metallic Coating		0.04 - 0.2* 0.1 - 1.8**			
Tin (Sn)	7440-31-5	>99.85	2 - Inorganic Compounds as Sn	2 - Metal and Inorganic Compounds as Sn	No Information

Material may contain trace or residual elements. The following are typical percentages for the elements identified: aluminum 0.05%, antimony 0.0002%, arsenic 0.00005%, bismuth 0.0004%, boron 0.0001%, copper 0.02%, lead 0.00007%, molybdenum 0.002%, niobium (columbium) 0.001%, phosphorous 0.01%, silver 0.00002%, sulfur 0.015%, tin 0.004%, titanium 0.002%, and vanadium 0.001%.

* Electrolytic tin coated sheet.

** Electrolytic tin plate.

3. HAZARDS IDENTIFICATION

Potential Health Effects: Electrolytic tin coated steel products in their usual physical form do not pose a health hazard. Inhalation of metal dust and fume may result from further processing of the material by user, particularly during welding, burning, grinding, and machining activities, and should be evaluated by an industrial hygienist. Presented below are the potential health effects that have been identified for the ingredients listed which are of an industrial hygiene significance.

Iron Oxide: Long-term excessive inhalation exposure to iron oxide fume or dust has been associated with a benign lung condition known as siderosis. No physical impairment of lung function has been linked to siderosis.

Tin (Sn): The toxicity of inorganic tin compounds is generally low. Exposure to the dust or fume of tin oxides can result in a benign pneumoconiosis called stannosis. No tissue reaction or pulmonary dysfunction has been associated with this lung condition.

Usual Route(s) of Entry: Inhalation

Medical Conditions Possibly Aggravated: Individuals with chronic diseases or disorders of the respiratory system should consult a physician regarding workplace exposure to ingredients.

Carcinogen References: IARC NTP OSHA
Not Applicable

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4. FIRST AID MEASURES

Eye: Treat for foreign body in the eye. Seek medical attention.

Skin: Not anticipated to pose a significant skin hazard. However, should dermatitis develop, wash affected area thoroughly with mild soap and water. If irritation or other symptoms develop, seek medical attention.

Ingestion: Not considered an ingestion hazard.

Inhalation: Remove from excessive exposure levels. Seek medical attention. Give artificial respiration if breathing has stopped.

5. FIRE FIGHTING MEASURES

Steel products do not present fire or explosion hazards under normal conditions. Molten metal may react violently with water. High concentrations of metallic fines in the air may present an explosion hazard.

Fire fighters are to wear full protective equipment, including full bunker gear and SCBA respiratory protection.

6. ACCIDENTAL RELEASE MEASURES

Any excess product can be recycled for further use, disposed in an appropriately permitted waste landfill, or disposed by other methods which are in accordance with local, state, and federal regulations.

7. HANDLING AND STORAGE

Work Practices: Use lifting and work devices, e.g., crane, hoist, etc., within rated capacities and in accordance with manufacturer's instructions when handling these products.

Should be handled in ways to minimize generation of airborne dust and fume.

Nonmetallic coatings, i.e. oils, may be applied (generally at the customer's request) to the surface of these products. Burning or welding on steel products with nonmetallic coatings may produce emissions which may cause eye and respiratory tract irritation or other respiratory system effects. The possible presence of these coatings should be recognized and considered when evaluating potential employee health hazards and exposures during handling and welding or other dust/fume generating activities. Typical nonmetallic coatings include acetyl tributyl citrate or n-butyl stearate oils. Prolonged contact with these oils may cause skin irritation and should be avoided.

8. EXPOSURE CONTROLS /PERSONAL PROTECTION

Engineering Controls (Ventilation, etc.): Provide ventilation sufficient to maintain exposure levels below the applicable exposure limits.

When airborne emissions may occur due to further processing: (1) avoid breathing dust and fume, (2) evaluate potential employee exposure, (3) minimize generation of airborne emissions, (4) maintain surfaces free as practical of accumulated material, (5) use protective clothing as specified by an industrial hygienist or safety professional where exposure levels may be excessive, (6) do not smoke in work area, (7) wash hands before eating, drinking or smoking and after handling, (8) change contaminated clothing before leaving work premises.

Removal of surface coatings should be considered prior to welding or other fume generating activities.

Eye Protection: Use safety glasses and/or other protective eyewear as specified by a safety professional where risk of eye injury is present.

Skin Protection: Not anticipated to pose significant skin hazard. Use gloves (i.e., cotton, leather or kevlar) and/or protective clothing (i.e., Tyvek, cotton) as specified by an industrial hygienist or safety professional where exposure levels are excessive or where handling material could result in punctures or cuts to the hands or arms.

Respiratory Protection: When engineering controls are not feasible or sufficient to lower exposure levels below the applicable exposure limit, use a NIOSH-approved respirator which protects against dust or fume as specified by an industrial hygienist or qualified safety professional in accordance with manufacturer instructions and use limitations.

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9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Solid
Specific Gravity: 7.6 to 7.8
Appearance and Odor: Shiny metal; no odor
Melting Point: 2800°F

10. STABILITY AND REACTIVITY

Chemical Stability: Stable
Conditions to Avoid: Acids
Hazardous Decomposition Products: Metal oxides of listed ingredients and carbon monoxide from nonmetallic coatings.
Hazardous Polymerization: Will not occur

11. TOXICOLOGICAL INFORMATION

See available LD50 and/or LC50 information in Section 2.

12. ECOLOGICAL INFORMATION

Steel products in their usual form do not pose an ecological hazard.

13. DISPOSAL CONSIDERATION

Any excess product can be recycled for further use, disposed in an appropriately permitted waste landfill, or disposed by other methods which are in accordance with local, state, and federal regulations.

14. TRANSPORT INFORMATION

Not a hazardous material for DOT shipping.

15. REGULATORY INFORMATION

SARA Title III Hazard Categories: This material is considered, under applicable definitions, to meet the following categories.

- Immediate (acute) Health
- Reactive
- Delayed (chronic) Health
- Fire
- Sudden Release of Pressure

Sodium dichromate treatment has been used on this product. Chromium VI was not detected in the final product.

Tin contains naturally occurring trace amounts of lead. Users may need to evaluate their product to determine if special governmental regulations apply. Additional information may be obtained from the National Food Processors Association.

16. OTHER INFORMATION

The following label hazard ratings are recommended:

NFPA		HMIS	
Fire	0	Health	0
Health	0	Flammability	0
Reactivity	0	Reactivity	0
Specific Hazard	None		

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INTERNATIONAL STEEL GROUP INCORPORATED

Contains: Carbon (CAS 7440-44-0), Chromium (CAS 7440-47-3), Iron (CAS 7439-89-6), Manganese (CAS 7439-96-5), Nickel (CAS 7440-02-0) Silicon (CAS 7440-21-3) and Tin (CAS 7440-31-5)

CAUTION

Hazards: Inhalation of metal dust and fume may result from further processing of the material by the user, particularly during welding, burning, cutting, grinding and machining activities. Long-term excessive exposure to the fume or dust may cause respiratory system effects.

Recommended Handling Procedures:

- Avoid creating excessive dust or fume levels. Mechanical ventilation or personal protective equipment (i.e., eye protection, protective clothing and NIOSH-approved respiratory protection) may be necessary during welding, burning, grinding and other dust/fume generating activities.
- The presence of nonmetallic coating oils on these products should be considered when evaluating potential employee health hazards. Removal of surface coatings should be considered prior to welding or other dust/fume generating activities. Avoid prolonged skin contact with nonmetallic coating oils

FIRST AID AND MEDICAL EMERGENCY PROCEDURES

Eye Contact: Treat for foreign body in the eye. Seek medical attention.

Skin Contact: Not anticipated to pose a significant skin hazard. However, should dermatitis develop, wash affected area with mild soap and warm water. Seek medical attention if conditions persist.

Inhalation: Remove from excessive exposure levels. Seek medical attention. Give artificial respiration if breathing has stopped.

Ingestion: Not considered an ingestion hazard.

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