

Section 1 – Identification

1(a) Product Identifier used on Label: Galvanized Steel Scrap

1(b) Other means of identification: Galvanized Steel Scrap Products (All Grades), SDS ID: FE-0103

1(c) Recommended use of the chemical and restrictions on use: Scrap metal use. None Known

1(d) Name, address, and telephone number:



OmniSource Corporation Phone: (260) 664-4789 (Safety Department)
 7575 West Jefferson Blvd
 Fort Wayne, Indiana 46804

1(e) Emergency Phone Number: (800) 424-9300 (CCN# 221258) CHEMTREC

Section 2 – Hazard(s) Identification

2(a) Classification of the chemical: Galvanized Steel Scrap is considered an article under Reach regulation (REACH REGULATION (EC) No 1907/2006) and is not subject to classification under CLP regulation (REGULATION (EC) No 1272/2008). However, Galvanized Steel Scrap is not exempt as an article under OSHA's Hazard Communication Standard (29 CFR 1910.1200) due to its downstream use, thus this product is considered a mixture and a hazardous material. Therefore, the categories of Health Hazards as defined in "GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELING OF CHEMICALS (GHS), Third revised edition ST/SG/AC.10/30/Rev. 3" United Nations, New York and Geneva, 2009 have been evaluated. Refer to Section 3, 8 and 11 for additional information.

2(b) Signal word, hazard statement(s), symbols and precautionary statement(s):

| Hazard Symbol | Hazard Classification | Signal Word | Hazard Statement(s) |
|--|---|-------------|--|
|  | Single Target Organ Toxicity (STOT) Repeat Exposure-1 | Danger | Causes damage to central nervous system, and lungs through prolonged or repeated exposure. Harmful if swallowed. May cause respiratory irritation. Causes eye irritation. |
|  | Acute Toxicity-Oral - 4 STOT Single Exposure - 3 | | |
| NA | Eye Irritation - 2B | | |

Precautionary Statement(s):

| Prevention | Response | Storage/Disposal |
|---|--|--|
| Do not breathe dusts or fume. Use only outdoors or in well ventilated areas. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. | Get medical advice/attention if you feel unwell. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue Rinsing. if eye irritation persists: Get medical advice/attention. If swallowed: Call a poison center/doctor if you feel unwell. Rinse mouth | Dispose of contents in accordance with federal, state and local regulations. |

2(c) Hazards not otherwise classified: None Known

2(d) Unknown acute toxicity statement (mixture): None Known

Section 3 – Composition/Information on Ingredients

3(a-c) Chemical name, common name (synonyms), CAS number and other identifiers, and concentration:

| Chemical Name | CAS Number | EC Number | % weight |
|---------------|------------|-----------|----------|
| Iron | 7439-89-6 | 231-096-4 | <90 |
| Zinc Oxide | 1314-13-2 | 215-222-5 | <5 |
| Manganese | 7439-96-5 | 231-105-1 | <2 |

EC - European Community

CAS - Chemical Abstract Service

Commercial steel products contain small amounts of various elements in addition to those listed. These small quantities are frequently referred to as "trace" or "residual" elements that generally originate in the raw materials used. Steel products may contain the following trace or residual elements at below 0.1%: carbon, calcium, copper, tin, silicon, aluminum, titanium, arsenic, lead, niobium, boron, chromium, cobalt, vanadium, zirconium, molybdenum, and nickel.

Section 4 – First-aid Measures

4(a) Description of necessary measures:

- Inhalation:** Galvanized Steel Scrap as sold/shipped is not a likely form of exposure. If inhaled: Remove person to fresh air and keep comfortable for breathing.

Section 4 – First-aid Measures (continued)

4(a) Description of necessary measures:

- **Eye Contact: Galvanized Steel Scrap** as sold/shipped is not a likely form of exposure. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
- **Skin Contact:** If a rash should develop, seek medical advice.
- **Ingestion: Galvanized Steel Scrap** as sold/shipped is not a likely form of exposure. If swallowed: Call a poison center or doctor/physician if you feel unwell. Rinse mouth.

4(b) Most important symptoms/effects, acute and delayed (chronic):

- **Inhalation: Galvanized Steel Scrap** as sold/shipped is not likely to present an acute or chronic health effect.
- **Eye: Galvanized Steel Scrap** as sold/shipped is not likely to present an acute or chronic health effect.
- **Skin: Galvanized Steel Scrap** as sold/shipped is not likely to present an acute or chronic health effect.
- **Ingestion: Galvanized Steel Scrap** as sold/shipped is not likely to present an acute or chronic health effect.

However, during further processing (welding, grinding, burning, etc.) individual components may illicit an acute or chronic health effect. Refer to Section 11-Toxicological Information.

4(c) Immediate Medical Attention and Special Treatment: None Known

Section 5 – Fire-fighting Measures

5(a) Suitable (and unsuitable) Extinguishing Media: Not Applicable for **Galvanized Steel Scrap** as sold/shipped. Use extinguishers appropriate for surrounding materials.

5(b) Specific Hazards arising from the chemical: Not Applicable for **Galvanized Steel Scrap** as sold/shipped. When burned, toxic smoke, fume and vapor may be emitted.

5(c) Special protective equipment and precautions for fire-fighters: Self-contained NIOSH approved respiratory protection and full protective clothing should be worn when fumes and/or smoke from fire are present. Heat and flames cause emittance of acrid smoke and fumes. Do not release runoff from fire control methods to sewers or waterways. Firefighters should wear full face-piece self-contained breathing apparatus and chemical protective clothing with thermal protection. Direct water stream will scatter and spread flames and, therefore, should not be used.

Section 6 - Accidental Release Measures

6(a) Personal Precautions, Protective Equipment and Emergency Procedures: Not Applicable for **Galvanized Steel Scrap** as sold/shipped. For spills involving finely divided particles, clean-up personnel should be protected against contact with eyes and skin. If material is in a dry state, avoid inhalation of dust.

6(b) Methods and materials for containment and clean up: Not Applicable for **Galvanized Steel Scrap** as sold/shipped. Collect material in appropriate, labeled containers for recovery or disposal in accordance with federal, state, and local regulations. Follow applicable OSHA regulations (29 CFR 1910.120) and all other pertinent state and federal requirements.

Section 7 - Handling and Storage

7(a) Precautions for safe handling: Not Applicable for **Galvanized Steel Scrap** as sold/shipped, however further processing (welding, grinding, etc.) with the potential for generating high concentrations of airborne particulates should be evaluated and controlled as necessary. Practice good housekeeping. Cut resistant gloves and sleeves should be worn when working with steel products.

7(b) Conditions for safe storage, including any incompatibilities: Store away from acids and incompatible materials.

Section 8 - Exposure Controls / Personal Protection

8(a) Occupational Exposure Limits (OELs): Galvanized Steel Scrap as sold/shipped in its physical form does not present an inhalation, ingestion or contact hazard, nor would any of the following exposure data apply. However, operations such as burning, welding (high temperature), sawing, brazing, machining, grinding, etc may produce fumes and/or particulates. The following exposure limits are offered as reference for an experienced industrial hygienist to review:

| Ingredients | OSHA PEL ¹ | ACGIH TLV ² | NIOSH REL ³ | IDLH ⁴ |
|-------------|--|---|--|----------------------------|
| Iron | 10 mg/m ³ (as iron oxide fume) | 5.0 mg/m ³ (as iron oxide dust and fume) | 5.0 mg/m ³ (as iron oxide dust and fume) | 2,500 mg Fe/m ³ |
| Zinc Oxide | 5.0 mg/m ³ (as zinc oxide fume) 15 mg/m ³ (as total dust) 5.0 mg/m ³ (as respirable fraction) | 2.0 mg/m ³ (as zinc oxide) | 10 mg/m ³ (as total dust) 5.0 mg/m ³ (as respirable dust) | NE |
| Manganese | “C” 5.0 mg/m ³ (as Fume & Mn compounds) | 0.2 mg/m ³ | “C” 5.0 mg/m ³ 1.0 mg/m ³ (as fume) “STEL” 3.0 mg/m ³ | 500 mg Mn/m ³ |

NE - None Established

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 Peak is defined as the acceptable maximum peak for a maximum duration above the ceiling concentration for an eight-hour shift. A skin notation refers to the potential significant contribution to the overall exposure by the cutaneous route, either by contact with vapors or, of probable greater significance, by direct skin contact with the substance. A Short Term Exposure Limit (STEL) is defined as a 15-minute exposure, which should not be (continued) ...

Section 8 - Exposure Controls / Personal Protection (continued)

8(a) Occupational Exposure Limits (OELs) (continued):

- (continued) ... exceeded at any time during a workday. An Action level (AL) is used by OSHA and NIOSH to express a health or physical hazard. They indicate the level of a harmful or toxic substance/activity, which requires medical surveillance, increased industrial hygiene monitoring, or biological monitoring. Action Levels are generally set at one half of the PEL but the actual level may vary from standard to standard. The intent is to identify a level at which the vast majority of randomly sampled exposures will be below the PEL.
- Threshold Limit Values (TLV) established by the American Conference of Governmental Industrial Hygienists (ACGIH) are 8-hour TWA concentrations unless otherwise noted. A Short Term Exposure Limit (STEL) is defined as the maximum concentration to which workers can be exposed for a short period of time (15 minutes) for only four times throughout the day with at least one hour between exposures. A "skin" notation refers to the potential significant contribution to the overall exposure by the cutaneous route, either by contact with vapors or, of probable greater significance, by direct skin contact with the substance. ACGIH-TLVs are only recommended guidelines based upon consensus agreement of the membership of the ACGIH. As such, the ACGIH TLVs are for guideline use purposes and are not legal regulatory standards for compliance purposes. The TLVs are designed for use by individuals trained in the discipline of industrial hygiene relative to the evaluation of exposure to various chemical or biological substances and physical agents that may be found in the workplace.
- The National Institute for Occupational Safety and Health Recommended Exposure Limits (NIOSH-REL) - Compendium of Policy and Statements. NIOSH, Cincinnati, OH (1992). NIOSH is the federal agency designated to conduct research relative to occupational safety and health. As is the case with ACGIH TLVs, NIOSH RELs are for guideline purposes only and as such are not legal, regulatory limits for compliance purposes.
- The "immediately dangerous to life or health air concentration values (IDLHs)" are used by NIOSH as part of the respirator selection criteria and were first developed in the mid-1970's by NIOSH. The Documentation for Immediately Dangerous to Life or Health Concentrations (IDLHs) is a compilation of the rationale and sources of information used by NIOSH during the original determination of 387 IDLHs and their subsequent review and revision in 1994.

8(b) Appropriate Engineering Controls: Use controls as appropriate to minimize exposure to metal fumes and dusts during handling operations. Provide general or local exhaust ventilation systems to minimize airborne concentrations. Local exhaust is necessary for use in enclosed or confined spaces. Provide sufficient general/local exhaust ventilation in pattern/volume to control inhalation exposures below current exposure limits.

8(c) Individual Protection Measures:

- Respiratory Protection:** Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, use only 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. Concentration in air of the various contaminants determines the extent of respiratory protection needed. Half-face, negative-pressure, air-purifying respirator equipped with P100 filter is acceptable for concentrations up to 10 times the exposure limit. Full-face, negative-pressure, air-purifying respirator equipped with P100 filter is acceptable for concentrations up to 50 times the exposure limit. Protection by air-purifying negative-pressure and powered air respirators is limited. Use a positive-pressure-demand, full-face, supplied air respirator or self-contained breathing apparatus (SCBA) for concentrations above 50 times the exposure limit. If exposure is above the IDLH (Immediately dangerous to life or health) for any of the constituents, or there is a possibility of an uncontrolled release or exposure levels are unknown, then use a positive-demand, full-face, supplied air respirator with escape bottle or SCBA.

Warning! Air-purifying respirators both negative-pressure, and powered-air do not protect workers in oxygen-deficient atmospheres.

- Eyes:** Wear appropriate eye protection to prevent eye contact. 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 safety glasses to prevent 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.
- Skin:** Wear appropriate personal protective clothing to prevent skin contact. Cut resistant gloves and sleeves should be worn when working with steel products. 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, and gloves to prevent skin contact. Protective gloves should be worn as required for welding, burning or handling operations. Contaminated work clothing must not be allowed out of the workplace.
- Other protective equipment:** An eyewash fountain and deluge shower should be readily available in the work area.

Section 9 - Physical and Chemical Properties

9(a) Appearance (physical state, color, etc.): Depends upon scrap composition, most often silver-white metal.

9(b) Odor: Odorless

9(c) Odor Threshold: NA

9(d) pH: NA

9(e) Melting Point/Freezing Point: 2800°F

9(f) Initial Boiling Point and Boiling Range: 5400°F

9(g) Flash Point: NA

9(h) Evaporation Rate: NA

9(i) Flammability (solid, gas): Non-flammable, non-combustible

NA - Not Applicable

ND - Not Determined for product as a whole

9(j) Upper/lower Flammability or Explosive Limits: NA

9(k) Vapor Pressure: ND

9(l) Vapor Density (Air = 1): NA

9(m) Relative Density: 8

9(n) Solubility(ies): Water Insoluble

9(o) Partition Coefficient n-octanol/water: ND

9(p) Auto-ignition Temperature: NA

9(q) Decomposition Temperature: ND

9(r) Viscosity: NA

Section 10 - Stability and Reactivity

10(a) Reactivity: Not Determined (ND) for product in a solid form. Do not use water on molten metal.

10(b) Chemical Stability: Steel products are stable under normal storage and handling conditions.

Section 10 - Stability and Reactivity (continued)

10(c) Possibility of hazardous reaction: None Known




10(d) Conditions to Avoid: Storage with strong acids or calcium hypochlorite.

10(e) 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.

10(f) Hazardous Decomposition Products: Thermal oxidative decomposition of steel products can produce fumes containing oxides of iron and manganese as well as other alloying elements.

Section 11 - Toxicological Information

11 Information on toxicological effects: The following toxicity data has been determined for **Galvanized Steel Scrap** when further processed using the information available for its components applied to the guidance on the preparation of an SDS under the GHS requirements of OSHA and the EU CPL:

| Hazard Classification | Hazard Category | | Hazard Symbols | Signal Word | Hazard Statement |
|--|-----------------|-----------------|---|----------------|--|
| | EU | OSHA | | | |
| Acute Toxicity Hazard (covers Categories 1-4) | NA* | 4 ^a |  | Warning | Harmful if swallowed. |
| Eye Damage/Irritation (covers Categories 1, 2A & 2B) | NA* | 2B ^c | NA | Warning | Causes eye irritation. |
| Specific Target Organ Toxicity (STOT) Following Single Exposure (covers Categories 1-3) | NA* | 3 ⁱ |  | Warning | May cause respiratory irritation. |
| STOT Following Repeated Exposure (covers Categories 1 & 2) | 1 | 1 ^j |  | Danger | Causes damage to central nervous system, and lungs through prolonged or repeated exposure. |

* Not Applicable - Semi-formed steel products are considered articles under Reach regulation (REACH REGULATION (EC) No 1907/2006) and are not subject to classification under CLP regulation (REGULATION (EC) No 1272/2008).

Toxicological data listed below are presented regardless to classification criteria. Individual hazard classification categories where the toxicological information has met or exceeded a classification criteria threshold are listed above.

a. No LC₅₀ or LD₅₀ has been established for **Galvanized Steel Scrap**. The following data has been determined for the components:

- **Iron:** Rat LD₅₀ =98.6 g/kg (REACH)
 Rat LD₅₀ =1060 mg/kg (IUCLID)
 Rat LD₅₀ =984 mg/kg (IUCLID)
 Rabbit LD₅₀ =890 mg/kg (IUCLID)
- **Zinc Oxide:** Rat LD₅₀ >5000 mg/kg (Oral)

b. No Skin (Dermal) Irritation data available for **Galvanized Steel Scrap** as a mixture or its components.

c. No Eye Irritation data available for **Galvanized Steel Scrap** as a mixture. The following Eye Irritation information was found for the components:

- **Iron:** Causes eye irritation.

d. No Skin (Dermal)/respiratory Sensitization data available for **Galvanized Steel Scrap** as a mixture or its components.

e. No Respiratory Sensitization data available for **Galvanized Steel Scrap** as a mixture or its components.

f. No Germ Cell Mutagenicity data available for **Galvanized Steel Scrap** as a mixture. The following Mutagenicity and Genotoxicity information was found for the components:

- **Iron:** IUCLID has found some positive and negative findings in vitro.

g. Carcinogenicity: IARC, NTP, and OSHA do not list **Galvanized Steel Scrap** as carcinogens. The following Carcinogenicity information was found for the components:

- **Welding Fumes** - IARC Group 2B carcinogen, a mixture that is possibly carcinogenic to humans.

h. No Toxic Reproduction data available for **Galvanized Steel Scrap** as a mixture or its components.

i. No Specific Target Organ Toxicity (STOT) following a Single Exposure data available for **Galvanized Steel Scrap** as a mixture. The following STOT following a Single Exposure data was found for the components:

- **Iron:** Irritating to Respiratory tract.

j. No Specific Target Organ Toxicity (STOT) following Repeated Exposure data was available for **Galvanized Steel Scrap** as a mixture. The following STOT following a Repeated Exposure data was found for the components:

- **Manganese:** Inhalation of metal fumes - Degenerative changes in human Brain; Behavioral: Changes in motor activity and muscle weakness (Whitlock *et al.*, 1966).

The above toxicity information was determined from available scientific sources to illustrate the prevailing posture of the scientific community. The scientific resources includes: The American Conference of Governmental Industrial Hygienist (ACGIH) Documentation of the Threshold Limit Values (TLVs) and Biological Exposure indices (BEIs) with Other Worldwide Occupational Exposure Values 2017, The International Agency for Research on Cancer (IARC), The National Toxicology Program (NTP) updated documentation, the World Health Organization (WHO) and other available resources, the International Uniform Chemical Information Database (IUCLID), European Union Risk Assessment Report (EU-RAR), Concise International Chemical Assessment Documents (CICAD), European Union Scientific Committee for Occupational Exposure Limits (EU-SCOEL), Agency for Toxic Substances and Disease Registry (ATSDR), Hazardous Substance Data Bank (HSDB), and International Programme on Chemical Safety (IPCS).

Section 11 - Toxicological Information (continued)

The following health hazard information is provided regardless to classification criteria and is based on the individual component(s) and potential resultant components from further processing:

Acute Effects:

- **Inhalation:** Excessive exposure to high concentrations of metal dust may cause irritation to the eyes, skin and mucous membranes of the upper respiratory tract. Excessive inhalation of fumes of freshly formed metal oxide particles sized below 1.5 micrometer and usually between 0.02-0.05 micrometers from many metals can produce an acute reaction known as "metal fume fever". Symptoms consist of chills and fever (very similar to and easily confused with flu symptoms), metallic taste in the mouth, dryness and irritation of the throat followed by weakness and muscle pain. The symptoms come on in a few hours after excessive exposures and usually last from 12 to 48 hours. Long-term effects from metal fume fever have not been noted.
- **Eye:** Excessive exposure to high concentrations of metal dust may cause irritation to the eyes.
- **Skin:** Skin contact with metal dusts may cause irritation or sensitization, possibly leading to dermatitis. Skin contact with metallic fumes and dusts may cause physical abrasion.
- **Ingestion:** Ingestion of harmful amounts of this product as distributed is unlikely due to its solid insoluble form. Ingestion of metal dust may cause nausea or vomiting.

Acute Effects by component:

- **Iron and iron oxides:** Iron is harmful if swallowed, causes skin irritation, and causes eye irritation. Contact with iron oxide has been reported to cause skin irritation and serious eye damage. Particles of iron or iron compounds, which become imbedded in the eye, may cause rust stains unless removed fairly promptly.
- **Zinc Oxide:** Not Reported/ Not Classified
- **Manganese Oxide:** Manganese oxide is harmful if swallowed.

Delayed (chronic) Effects by component:

- **Iron and iron oxides:** Chronic inhalation of excessive concentrations of iron oxide fumes or dusts 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 the International Agency for Research on Cancer (IARC).
- **Zinc Oxide:** Inhalation of zinc oxide fumes may cause metal fume fever, which is characterized by flu-like symptoms with metallic taste, fever, chills, cough, weakness, chest pain, muscle pain and increased white blood cell count.
- **Manganese and Manganese Oxide:** Chronic exposure to high concentrations of manganese fumes and dusts 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. Occupational overexposure (Manganese) is a progressive, disabling neurological syndrome that typically begins with relatively mild symptoms and evolves to include altered gait, fine tremor, and sometimes, psychiatric disturbances. May cause damage to lungs with repeated or prolonged exposure. Neurobehavioral alterations in worker populations exposed to MnO including: speed and coordination of motor function are especially impaired.

Section 12 - Ecological Information

12(a) Ecotoxicity (aquatic & terrestrial): No Data Available for **Galvanized Steel Scrap** as sold/shipped. However, individual components of the product when processed have been found to be toxic to the environment. Metal dusts may migrate into soil and groundwater and be ingested by wildlife as follows:

- **Iron Oxide:** LC₅₀: >1000 mg/L; Fish 48 h-EC₅₀ > 100 mg/L (Currenta, 2008k); 96 h-LC₀ ≥ 50,000 mg/L Test substance: Bayferrox 130 red (95 – 97% Fe₂O₃; < 4% SiO₂ and Al₂O₃) (Bayer, 1989a).
- **Zinc Oxide:** EU RAR lists as Category 1 Very toxic to aquatic life with long lasting effects.

12(b) Persistence & Degradability: No Data Available for **Galvanized Steel Scrap** as sold/shipped or individual components.

12(c) Bioaccumulative Potential: No Data Available for **Galvanized Steel Scrap** as sold/shipped or individual components.

12(d) Mobility (in soil): No data available for **Galvanized Steel Scrap** as sold/shipped. However, individual components of the product have been found to be absorbed by plants from soil.

12(e) Other adverse effects: None Known

Additional Information:

Hazard Category: Category 1

Signal Word: Warning Word

Hazard Symbol:



Hazard Statement: Very Toxic to aquatic life with long lasting effects.

Section 13 - Disposal Considerations

Disposal: Steel scrap should be recycled whenever possible. Product dusts and fumes from processing operations should also be recycled, or classified by a competent environmental professional and disposed of in accordance with applicable federal, state or local regulations.

Container Cleaning and Disposal: Follow applicable federal, state and local regulations. Observe safe handling precautions. European Waste Catalogue (EWC): 16-01-17 (ferrous metals), 12-01-99 (wastes not otherwise specified), 16-03-04 (off specification batches and unused products), or 15-01-04 (metallic packaging).

Please note this information is for Galvanized Steel Scrap in its original form. Any alterations can void this information.

Section 14 - Transport Information

14 (a-g) Transportation Information:

US Department of Transportation (DOT) under 49 CFR 172.101 **does not** regulate **Galvanized Steel Scrap** as a hazardous material. All federal, state, and local laws and regulations that apply to the transport of this type of material must be adhered to.

| | | |
|--|---|--|
| Shipping Name: Not Applicable (NA) Shipping Symbols: NA Hazard Class: NA UN No.: NA Packing Group: NA DOT/ IMO Label: NA Special Provisions (172.102): NA | Packaging Authorizations a) Exceptions: NA b) Group: NA c) Authorization: NA | Quantity Limitations a) Passenger, Aircraft, or Railcar: NA b) Cargo Aircraft Only: NA Vessel Stowage Requirements a) Vessel Stowage: NA b) Other: NA DOT Reportable Quantities: NA |
|--|---|--|

International Maritime Dangerous Goods (IMDG) and the Regulations Concerning the International Carriage of Dangerous Goods by Rail (RID) classification, packaging and shipping requirements follow the US DOT Hazardous Materials Regulation.

Regulations Concerning the International Carriage of Dangerous Goods by Road (ADR) does not regulate **Galvanized Steel Scrap** as a hazardous material.

| | | |
|--|--|---|
| Shipping Name: Not Applicable (NA) Classification Code: NA UN No.: NA Packing Group: NA ADR Label: NA Special Provisions: NA Limited Quantities: NA | Packaging a) Packing Instructions: NA b) Special Packing Provisions: NA c) Mixed Packing Provisions: NA | Portable Tanks & Bulk Containers a) Instructions: NA b) Special Provisions: NA |
|--|--|---|

International Air Transport Association (IATA) does not regulate **Galvanized Steel Scrap** as a hazardous material.

| Shipping Name: Not Applicable (NA) Class/Division: NA Hazard Label (s): NA UN No.: NA Packing Group: NA Excepted Quantities (EQ): NA | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2" style="text-align: center;">Passenger & Cargo Aircraft</th> </tr> <tr> <td style="width: 50%;">Limited Quantity (EQ)</td> <td style="width: 50%;"></td> </tr> <tr> <td>Pkg Inst: NA</td> <td>Pkg Inst: NA</td> </tr> <tr> <td>Max Net Qty/Pkg: NA</td> <td>Max Net Qty/Pkg: NA</td> </tr> </table> | Passenger & Cargo Aircraft | | Limited Quantity (EQ) | | Pkg Inst: NA | Pkg Inst: NA | Max Net Qty/Pkg: NA | Max Net Qty/Pkg: NA | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Cargo Aircraft Only Pkg Inst: NA</td> <td style="width: 50%;">Special Provisions: NA</td> </tr> <tr> <td>Max Net Qty/Pkg: NA</td> <td>ERG Code: NA</td> </tr> </table> | Cargo Aircraft Only Pkg Inst: NA | Special Provisions: NA | Max Net Qty/Pkg: NA | ERG Code: NA |
|---|---|----------------------------|--|------------------------------|--|---------------------|---------------------|----------------------------|----------------------------|--|---|-------------------------------|----------------------------|---------------------|
| Passenger & Cargo Aircraft | | | | | | | | | | | | | | |
| Limited Quantity (EQ) | | | | | | | | | | | | | | |
| Pkg Inst: NA | Pkg Inst: NA | | | | | | | | | | | | | |
| Max Net Qty/Pkg: NA | Max Net Qty/Pkg: NA | | | | | | | | | | | | | |
| Cargo Aircraft Only Pkg Inst: NA | Special Provisions: NA | | | | | | | | | | | | | |
| Max Net Qty/Pkg: NA | ERG Code: NA | | | | | | | | | | | | | |

Pkg Inst – Packing Instructions

Max Net Qty/Pkg – Maximum Net Quantity per Package

ERG – Emergency Response Drill Code

Transport Dangerous Goods (TDG) Classification: **Galvanized Steel Scrap** does not have a TDG classification.

Section 15 - Regulatory Information

Regulatory Information: *The following listing of regulations relating to an OmniSource Corporation 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 Contaminant (29 CFR 1910.1000, Table Z-1, Z-2, Z-3): The product, **Galvanized Steel Scrap** as a whole is not listed. However, individual components of the product are listed: Refer to Section 8, Exposure Controls and Personal Protection.

EPA Regulations: The product, **Galvanized Steel Scrap** is not listed as a mixture. However, individual components of the product are listed:

| Components | Regulations |
|------------|----------------|
| Iron | TSCA, SDWA |
| Zinc Oxide | TSCA |
| Manganese | SARA 313, TSCA |

SARA 311/312 Potential Hazard Categories: Immediate Acute Health Hazard; Delayed Chronic Health Hazard

Section 313 Supplier Notification: The product, **Galvanized Steel Scrap** contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-to-Know Act and 40 CFR part 372:

| CAS # | Chemical Name | Percent by Weight |
|-----------|---------------|-------------------|
| 7439-96-5 | Manganese | 2 max |

Regulations Key:


| | |
|--------|---|
| CAA | Clean Air Act (42 USC Sec. 7412; 40 CFR Part 61 [As of: 8/18/06]) |
| CERCLA | Comprehensive Environmental Response, Compensation and Liability Act (42 USC Secs. 9601(14), 9603(a); 40 CFR Sec. 302.4, Table 302.4, Table 302.4 and App. A) |
| CWA | Clean Water Act (33 USC Secs. 1311; 1314(b), (c), (e), (g); 136(b), (c); 137(b), (c) [as of 8/2/06]) |
| RCRA | Resource Conservation Recovery Act (42 USC Sec. 6921; 40 CFR Part 261 App VIII) |
| SARA | Superfund Amendments and Reauthorization Act of 1986 Title III Section 302 Extremely Hazardous Substances (42 USC Secs. 11023, 13106; 40 CFR sec. 372.65) and Section 313 Toxic Chemicals (42 USC Secs. 11023, 13106; 40 CFR sec. 372.65 [as of 6/30/05]) |
| TSCA | Toxic Substance Control Act (15 U.S.C. s/s 2601 et seq. [1976]) |
| SDWA | Safe Drinking Water Act (42 U.S.C. s/s 300f et seq. [1974]) |

Section 15 - Regulatory Information (continued)

State Regulations: The product, **Galvanized Steel Scrap** as a mixture 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: Zinc Oxide and Manganese
- Environmental Hazards: Zinc Oxide and Manganese
- Special Hazardous Substance: None

California Prop. 65  **WARNING:** This product can expose you to nickel, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

New Jersey: Contains regulated material in the following categories:

- Hazardous Substance: Zinc Oxide and Manganese
- Environmental Hazard: Zinc Oxide and Manganese
- Special Hazardous Substance: None

Minnesota: Manganese

Massachusetts: Zinc Oxide and Manganese (compounds)

Other Regulations:

WHMIS Classification (Canadian): The product, **Galvanized Steel Scrap** is not listed as a mixture. However individual components are listed.

| Ingredients | WHMIS Classification |
|-------------|--|
| Manganese | Reproductive toxicity - Category 2; Specific target organ toxicity - repeated exposure - Category 1; Combustible dusts |

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.

Section 16 - Other Information

Prepared By: OmniSource Corporation

Revision History:

06/13/2018 - update to comply w/ OSHA 2012 GHS & Canada WHMIS 2015 GHS

03/26/2013 – regulatory update

11/03/2011 – regulatory update

1/26/2010 – regulatory update

Expiration Date: 06/13/2021

8/07/2008 – regulatory update

10/06/2005 – regulatory update

7/19/2002 – regulatory update

7/08/1998 – Original

Hazardous Material Identification System (HMIS) Classification

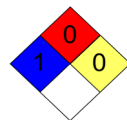
| | |
|-----------------|---|
| Health Hazard | 1 |
| Fire Hazard | 0 |
| Physical Hazard | 0 |

HEALTH= 1, Denotes possible chronic hazard if airborne dusts or fumes are generated Irritation or minor reversible injury possible.

FIRE= 0, Materials that will not burn.

PHYSICAL HAZARD= 0, Materials that are normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosives.

National Fire Protection Association (NFPA)



HEALTH = 1, Exposure could cause irritation but only minor residual injury even if no treatment is given.

FLAMMABILITY = 0, Materials that will not burn.

INSTABILITY = 0, Normally stable, even under fire exposure conditions, and are not reactive with water.

ABBREVIATIONS/ACRONYMS:

| | | | |
|------------------------|---|--------------|---|
| ACGIH | American Conference of Governmental Industrial Hygienists | NIF | No Information Found |
| BEIs | Biological Exposure Indices | NIOSH | National Institute for Occupational Safety and Health |
| CAS | Chemical Abstracts Service | NTP | National Toxicology Program |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act | ORC | Organization Resources Counselors |
| CFR | Code of Federal Regulations | OSHA | Occupational Safety and Health Administration |
| CNS | Central Nervous System | PEL | Permissible Exposure Limit |
| GI, GIT | Gastro-Intestinal, Gastro-Intestinal Tract | PNOR | Particulate Not Otherwise Regulated |
| HMIS | Hazardous Materials Identification System | PNOC | Particulate Not Otherwise Classified |
| IARC | International Agency for Research on Cancer | PPE | Personal Protective Equipment |
| LC50 | Median Lethal Concentration | ppm | parts per million |
| LD50 | Median Lethal Dose | RCRA | Resource Conservation and Recovery Act |
| LD_{Lo} | Lowest Dose to have killed animals or humans | RTECS | Registry of Toxic Effects of Chemical Substances |
| LEL | Lower Explosive Limit | SARA | Superfund Amendment and Reauthorization Act |
| LOEL | Lowest Observed Effect Level | SCBA | Self-contained Breathing Apparatus |
| LOAEC | Lowest Observable Adverse Effect Concentration | SDS | Safety Data Sheet |

| | | | |
|-------------------------|----------------------------------|-------------|---------------------------|
| µg/m³ | microgram per cubic meter of air | STEL | Short-term Exposure Limit |
| mg/m³ | milligram per cubic meter of air | TLV | Threshold Limit Value |

Section 16 - Other Information (continued)

ABBREVIATIONS/ACRONYMS (continued):

| | | | |
|--------------|---------------------------------------|------------|-----------------------|
| mppcf | million particles per cubic foot | TWA | Time-weighted Average |
| MSHA | Mine Safety and Health Administration | UEL | Upper Explosive Limit |
| NFPA | National Fire Protection Association | | |

Disclaimer: This information is taken from sources or based upon data believed to be reliable. However, Omni Source Corporation makes no warranty as to the absolute correctness or sufficiency of any of the foregoing or that additional or other measures may not be required under particular conditions.

Galvanized Steel Scrap

Safety Data Sheet (SDS)

Revision: 06/13/2018