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Issue Date: 10/06/2002
Last Revision Date: 22/02/2024
Superseded Date: 19/11/2018
Version Number: 05

SAFETY DATA SHEET

Product Code: 01-415

SECTION 1 PRODUCT IDENTIFICATION

Product Name: Pedal Step Bin

SECTION 2 HAZARD IDENTIFICATION

Not classified as hazardous according to NOHSC/ASCC Criteria

Not classified as dangerous goods by the criteria of the ADG Code

Emergency Overview: This material when properly handled according to good working and hygienic practices is not dangerous to human health and the environment at ambient temperature. This formed solid metal product poses little or no immediate health or fire hazard. When product is subjected to welding, burning, grinding, melting, sawing, brazing, or other similar activities, potentially hazardous airborne particulate and fumes may be generated and should be evaluated by an industrial hygienist. Avoid inhalation of metal dusts and fumes. Operations having the potential to generate airborne particulates should be performed in well ventilated areas and if it is impossible, respiratory protection and other personal protective equipment should be used. The presence of non-metallic coatings on steel products should be considered when evaluating potential employee health hazards during handling, welding, grinding or other fume/dust generated activities.

General Precautionary Measures:

Code	General Precautionary Statements	Hazard Class	Hazard Category	Conditions for use
P101	If medical advice is needed, have product container or label at hand.	As appropriate	N/A	Consumer products
P102	Keep out of reach of children.	As appropriate	N/A	Consumer products
P103	Read label before use.	As appropriate	N/A	Consumer products

Inhalation: Steel products in the natural state do 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 8.

Eye Contact: May cause eye irritation.

Skin Contact: May cause skin irritation, dermatitis or allergic reactions in sensitized individual.

Ingestion: Ingestion of harmful amount of this product as distributed may cause nausea or vomiting and can cause damage to digestive system.

SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Chemical Formula	CAS No.
*Iron	Fe_2O_3	1309-37-1
Carbon	C	7440-44-0
Manganese	Mn	7439-96-5
Phosphorus	P	7723-14-0
Sulfur	S	7704-34-9
Silicon	Si	7440-21-3

Chemical Name	Chemical Formula	CAS No.
Molybdenum	Mo	7439-98-7
Chromium	Cr	7440-47-3
Nickel	Ni	7440-02-0
Copper	Cu	7440-50-8

*Substance regulated in Oxide Form
** All commercial steel products may contain small amounts of various elements in addition to those specified. These small quantities (less than 0.1 %) may exist as international additions, or as "trace" or "residual" elements that generally originate in the raw materials used.

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 indicated. Seek medical attention promptly. Metal fume fever may be treated by bed rest, and administering a pain and fever reducing medication.

Eye Contact: Treat for foreign body in the eye. Flush with large amounts of clean water to remove particles. Seek immediate medical attention.

Skin Contact: Remove contaminated clothing, wash affected area thoroughly with mild soap and water or use cotton with antiseptic to clean up puncture. Apply pressure to affected area to stop the bleeding. If irritation, inflammation or other symptoms develop, seek medical attention.

Ingestion: Do not induce vomiting and seek immediate medical advice.

SECTION 5 FIRE FIGHTING MEASURES

Suitable Extinguishing Equipment: Dry powder fire extinguisher is more appropriate for metal fires. Must also use extinguishing media most appropriate for the surrounding fire.

Fire & Explosion Hazard: Steel products do not present fire or explosion hazards under normal conditions. But, molten metal may react violently with water. High concentrations of metallic fines in the air may present an explosion hazard. Metal fire produces toxic fumes like carbon monoxide, iron oxide, ferrochromium fumes, oxides of sulphur and etc. when burning.

Special Protective Equipment: Fire fighters should wear a self contained breathing apparatus (SCBA) which meets appropriate standards operated in positive pressure mode, and full protective equipment, including full bunker gear.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Disposed in an appropriately permitted waste landfill, or disposed by other methods in accordance with local, state, and federal regulations. Finely divided, dry particles should be removed by vacuuming or wet sweeping to prevent spreading dusts. Avoid using compressed air.

Spill/Leak Procedures: Not applicable to steel in solid state. 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. 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, labelled 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: Follow applicable Federal, state, and local regulations.

SECTION 7 HANDLING AND STORAGE

Safe Handling: Handle the product in accordance with directions for use. Do not eat, drink and smoke in working area. Wash hand before and after handling. Remove contaminated clothing and protective equipment before entering eating areas. Instruments can be damaged by alkaline and acidic detergents. Always use a pH neutral detergent or solution. Remove all packaging prior to cleaning and sterilization. Contaminated instruments should be handled with gloves and eye protection should be used.

Storage Conditions: Store in a cool and dry place, do not exceed 140°C. Keep out of reach of children. Keep protected from sunlight, acids, fire/heat sources, electrical wirings/sources and other incompatible materials. Do not place non-steel instruments in direct contact with steel instruments or metal baskets as this may lead to formation of 'graying' on the handles. NEVER clean color-etched probes or black composite instruments in ultrasonic baths. Do not subject instruments to dry heat sterilization.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Standards

Chemical Name	OSHA PEL[1]	ACGIH TLV[2]
Iron	10 mg/m³ – Iron oxide fume	5mg/m³ – Iron oxide dust and fume
Carbon	15 mg/m³ – Total dust (PNOR[3]) 5 mg/m³ – Respirable fraction (PNOR3)	10 mg/m³ – Inhalable fraction[4] (PNOS[5]) 3 mg/m³ – Respirable fraction[6] (PNOS[5])
Manganese	5 mg/m³ (C) – Fume & Mn compounds	0.2 mg/m³
Phosphorus	0.1 mg/m³	0.01 mg/m³
Sulfur	15 mg/m³ – Total dust (PNOR[3]) 5 mg/m³ – Respirable fraction (PNOR[3])	10 mg/m³ – Inhalable fraction[4] (PNOS[5]) 3 mg/m³– Respirable fraction[6] (PNOS[5])
Silicon	15 mg/m³ – Total dust 5 mg/m³ – Respirable fraction	10mg/m³
Molybdenum	15 mg/m³	10mg/m³
Chromium	1 mg/m³ – Chromium metal	0.5 mg/m³ – Cr metal & Cr III compounds
Nickel	1 mg/m³ – Metal & insol. Compounds (as Ni)	1.5 mg/m³ – Elemental Nickel (as Ni) 0.2 mg/m³ – Insoluble compounds (NOS7)
Copper	0.1 mg/m³ – Fume (as Cu) 1 mg/m³ – Dusts & Mists (as Cu)	0.2 mg/m³ – Fume 1 mg/m³ – Dusts & Mists (as Cu)

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 the PNOR limit which is the same as the inert or nuisance dust limit of 15mg/m3 for total dust and 5mg/m3 for the respirable fraction.
4 **Inhalable fractions**. 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 fractions. 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.
7 NOS (Not Otherwise Specified).

Engineering Controls: Use controls as appropriate to minimize exposure to metal fumes and dusts during handling operations. Use lifting and work devices, e.g., crane, hoist, etc., within rated capacities and in accordance with manufacturer's instructions when handling these products.

(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.

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 at its source.

Administrative Controls: Do not use compressed air to clean-up spills.

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.

Skin And Eye Protection: 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. Use safety glasses or goggles and protective gloves as required for handling operations.

SECTION 9 PHYSICAL/CHEMICAL PROPERTIES

Appearance and Odour:	Solid, metallic gray and odourless
pH:	Not applicable
Melting Point/Freezing Point:	~2700˚F (2400 - 2800 ˚F)
Boiling Point:	Not applicable
Flash Point:	Not applicable
Evaporation Rate:	Not applicable
Flammability:	Non-flammable, non-combustible
Vapor Pressure:	Not applicable
Vapor Density:	Not applicable
Relative Density:	7.5 – 8.5
Solubility in Water:	Insoluble

Auto ignition: No data available

SECTION 10 STABILITY AND REACTIVITY

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

Polymerization: Hazardous polymerization cannot occur.

Chemical Incompatibilities: Will react with strong acids to form hydrogen. Will react with bases and strong oxidizers. Iron oxide dusts in contact with calcium hypochlorite evolve oxygen and may cause an explosion. Storage with strong acids, bases, oxidizers and calcium hypochlorite evolve oxygen and may cause an explosion.

SECTION 11 TOXICOLOGICAL INFORMATION

Potential Health Effects

Primary Entry Route – Inhalation: Steel products in the natural state do 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 8.

Target Organs: Respiratory system

Acute Effects

Inhalation: Excessive inhalation of fumes of freshly formed metal oxide particles sized below 1.5 microns and usually between 0.02-0.05 microns from many metals can produce an acute reaction known as "metal fume fever". Symptoms consist of chills and fever, 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 yet been noted. Freshly formed oxide fumes of manganese and copper have been associated with causing metal fume fever.

Eye: Torching or burning operations on steel product with oil coatings may produce emissions that can be irritating to eyes.

Skin: Repeated or prolonged skin contact may cause skin irritation, dermatitis or allergic reactions in sensitized individual.

Ingestion: Ingestion of harmful amount of this product as distributed may cause nausea or vomiting and can cause damage to digestive system.

Chronic Effects

Presented below are the potential health effects that may be contained in any alloys. Please refer below for assessing the health effects of those specific elements contained in this product.

1. IRON OXIDE: Chronic inhalation of excessive concentrations of iron oxide fumes or dusts may result in the development of a benign lung conditions known as pneumoconiosis, called siderosis, which is observable as an X-ray change. But, no physical impairment of lung function has been associated with siderosis.

2. CARBON: Chronic inhalation of high concentrations to carbon may cause pulmonary disorders.

3. CHROMIUM:	The health hazards associated with exposure to chromium are dependent upon its oxidation state. The metal form (chromium as it exists in this product) is of relatively low toxicity. Long term excessive inhalation of ferrochromium dusts and fumes may cause lung changes in exposed workers. Exposure to chromium metal does not give rise to pulmonary fibrosis or pneumoconiosis. The hexavalent form (Cr+6), unlike chromium metal 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 respiratory cancer. Other health effects include possible kidney and liver damage.
4. COPPER:	Chronic exposure to copper dusts may result in runny nose, irritation of mucous membranes, and atrophic changes with resultant dementia. 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.
5. MANGANESE:	Manganese dust and fume can act as minor irritants to the eyes and respiratory tract. Excessive inhalation exposure to manganese fume may result in a flu-like illness termed metal fume fever. Chronic exposure to high concentrations of manganese fumes and dusts may adversely affect the central nervous system (CNS) 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.
6. NICKEL:	Exposure to nickel dusts and fumes can cause allergic dermatitis, respiratory irritation, asthma, pulmonary fibrosis, eye irritant, and edema, and may cause nasal or lung cancer in humans. Respiratory cancer risks primarily relate to chronic exposure to soluble nickels at concentrations in excess of 1 mg Ni/m^3 and exposure to the less soluble forms at concentrations greater than 10 mg Ni/m^3. Metallic nickel does not appear to pose such a threat.
7. PHOSPHOROUS:	Inhalation of dusts and fumes of ferrophosphorus and phosphorous oxides may cause respiratory irritation.
8. SILICON:	Silicon dusts are a low health risk by inhalation and should be treated as a nuisance dust.
9. SULFUR:	Sulfur compounds, present in the fumes, may irritate the skin, eyes, lungs and gastrointestinal tract. Long-term inhalation exposure to high concentrations (over-exposure) to pneumoconiotic agents may act synergistically with inhalation of oxides, fumes or dusts of this product to cause toxic effects.
10. TITANIUM:	There is no evidence of a health hazard from inhalation of titanium dioxide at airborne concentrations below 10 mg/m^3. The toxicity of titanium dioxide has been found to be relatively inert.
11. ALUMINUM:	Metal dust and oxide is generally considered a nuisance particulate. It may irritate the eyes and mucous membranes. Excessive concentrations have been known to cause fibrosis.
12. BORON OXIDE:	An eye and respiratory irritant may cause eye irritation, dryness of mouth, nose and throat or a productive cough.
13. COBALT:	May cause interstitial fibrosis, pneumonitis, and sensitization of the respiratory tract and skin. Cobalt liberation during tungsten carbide machining is associated with the development of hypersensitivity asthma. Hypersensitivity pneumonitis generally disappears when the exposure ceases. Cobalt is listed by National Toxicological Program (NTP) as a 2B carcinogen, anticipated to be carcinogenic from studies in experimental animals.
14. SELENIUM:	Selenium dust, vapors, and fumes are irritants of the eyes, mucous membranes and skin. Chronic exposure may cause central nervous system effects and gastrointestinal disturbances. Selenium is listed by the National Toxicological Program (NTP) as a 2B.
15. TANTALUM:	Considered to have a low order of toxicity. As surgical implant material, it has demonstrated its physiological inertness.
16. TUNGSTEN:	Both tungsten and tungsten carbide pose an extremely low order toxicity.

17. VANADIUM: The oxides of vanadium are toxic. These may cause irritation to eyes and respiratory tract. May cause bronchitis with wheezing and chest pain. A sensitizer, with repeated exposure, may cause more severe respiratory symptoms.

18. ZIRCONIUM: considered to have low exposure of toxicity. Skin rash has been associated with exposure to deodorants containing zirconium.

Carcinogenicity: The International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP), and OSHA do not list steel products as carcinogens. IARC identifies nickel compounds as Group 1 (sufficient evidence for carcinogenicity in humans) and metallic nickel as Group 2B (possibly carcinogenic for humans). NTP lists nickel as Group 2 (reasonably anticipated to be a human carcinogen). The American Conference of Governmental Industrial Hygienists (ACGIH) lists insoluble nickel compounds as A1 (confirmed human carcinogen) and elemental/metallic nickel as A5 (not suspected as a human carcinogen). IARC lists chromium metal and trivalent chromium compounds as Group 3 (not classifiable as to their human carcinogenicity). ACGIH lists chromium metal and trivalent compounds as A4 (not classifiable as a human carcinogen). IARC identifies welding fumes as a Group 2B carcinogen, a mixture that is possibly carcinogenic to humans.

Medical Conditions Aggravated by Long-Term Exposure

Individuals with chronic respiratory disorders (i.e., asthma, chronic bronchitis, emphysema, etc.) may be adversely affected by any fume or airborne particulate matter exposure.

Other: No LC50 or LD50 has been established for the mixture as a whole.

Iron LD50: 30 g/kg oral (rat).

Aluminum LD50: No data available

Boron LD50: 2000 mg/kg oral (mouse).

Calcium LD50: No data. No data available

Carbon LD50: No data. No data available

Copper LD50: 120 ug/kg oral (human)

Manganese LD50: 9 g/kg oral (rat).

Phosphorous LD50: No data available

Silicon LD50: 3160 mg/kg oral (rat).

Sulfur LD50: >8437 mg/kg oral (rat).

Mutagenicity, Teratogenicity: No data available

SECTION 12 ECOLOGICAL INFORMATION

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

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 ground water 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.

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SECTION 13 DISPOSAL CONSIDERATIONS

Recycling of all metallic byproducts as scrap is strongly encouraged. If by products need to be treated and/or disposed off as waste, hazardous waste characterization must be performed prior to treating and/or disposal. The product and its packaging must be disposed of in accordance with the local and national regulations.

SECTION 14 TRANSPORT INFORMATION

This product is not classified as dangerous good under transport regulations.

UN No:	N/A
Packaging Group:	N/A
DG Class:	N/A
Hazchem Code:	N/A

SECTION 15 REGULATORY INFORMATION

TSCA (Toxic Substances Control Act):	Not applicable.
CERCLA Hazardous Substance (40 CFR 302.4):	The product as a whole is not listed. However, individual components of the product are listed: Copper (Reportable Quantity (RQ)-5000#). Manganese compounds are also listed although no reportable quantity is assigned to this generic or broad class.
SARA 311/312 Hazardous Categories:	Not applicable of item as shipped; however if process, user end product may require reporting.
SARA 313 Reportable Ingredients:	Product ingredients subject to reporting requirements may include chromium, nickel, manganese, cobalt and copper.
Carcinogenicity (OSHA, Hazard Communication):	
NTP (National Toxicology Program):	Not applicable.
IARC (International Agency for Research on Cancer):	Not applicable.

*Regulations such as Clean Air Act, Clean Water Act and Resource Conservation & Recovery Act may apply to the handling of steel grindings and particulates from processing.

SECTION 16 OTHER INFORMATION

Visually inspect to ensure all contamination has been removed. Check for distortion, damage and wear. Cutting edges should be free of defects. Discard damaged, worn or corroded instruments. Ensure that detachable tips are secure.

Reason for Revision: To bring to date

END OF SDS