



*A Milacron Company*

Dear Customer:

Enclosed is the **REVISED** Material Safety Data Sheet for our product:

**D-M-E #7 STEEL**

The products we distribute are not normally hazardous in their natural state. However, steel does contain elements deemed by OSHA to be hazardous when released by manufacturing, such as brazing, burning, grinding, sawing or welding, etc. Failure to control dust and fumes can result in chronic health problems.

We believe the information, supplied by the Manufacturer, on the enclosed MSDS to be accurate; however, D-M-E makes no warranty with respect to the accuracy of the information or the suitability of the recommendations, and assumes no liability for the information so presented.

Should you require additional information, please call or write the Manufacturer listed on the MSDS.

Sincerely yours,

D-M-E Company  
Director of Operations  
Ken Jasina

Revised: May 2005



Specialty Steels, Inc.

# MATERIAL SAFETY DATA SHEET

## I GENERAL INFORMATION

Title: EDRO MSDS No. 001 Rev. 1

Date: April 1, 2000

Identity: Stainless Steels

Synonyms: AISI/SAE Grade 400 Stainless

Family: Inorganic Compounds

Manufacturer's Name: Edro Specialty Steel, Inc.

Manufacturer's Address: 20500 Carrey Road Walnut, CA 91789

Information Telephone Number: 909-594-5751

Prepared by: Robert J. Friedrich

Emergency Telephone Number: 909-594-5751

Fax Telephone Number: 909-594-2154

## II INGREDIENTS

| Ingredient  | CAS #     | Wt %          | General  | Exposure Limits            |                             |
|-------------|-----------|---------------|--|----------------------------|-----------------------------|
|             |           |               |  | OSHA PEL mg/M <sup>3</sup> | ACGIH TLV mg/M <sup>3</sup> |
| Carbon      | 7440-44-0 | .02 - .40     | PEL as Nuisance Dust   | 15                         | 10                          |
| • Chromium  | 7440-47-3 | 11.00 - 18.00 | PEL as Chromium Metal<br>PEL As Chromium (VI)  | 1<br>.1                    | .5<br>.05                   |
| Copper      | 7440-50-8 | .01 - 1.20    | PEL as Copper Fume<br>PEL as Copper Dust & Mist  | .1<br>1                    | .2<br>1                     |
| Iron        | 1309-37-1 | Balance       | PEL as Iron Oxide Fume   | 10                         | 5                           |
| • Manganese | 7439-98-5 | .50 - 2.00    | PEL as Manganese Dust<br>PEL as Manganese Fume   | 5<br>5                     | 5<br>1                      |
| Molybdenum  | 7439-98-7 | .05 - 1.00    | PEL Insoluble Compounds  | 15                         | 10                          |
| • Nickel    | 7440-02-0 | .05 - 2.00    | PEL as Nickel Metal  | 1                          | 1                           |
| Silicon     | 7440-21-3 | .10 - 2.00    | PEL as Nuisance Dust   | 15                         | 10                          |
| Sulfur      | 7704-34-9 | .001 - .40    | PEL as Nuisance Dust   | 15                         | 10                          |
| Vanadium    | 7440-82-2 | .02 - .20     | PEL as V <sub>2</sub> O <sub>5</sub> Dust<br>PEL as V <sub>2</sub> O <sub>5</sub> Fume | .5<br>.1                   | .05<br>.05                  |

\* Indicates that this ingredient is classified as a toxic chemical subject to the reporting requirements of Section 313, Title III of the Superfund Amendments and Reauthorization Act of 1980 and 40 CFR Part 372.

The chemical ranges presented above are given for industrial hygiene and environmental uses and are not to be construed as a material specification for product application. All information presented has been taken from data believed to be reliable at the time of preparation. Additional elements may be present in these products in trace amounts including aluminum, arsenic, boron, calcium, cadmium, cobalt, lead, phosphorous, tin, titanium and zirconium. Steel products as shipped do not present an exposure hazard but can present a hazard during subsequent manufacturing operations.

EDRO Specialty Steels, Inc. 20500 Carrey Road Walnut, CA 91789

**III PHYSICAL AND CHEMICAL CHARACTERISTICS**

|                                |  |
|--------------------------------|--|
| Boiling Point: N/A             | Melting Point: 2400 – 2800°F (1315 – 1538°C)             |
| Vapor Pressure (mm Hg): N/A    | Specific Gravity (H <sub>2</sub> O = 1): Approximately 8 |
| Vapor Density (Air = 1): N/A   | Evaporation Rate (H <sub>2</sub> O = 1 ): N/A            |
| Solubility in Water: Insoluble | Appearance and Odor: Solid Gray, odorless metal          |

**IV PHYSICAL AND CHEMICAL HAZARDS**

|                                       |   |
|---------------------------------------|---|
| Flash Point: Not Flammable            | LEL: N/A                                |
| Extinguishing Media: N/A              | UEL: N/A                                |
| Special Fire Fighting procedures: N/A | Unusual Fire and Explosion Hazards: N/A |

**V REACTIVITY DATA**

|   |                                |
|---|--------------------------------|
| Stability: Stable                           | Conditions to Avoid: N/A       |
| Incompatibility: N/A                        | Polymerization: Will not occur |
| Hazardous decomposition or byproducts: None |                                |

**VI HEALTH HAZARD DATA**

Typical Routes of Entry: Inhalation: Yes    Skin: No    Ingestion: No    Eye Contact: No

**Chromium and/or Nickel:** Certain forms of chromium and nickel have been associated with cancer of the lungs and nasal passages. Elemental, divalent and trivalent chromium compounds, i.e. as in steel, have not been found to cause cancer in humans. Nickel and chromium have been found to cause adverse skin and respiratory reactions including dermatitis, bronchitis, ulceration and perforation of the nasal septum, coughing, wheezing and dyspnea. Skin contact generally under high temperature and humidity has been associated with a dermatitis known as "Nickel Itch"

**Copper:** Inhalation may cause metal fume fever, a flu like illness. Signs and symptoms may include fever, chills, muscle aches, nausea, sweet metallic taste in mouth and dry throat. Exposure has been associated with discoloration of the skin and hair. Chronic exposure may damage liver, kidney and spleen. Copper oxide is an irritant to eyes and upper respiratory tract.

**Iron Oxide:** Prolonged or repeated exposure to high concentrations may cause lung changes considered to be a benign pneumoconiosis (siderosis). Inhalation of iron oxide may cause irritation of eyes, nose and throat and metal fume fever.

**Manganese:** Exposure may cause irritation of eyes, nose and throat, metallic taste in mouth and metal fume fever. Advanced exposure symptoms may include weakness, sleepiness, nervousness, lack of coordination, uncontrollable laughter, mental confusion, speech disturbances and aggressiveness. Manganese may cause bronchitis, pneumonitis and central nervous system disturbance.

**Molybdenum:** Slight irritation of eyes, nose and throat. Animal studies suggest the possibility of digestive disturbances such as: colic, diarrhea, weight loss and development of pneumoconiosis, anemia and gout.

**Vanadium:** Irritation of respiratory tract and conjunctivae. Excessive exposure may result in skin pallor, greenish discoloration of the tongue, eczematous skin lesions, cough, bronchitis and chest pains. Long term exposure may cause pulmonary edema, pneumonia, chronic bronchitis, anemia, albuminuria and nervous complaints.

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**Carcinogenic References:** Certain elements in steel products such as arsenic, chromium, nickel and cobalt-chromium alloys have been identified by the International Agency for Research on Cancer (IARC) and/or the National Toxicology Program (NTP) as potential cancer causing agents.

## VII PRECAUTIONS FOR SAFE HANDLING

Product is a solid material as shipped. No potential for spillage or leaking exists.

## VIII CONTROL MEASURES

**Ventilation:** If your operation generates particulates when processing this material, local and general ventilation may be necessary to control employee exposures to within applicable limits.

**Respiratory protection:** If it is anticipated that the exposure limits indicated will be exceeded, NIOSH approved respirators against dust and/or fumes should be worn in accordance with 29 CFR 1910.134

**Protective equipment:** Appropriate protective equipment should be worn when burning or welding this material. Gloves should be considered when handling material to prevent cuts and skin irritations. Approved eye protection is recommended for operations involving burning, grinding, brazing, welding or machining.

## IX GENERAL

The information in the MSDS was obtained from sources we believe are reliable, however the information is provided without any representation or warranty, express or implied regarding the accuracy or correctness.

We do not consider this material in the form it is sold to constitute a physical hazard or a health hazard. Subsequent operations such as abrading, melting, welding, cutting or processing in any other fashion that causes a release of dust or fumes may cause some of the ingredients to change to a form which could affect exposed workers.

## X Emergency First Aid:

The conditions or methods of handling, storage, use and disposal of this material are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way with the handling, storage, use or disposal of this material. The following generally accepted procedures should be considered in cases of suspected health effecting exposures:

**Inhalation:** Move victim away from source into fresh air and seek medical assistance. If breathing has ceased, CPR should be attempted by qualified personnel. Affected person should be kept at rest and warm as possible.

**Eyes:** Flush with copious amounts of clear water for several minutes. Seek medical attention.

**Skin:** Wash any dusts and particles off skin with ordinary soap and water. Remove any contaminated clothing or safety equipment and clean thoroughly before reuse. If a rash or skin irritation develops, seek medical attention.

**Ingestion:** Seek medical attention immediately.