



1040 COUNTY RD. 17, P.O. BOX 322 L'ORIGINAL, ONTARIO, CANADA K0B 1K0
(613) 675-4671

January 6, 2017

Subject: Material Safety Data Sheets (MSDS)

Enclosed are revised Material Safety Data Sheets (MSDS) and labels for the steel products you have recently purchased or may purchase in the future from Ivaco Rolling Mills LP. The revised sheets supersede any previous versions, therefore, please update your MSDS files accordingly.

The labels can be reproduced or the information contained therein extracted for label-producing purposes.

These Material Safety Data Sheets and labels contain information that is valuable to your employees' health and safety program. It is important that your personnel responsible for hazard communication, industrial hygiene or safety receive this information and that it is communicated and made available to those employees having contact with these products. It is also important that you transmit this information to your customers and processors.

Revised Material Safety Data Sheets will be forwarded to you when changes to the information contained therein necessitate a new publication.

If you have any questions concerning the Material Safety Data Sheet program, please contact your Ivaco Rolling Mills LP representative for assistance.

Yours truly,

A handwritten signature in black ink, appearing to read "Denis Lajoie". The signature is stylized with a large, looped initial "D" and a long horizontal stroke extending to the right.

Denis Lajoie
Health and Safety Supervisor

Encl.

STEEL ACIER



RISKS

- May cause health effects during dust/fume generating activities.
- May cause respiratory system effects when dust/fumes are inhaled.
- May cause skin irritation when in prolonged contact with surface.

PRECAUTIONARY MEASURES

- Limit skin contact. Wear protective gloves.
- Avoid creating dust/fumes.
- During dust/fumes generating activities, provide mechanical ventilation or wear personal protective equipment (i.e., eye protection protective clothing and appropriate NIOSH approved respirator).

FIRST AID

- Inhalation:* For overexposure to dust/fumes, remove to fresh air.
- Skin:* Wash with mild soap and maintain good personal hygiene.
- Eyes:* Treat for foreign body in the eye.

In all cases, seek medical attention if necessary.

Refer to material safety data sheet for further information.

IVACO ROLLING MILLS LP
A Heico Company
1040 County Road 17, P.O. Box 322
L'Orignal, Ontario
KOB 1KO
(613) 675-4671

RISQUES

- Peut causer des effets sur la santé pendant les activités produisant des poussières et des fumées.
- Peut causer des effets sur les voies respiratoires en cas d'inhalation des poussières et des fumées.
- Peut irriter la peau en cas de contact prolongé.

MESURES DE PREVENTION

- Restreindre le contact avec la peau. Porter des gants.
- Éviter de produire des poussières et des fumées.
- Pendant les activités produisant des poussières et des fumées, prévoir une ventilation mécanique ou porter de l'équipement de protection individuelle, c.à-d. un appareil de protection oculaire, des vêtements protecteurs et un respirateur approprié, homologué par le NIOSH.

PREMIERS SOINS

- Inhalation:* En cas de surexposition aux poussières et aux fumées, amener la victime à l'air frais.
- Peau:* Savonner les parties du corps exposées et adopter une bonne hygiène personnelle.
- Yeux:* Donner le traitement approprié pour enlever les corps étrangers des yeux.

Dans tous les cas, obtenir des soins médicaux au besoin.

Pour plus de renseignements, consulter la fiche signalétique.

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MATERIAL SAFETY DATA SHEET

Section 1: Product Information

Product: Steel

Use: Manufacture of steel products

Manufacturer/Supplier: IVACO Rolling Mills LP
A HEICO Company
1040 County Road 17, P.O. Box 322
L'Orignal, Ontario, Canada, K0B 1K0

Emergency Telephone No.: (613) 675-4671

Section 2: Preparation Information

Prepared by: Health and Safety Department Telephone Number: (613)675-4671

Date: February 8, 2017

Section 3: Hazardous Ingredients

| Hazardous Ingredient | CAS Number | Maximum Concentration % (weight/weight) | LD50/LC50 (Species and route) | Exposure Limits TLV ACGIH (mg/M3) |
|----------------------|------------|--|--|---|
| Iron (Fe) | 7439-89-6 | 91-99 | LD ₅₀ rat-oral:30g/kg; guinea pig-oral 20 g/kg LC ₅₀ n/av | TWA: 5 (iron oxide dust and fume as Fe) STEL: n/av |
| Manganese (Mn) | 7439-96-5 | 1.0-5.0 | LD ₅₀ rat oral:9g/kg; LC ₅₀ n/av | TWA: 5(dust and compounds) 1(fume) STEL: n/av (dust and compounds) 3 (fume) |
| Chromium (Cr) | 7440-47-3 | 1.0-5.0 | n/av | TWA: 0.5 (metal and inorganic compounds, as Cr; metal and Cr III compounds) 0.05 (water soluble Cr VI compounds, NOC 0.01) insoluble Cr VI compounds, NOC STEL: n/av |

n/ap = not applicable
n/av = not available

Section 3: Hazardous Ingredients (cont'd)

| Hazardous Ingredient | CAS Number | Maximum Concentration % (weight/weight) | LD50/LC50 (Species and route) | Exposure Limits TLV ACGIH (mg/M3) |
|----------------------|------------|--|---|--|
| Silicon (Si) | 7440-21-3 | 0.5-1.5 | LD ₅₀ rat-oral: 3160 mg/kg LC ₅₀ n/av | TWA: 10 STEL: n/av |
| Carbon (C) | 7440-44-0 | 0.1-1.0 | LD ₅₀ mouse-iv: 440 mg/kg LC ₅₀ n/av | TWA: n/av STEL: n/av |
| Nickel (Ni) | 7440-02-0 | 0.1-1.0 | n/av | TWA: 1 (metal; insoluble compounds, as Ni) 0.1 (soluble compounds as Ni), STEL: n/av |
| Molybdenum (Mo) | 7439-98-7 | 0.1-1.0 | n/av | TWA: 5 (soluble compounds) 10 (insoluble compounds) STEL: n/av |
| Sulphur (S) | 7704-34-9 | 0.1-1.0 | n/av | TWA: n/av STEL: n/av |
| Tin (Sn) | 7440-31-5 | 0.1-1.0 | n/av | TWA: 2 STEL: n/av |
| Phosphorus (P) | 7723-14-0 | 0.1-1.0 | n/av | TWA: 0.1 STEL: n/av |
| Copper (Cu) | 7440-50-8 | 0.1-1.0 | LD ₅₀ mouse-ip: 3500 ug/kg LC ₅₀ n/av | TWA: 0.2 (fume) 1 (dusts & mists, as Cu) STEL: n/av |
| Vanadium (V) | 7440-62-2 | 0.1-1.0 | LD ₅₀ rabbit-sub-cutaneous: 59 mg/kg LC ₅₀ n/av | TWA: 0.05 (respirable dust/fume, as V2O5) STEL: n/av |
| Aluminum (Al) | 7429-90-5 | <0.10 | n/av | TWA: 10 (metal dust) 5 (welding fume, as Al) STEL: n/av |
| Titanium (Ti) | 7440-32-6 | <0.10 | n/av | TWA: n/av STEL: n/av |
| Boron (B) | 7440-42-8 | <0.10 | LD ₅₀ rat-oral: 650 mg/kg; mouse-oral: 560 mg/kg; rabbit & guinea pig - oral: 310 mg/kg LC ₅₀ n/av | TWA: n/av STEL: n/av |

Section 4: Physical Data

| | | | |
|------------------------------|-----------------------------|---|-----------------|
| PHYSICAL STATE: | Solid | EVAPORATION RATE: | n/ap |
| ODOUR AND APPEARANCE: | No odor, metallic luster | BOILING POINT | 2750° (approx.) |
| ODOUR THRESHOLD: | n/ap | FREEZING POINT | 1530° (approx.) |
| SPECIFIC GRAVITY: | 7.86 | pH: | n/ap |
| VAPOUR PRESSURE: | n/ap | COEFFICIENT OF WATER/ OIL DISTRIBUTION | n/ap |
| VAPOUR DENSITY: | n/ap | | |

Section 5: Fire or Explosion Hazard

Not applicable

Section 6: Reactivity Data

| | |
|---|--|
| CONDITIONS UNDER WHICH THE PRODUCT IS CHEMICALLY UNSTABLE: | Stable |
| NAME OF SUBSTANCE OR CLASS OF SUBSTANCES WITH WHICH THE PRODUCT IS INCOMPATIBLE: | Acids |
| CONDITIONS OF REACTIVITY: | When in molten state, contact with water or ice can result in violent splashes (release of flammable hydrogen gas) |
| HAZARDOUS DECOMPOSITION PRODUCTS: | Metal oxides of hazardous ingredients listed in Section 3, carbon monoxide |

Section 7: Toxicological Properties

ROUTES OF ENTRY:

| | |
|-------------------------|-----|
| Skin contact: | Yes |
| Skin absorption: | No |
| Eye contact: | Yes |
| Inhalation: | Yes |
| Ingestion: | No |

Fumes and/or dusts may be generated from further processing of the product by the user, such as welding, burning, cutting, grinding, machining, melting, crushing, screening or handling activities.

EFFECTS OF ACUTE EXPOSURE TO PRODUCT:

Overexposure to dust or fume formed when further processing the product may be an irritant to eyes, skin and respiratory tract. An overexposure by inhalation to decomposition products may cause metal fume fever characterized by fever and chills.

Section 7: Toxicological Properties (cont'd)

EFFECTS OF CHRONIC EXPOSURE TO PRODUCT:

| | |
|--------------------|---|
| Iron: | Siderosis |
| Manganese: | May adversely affect central nervous system (CNS) and respiratory system (e.g., asthma) |
| Chromium: | Dermatitis, skin ulcerations, allergic reactions, respiratory symptoms (e.g., asthma), lung cancer |
| Silicon: | Considered a nuisance particulate |
| Carbon: | Eye and respiratory tract irritant |
| Nickel: | Allergic dermatitis ("nickel itch"), lung inflammation, asthma, cancer of the respiratory system |
| Molybdenum: | Weight loss, diarrhea, loss of coordination, pneumoconiosis, breathing difficulties |
| Sulphur: | Mucous membranes irritation |
| Tin: | Stannosis |
| Phosphorus: | Cough, bronchitis, pneumonia |
| Copper: | Skin and hair discoloration, metallic or sweet taste |
| Vanadium: | Inflammation of respiratory passages, asthma, cardiac palpitations, gastrointestinal discomfort, renal damage, nervous depression |
| Aluminum: | Shaver's disease (fibrotic lung) |
| Titanium: | Mucous membranes irritation |
| Boron: | Conjunctivitis |

EXPOSURE LIMITS: Refer to Section 3,

IRRITANCY OF PRODUCT: n/ap

SENSITIZATION TO PRODUCT: n/ap

CARCINOGENICITY: The National Toxicology Program (NTP) and the International Agency of Research on Cancer (IARC) list certain chromium and nickel compounds under the category "confirmed human carcinogen".

REPRODUCTIVE TOXICITY: n/av

TERATOGENICITY: n/av

MUTAGENICITY: n/av

NAME OF TOXICOLOGICALLY SYNERGISTIC PRODUCTS: n/av

Section 8: Preventative Measures

PERSONAL PROTECTIVE EQUIPMENT TO BE USED:

Eye Protection:

Use safety glasses and/or other protective eyewear when exposure to eye or face hazards exists, such as flying objects, molten metal and injurious light radiation (e.g. welding and burning).

Skin Protection:

Use protective gloves and/or other personal protective equipment when welding, burning or handling.

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 dusts and metal fume in accordance with manufacturers' instructions and use limitations.

SPECIFIC ENGINEERING CONTROLS TO BE USED:

Avoid creating dust/fumes. General or local exhaust ventilation is recommended near source when fumes or dusts are emitted.

PROCEDURES TO BE FOLLOWED IN CASE OF LEAK OR SPILL:

n/ap

WASTE DISPOSAL:

Product can be recycled for further use, disposed in an appropriately permitted waste landfill or by other methods in accordance with local, state, provincial and federal regulations.

HANDLING PROCEDURES AND EQUIPMENT:

Use lifting and work devices with rated capacities and in accordance with manufacturers' instructions.

STORAGE REQUIREMENTS.

n/ap

SPECIAL SHIPPING INFORMATION:

n/ap

Section 9: First Aid Measures

SPECIFIC FIRST AID MEASURES:

Skin:

Wash with mild soap and maintain good personal hygiene. Seek medical attention if conditions persist.

Eyes:

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

Inhalation:

For overexposure to dust/fumes, remove to fresh air. Seek medical attention if necessary.

Section 10: Additional General Information

Disclaimer

The information contained in this material safety data sheet is based on information available to Ivaco Rolling Mills Limited Partnership ("IRM") and is believed to be accurate. Where this information is based on data developed by third parties, IRM expressly denies liability. IRM makes no warranty, expressed or implied, regarding the accuracy this information or data or the results obtained from its use. All recommendations are made without guarantee, since the conditions of use of this product are beyond IRM's control. IRM assumes no responsibility for any damages resulting from the use of this product described herein.

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