



COLUMBIA STEEL CASTING CO., INC.

*Meets the Requirements of OSHA Standard 29 CFR 1910.1200 Hazard Communication and EPA Supplier Notification Requirements under Section 313 of the Emergency Planning and Community Right-to-Know Act.*

SAFETY DATA SHEET (SDS):  
CARBON AND LOW ALLOY STEEL CASTINGS

DATE ISSUED:  
January 2017

**SECTION 1 – PRODUCT IDENTIFICATION & COMPANY INFORMATION**

PRODUCT NAME:

**CARBON AND LOW ALLOY STEEL CASTINGS**

OTHER DESIGNATIONS:

ASTM (American Society for Testing & Materials) Specification Numbers, (ACI (Alloy Casting Institute) Alloy Designations—Grades)

ASTM Numbers: N/A

ACI ALLOY DESIGNATIONS (GRADES): N/A

PRODUCT IDENTIFICATION (LABEL IDENTIFIER):

CARBON AND LOW ALLOY STEEL CASTINGS – ALLOY DESIGNATIONS “A”, “C”, “H”, “K”

MANUFACTURER’S NAME:

Columbia Steel Casting Co., Inc.

STREET ADDRESS:

10425 N. Bloss Avenue

EMERGENCY TELEPHONE NO.:

503-286-0685

MAILING ADDRESS:

PO Box 83095

TELEPHONE NO.:

503-286-0685

CITY, STATE, ZIP, COUNTRY:

Portland, Oregon, 97283-0095, USA

FAX NO.:

503-286-1743

EMAIL / WEBSITE:

service@columbiasteel.com / columbiasteel.com

RECOMMENDED USE OF CHEMICAL AND RESTRICTIONS ON USE:

Solid casting; no restrictions

**SECTION 2 – HAZARD IDENTIFICATION**

CLASSIFICATION

Castings are metallic articles that do not present hazards in their original form.

OTHER INFORMATION

1. Grinding castings that have not been cleaned or that contain embedded sand may generate significant amounts of dust containing crystalline silica.
2. Fumes from hot processes may contain other compounds with different exposure limits. Dust or fumes generated by machining, grinding, welding or thermal cutting of the casting may produce airborne contaminants. Consult Sections 3 & 8 for further information.

**SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS**

CHEMICAL NAME / COMMON NAMES / SYNONYM	WT %	CAS NUMBER
Chromium (Cr)	0-6.0	7440-47-3
Iron (Fe)	Remainder	7439-89-6
Molybdenum (Mo)	0 – 2.0	7439-98-7
Nickel (Ni)	0 – 2.0	7440-02-0

**SECTION 4 – FIRST AID MEASURES**

EYE CONTACT: Not applicable

SKIN CONTACT: No special requirements

INGESTION: Not applicable

INHALATION: Not applicable

**SECTION 5 – FIREFIGHTING MEASURES**

FLAMMABLE PROPERTIES: Not applicable

EXTINGUISHING MEDIA: Not applicable

PROTECTION OF FIREFIGHTERS: Not applicable

**SECTION 6 – ACCIDENTAL RELEASE MEASURES**

Not applicable

**SECTION 7 – HANDLING & STORAGE**

RECOMMENDED STORAGE: No special requirements

PROCEDURES FOR HANDLING: Proper hand and foot protection is recommended

**SECTION 8 – EXPOSURE CONTROL / PERSONAL PROTECTION**

**ENGINEERING CONTROLS**

None required. There are no health hazards from castings in solid form.

SUBSTANCE	ACGIH TLV mg/m <sup>3</sup>	OSHA PEL mg/m <sup>3</sup>
Chromium (Cr)	0.5	1
Iron (Fe)	N/E	N/E
Molybdenum (Mo)	10	15
Nickel (Ni)	1.5(I)	1

**SUPPLEMENTAL INFORMATION**

Grinding castings that have not been cleaned or that contain embedded sand may generate significant amounts of dust containing crystalline silica.

Fumes from hot processes may contain other compounds with different exposure limits than those listed above. Dust or fumes generated by machining, grinding, welding or thermal cutting of the casting may produce airborne contaminants. Exposure limits for the most common contaminants are offered as reference. Please consult a competent person for guidance on exposure assessment and controls.

**In particular, Hexavalent Chromium is an OSHA Expanded Health Standard; refer to OSHA 29 CFR 1910.1026-Chromium (VI) for complete requirements.**

SUBSTANCE	ACGIH TLV mg/m <sup>3</sup>	OSHA PEL mg/m <sup>3</sup>
Chromium Compounds (as Cr):		
Chromium (II) inorganic compounds	N/E	0.5
Chromium (III) inorganic compounds	0.5	0.5
Chromium (VI) inorganic compounds, certain water insoluble	0.01	0.005
Chromium (VI) inorganic compounds, water soluble	0.05	0.005
Chromium (VI) all forms and compounds	N/E	0.005
Iron Compounds:		
Iron oxide (Fe <sub>2</sub> O <sub>3</sub> ) fume	N/E	10
Iron oxide (Fe <sub>2</sub> O <sub>3</sub> )	5 (R)	N/E
Nickel Compounds (as Ni):		
Insoluble, inorganic compounds	0.2(I)	1
Soluble, inorganic compounds	0.1(I)	1
Nickel oxide	0.2(I)	1

**TERMS**

All exposure limits referenced above are 8 hour time weighted averages (TWA) unless otherwise noted.

N/E = None Established

C = Ceiling

I = Inhalable fraction

R= Respirable fraction

TLV = Threshold Limit Value/ACGIH (American Conference of Industrial Hygienists)

PEL = Permissible Exposure Limit/OSHA (Occupational Safety & Health Administration)

STEL= Short Term Exposure Limit

mg/m<sup>3</sup> = milligrams per cubic meter

**PERSONAL PROTECTION**

Proper hand and foot protection is recommended.

## SECTION 9 – PHYSICAL & CHEMICAL PROPERTIES

APPEARANCE / PHYSICAL STATE Solid, silver gray in color	
ODOR / ODOR THRESHOLD None	VAPOR DENSITY Not applicable
MELTING POINT / FREEZING POINT 2750 °F (1510 °C)	SPECIFIC GRAVITY (Relative Density) 0.28 lb/in <sup>3</sup> (7.74 g/cm <sup>3</sup> ) for cast alloy steels
BOILING POINT 5000°F (2750°C) for iron	VAPOR PRESSURE Not applicable
FLASH POINT Not applicable for solid castings	EVAPORATION RATE Not applicable
FLAMMABILITY Not flammable	SOLUBILITY IN WATER Insoluble
UPPER & LOWER FLAMMABILITY LIMITS Not applicable for solid castings	pH Not applicable
AUTO IGNITION TEMPERATURE Not applicable	VISCOSITY Not applicable
DECOMPOSITION TEMPERATURE Not applicable	PARTITION COEFFICIENT Not applicable

## SECTION 10 – STABILITY & REACTIVITY

CHEMICAL STABILITY Stable	
CONDITIONS TO AVOID None	
REACTIVITY Not reactive	INCOMPATIBLE MATERIALS None
HAZARDOUS DECOMPOSITION PRODUCTS None	POSSIBILITY OF HAZARDOUS REACTIONS Not applicable

## SECTION 11 – TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS	
EYE CONTACT: None	
SKIN: None	
INGESTION: None	
INHALATION: None	

### CARCINOGEN CLASSIFICATION OF INGREDIENTS

INGREDIENT	OSHA	NTP	IARC	TARGET ORGAN
Nickel (metal)	NL	K	2B	Lung, Nose
Chromium	Y	NL	3	Lung
Molybdenum	NL	NL	NL	

<p>TERMS</p> <p>OSHA—Occupational Safety &amp; Health Administration</p> <p>Y = Listed as a Human Carcinogen</p> <p>NTP—National Toxicology Program</p> <p>K = Known to be a Human Carcinogen</p> <p>R = Reasonably Anticipated to be a Human Carcinogen (RAHC)</p> <p>IARC—International Agency for Research on Cancer</p> <p>1 = Carcinogen to Humans</p> <p>2A = Probably Carcinogenic to Humans</p> <p>2B = Possibly Carcinogenic to Humans</p> <p>3 = Unclassifiable as to Carcinogenicity in Humans</p> <p>4 = Probably not Carcinogenic to Humans</p>
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Other NL = Not Listed
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### SECTION 12- ECOLOGICAL INFORMATION

ECOTOXICITY Not applicable	PERSISTENCE AND DEGRADABILITY Not applicable
BIOACCUMULATION POTENTIAL Not applicable	MOBILITY IN SOILD Not applicable
OTHER ADVERSE EFFECTS Not applicable	

### SECTION 13 – DISPOSAL CONSIDERATIONS

Recover or recycle if possible. Dispose of according to federal, state and local regulations. Dust collected from machining, welding, etc. may be classified as a hazardous waste. Consult federal, state and local regulations.

### SECTION 14 – TRANSPORT INFORMATION

US DEPARTMENT OF TRANSPORTATION (DOT)-HMR (Hazardous Materials Registrations) Not regulated	CANADIAN TRANSPORTATION OF DANGEROUS GOODS (TDG) Not regulated
UN SHIPPING NAME Not regulated	UN NUMBER Not regulated
TRANSPORT HAZARD CLASS Not regulated	PACKING GROUP Not regulated
ENVIRONMENTAL HAZARDS None	LABEL(S) REQUIRED? No
TRANSPORT IN BULK Not applicable	SPECIAL SHIPPING INFORMATION Not applicable

### SECTION 15 – REGULATORY INFORMATION

<p><b>US-OSHA (Hazard Communication Standard)</b> Reference 29 CFR 1910.1200 and 1910.1000. A finished casting is an article as defined in the OSHA Hazard Communication Standard 29CFR 1910.1200 (c). Dust or fumes generated by cleaning, machining, grinding, or welding of the casting may produce airborne contaminants, such as chromium, iron, nickel, and silica. For hexavalent chromium references see 29 CFR 1910.1026.</p>
<p><b>US-EPA (Toxic Substances Control Act–TSCA)</b> All components of these products are on the TSCA inventory list or are excluded from listing.</p>
<p><b>US-EPA (SARA Title III)</b> Releases to the environment of Chromium, Manganese, Molybdenum, and Nickel, may be subject to reporting under Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.</p>
<p><b>CANADA-WHMIS (Workplace Hazardous Materials Information System)</b> This SDS has been prepared according to the hazard criteria of the Controlled Product Regulations (CPR) and the SDS contains the information required by the CPR.</p>
<p><b>CANADA DSL (Domestic Substance List) Inventory Status</b> All components of these products are on the DSL Inventory.</p>
<p><b>CEPA (Canadian Environmental Protection Act)</b> Chromium and nickel are on the CEPA Priority Substances List.</p>
<p><b>EINECS No. (European Inventory of Existing Commercial Chemical Substances)</b> All components of these products are on the EINECS list.</p>
<p><b>RoHS (Restriction of Certain Hazardous Substances) Compliance</b> Castings comply with RoHS</p>
<p><b>CALIFORNIA PROPOSITION 65 Compliance</b> WARNING: This product contains or produces chemicals known to the State of California to cause cancer and birth</p>

defects (or other reproductive harm). (California Health & Safety Code 25248.5 et seq.)

**US STATE REGULATORY INFORMATION**

Some of the components listed in Section 3 may be covered under specific state regulations.

**SECTION 16 – OTHER INFORMATION**

SDS SHEET PREPARED BY:

Columbia Steel Casting Co., Inc.

DATE:

January 2017

**NOTE**

This data and label information is offered in good faith as typical values and not as a product specification. No warranty either expressed or implied is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review the recommendations in specific context of the intended use and determine if they are appropriate.

## ADDENDUM: LABEL INFORMATION

<u>PRODUCT IDENTIFIER</u> <b>CARBON AND LOW ALLOY STEEL CASTINGS</b>	
<u>SUPPLIER IDENTIFICATION</u>  COMPANY NAME: Columbia Steel Casting Co., Inc.  STREET ADDRESS: 10425 N. Bloss Avenue  MAILING ADDRESS: PO Box 83095  CITY, STATE, ZIP, COUNTRY: Portland, Oregon, 97283-0095, USA  EMERGENCY TELEPHONE NO.:	<u>HAZARD PICTOGRAMS</u> *None          <u>SIGNAL WORD</u> *None
<u>PRECAUTIONARY STATEMENTS</u> None*	<u>HAZARD STATEMENTS</u> *None
*Castings do not present hazards in their original form.  <u>OTHER INFORMATION</u> 1. Grinding castings that have not been cleaned or that contain embedded sand may generate significant amounts of dust containing crystalline silica.  2. Fumes from hot processes may contain other compounds with different exposure limits. Dust or fumes generated by machining, grinding, welding or thermal cutting of the casting may produce airborne contaminants. Consult Sections 3 & 8 of the SDS for further information.	