DUCTILE IRON and COMPACTED GRAPHITE IRON (CGI) CASTINGS


PRODUCT IDENTIFICATION (Label Identifier)
CASTING, DUCTILE IRON

MANUFACTURER’S NAME
DONSCO, INC.

STREET ADDRESS
124 N. FRONT ST.

EMERGENCY TELEPHONE NO.
717-252-1561 EXT 200

MAILING ADDRESS
P. O. BOX 2001

TELEPHONE NO.
717-252-1561

CITY, STATE, ZIP CODE, COUNTRY
WRIGHTSVILLE, PA, 17368

FAX NO.
717-252-5629

E-MAIL ADDRESS/WEBSITE
WWW.DONSCO.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

<table>
<thead>
<tr>
<th>CHEMICAL NAME/COMMON NAME/SYNONYM</th>
<th>Wt %</th>
<th>CAS NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon (C)</td>
<td>3.0–4.3</td>
<td>7440-44-0</td>
</tr>
<tr>
<td>Chromium (Cr)</td>
<td>0.02–0.13</td>
<td>7440-47-3</td>
</tr>
<tr>
<td>Copper (Cu)</td>
<td>0.01–1.5</td>
<td>7440-50-8</td>
</tr>
<tr>
<td>Iron (Fe)</td>
<td>87.7–95.1</td>
<td>7439-89-6</td>
</tr>
<tr>
<td>Magnesium (Mg)</td>
<td>0.0001–0.10</td>
<td>7439-95-4</td>
</tr>
<tr>
<td>Manganese (Mn)</td>
<td>&lt;1.2</td>
<td>7439-96-5</td>
</tr>
<tr>
<td>Molybdenum (Mo)</td>
<td>0.01–0.50</td>
<td>7439-98-7</td>
</tr>
<tr>
<td>Nickel (Ni)</td>
<td>0.1–2</td>
<td>7440-02-0</td>
</tr>
<tr>
<td>Silicon (Si)</td>
<td>1.8–4</td>
<td>7440-21-3</td>
</tr>
<tr>
<td>Tin (Sn)</td>
<td>0.1–0.15</td>
<td>7440-31-5</td>
</tr>
</tbody>
</table>
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 CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS
None Required. There are no health hazards from castings in solid form.

<table>
<thead>
<tr>
<th>SUBSTANCE</th>
<th>ACGIH TLV mg/m³</th>
<th>OSHA PEL mg/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon (C)</td>
<td>N/E</td>
<td>N/E</td>
</tr>
<tr>
<td>Chromium (Cr)</td>
<td>0.5</td>
<td>1</td>
</tr>
<tr>
<td>Copper (Cu)</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Iron (Fe)</td>
<td>N/E</td>
<td>N/E</td>
</tr>
<tr>
<td>Magnesium (Mg) oxide</td>
<td>10 (I)</td>
<td>15</td>
</tr>
<tr>
<td>Manganese (Mn)</td>
<td>0.02 (R); 0.1 (I)</td>
<td>5 (C)</td>
</tr>
<tr>
<td>Molybdenum (Mo) insoluble</td>
<td>10 (I); 3 (R)</td>
<td>15</td>
</tr>
<tr>
<td>Nickel (Ni)</td>
<td>1.5 (I)</td>
<td>1</td>
</tr>
<tr>
<td>Silicon (Si)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total dust</td>
<td>N/E</td>
<td>15</td>
</tr>
<tr>
<td>Respirable dust</td>
<td>N/E</td>
<td>5</td>
</tr>
<tr>
<td>Tin (Sn)</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

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.
<table>
<thead>
<tr>
<th>SUBSTANCE</th>
<th>ACGIH TLV mg/m³</th>
<th>OSHA PEL mg/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium Compounds (as Cr)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chromium (II) inorganic compounds</td>
<td>N/E</td>
<td>0.5</td>
</tr>
<tr>
<td>Chromium (III) inorganic compounds</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>Chromium (VI) inorganic compounds, certain water insoluble</td>
<td>0.01</td>
<td>0.005</td>
</tr>
<tr>
<td>Chromium (VI) inorganic compounds, water soluble</td>
<td>0.05</td>
<td>0.005</td>
</tr>
<tr>
<td>Chromium (VI) all forms and compounds</td>
<td>N/E</td>
<td>0.005</td>
</tr>
<tr>
<td>Copper Compounds (as Cu)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fume, as Cu</td>
<td>0.2</td>
<td>0.1</td>
</tr>
<tr>
<td>Dusts and mists, as Cu</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Iron Compounds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iron oxide (Fe₂O₃) fume</td>
<td>N/E</td>
<td>10</td>
</tr>
<tr>
<td>Iron oxide (Fe₂O₃)</td>
<td>5 (R)</td>
<td>N/E</td>
</tr>
<tr>
<td>Nickel Compounds (as Ni)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insoluble, inorganic compounds</td>
<td>0.2(I)</td>
<td>1</td>
</tr>
<tr>
<td>Soluble, inorganic compounds</td>
<td>0.1(I)</td>
<td>1</td>
</tr>
<tr>
<td>Nickel oxide</td>
<td>0.2(I)</td>
<td>1</td>
</tr>
<tr>
<td>Tin compounds (as Sn)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tin Oxide &amp; inorganic compounds, except SnH₄</td>
<td>2</td>
<td>N/E</td>
</tr>
<tr>
<td>Inorganic compounds, except oxides, as Sn</td>
<td>N/E</td>
<td>2</td>
</tr>
<tr>
<td>Tin Oxides, as Sn</td>
<td>2.0</td>
<td>N/E</td>
</tr>
</tbody>
</table>

**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/American Conference of Industrial Hygienists (ACGIH)
PEL = Permissible Exposure Limit / OSHA
mg/m³ = 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**
Approximately 2350°F (1300°C)

**SPECIFIC GRAVITY (RELATIVE DENSITY)**
7.85 g/cm³ for iron

**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 AND LOWER FLAMMABILITY LIMITS**
Not applicable for solid castings

**pH**
Not applicable

**AUTO IGNITION TEMPERATURE**
Not applicable

**VISCOSITY**
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

<table>
<thead>
<tr>
<th>INGREDIENT</th>
<th>OSHA</th>
<th>NTP</th>
<th>IARC</th>
<th>TARGET ORGAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nickel (metal)</td>
<td>NL</td>
<td>R</td>
<td>2B</td>
<td>Lung, Nose</td>
</tr>
</tbody>
</table>

TERMS
OSHA—Occupational Safety & Health Administration
Y = Listed as a Human Carcinogen

NTP—National Toxicology Program
K = Known to be a Human Carcinogen
R = Reasonably Anticipated to be a Human Carcinogen (RAHC)

IARC—International Agency for Research on Cancer
1 = Carcinogen to Humans
2A = Probably Carcinogenic to Humans
2B = Possibly Carcinogenic to Humans
3 = Unclassifiable as to Carcinogenicity in Humans
4 = Probably not Carcinogenic to Humans

Other
NL = Not Listed

SECTION 12—ECOLOGICAL INFORMATION

ECOTOXICITY
Not applicable

PERSISTENCE AND DEGRADABILITY
Not applicable

BIOACCUMULATION POTENTIAL
Not applicable

MOBILITY IN SOIL
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 Registration)
Not Regulated

CANADIAN TRANSPORTATION OF DANGEROUS GOODS (TDG)
Not regulated

UN SHIPPING NAME
Not regulated

UN NUMBER
Not regulated
SECTION 15—REGULATORY INFORMATION

US-OSHA (Hazard Communication Standard)
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, copper, iron, magnesium, manganese, nickel, tin, silicon and silica. For hexavalent chromium references see 29 CFR 1910.1026.

US-EPA (Toxic Substances Control Act—TSCA)
All components of these products are on the TSCA inventory list or are excluded from listing.

US-EPA (SARA Title III)
Releases to the environment of Chromium, Copper, Manganese 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 72.

CANADA-WHMIS (Workplace Hazardous Materials Information System)
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.

CANADA DSL (Domestic Substances List) Inventory Status
All components of these products are on the DSL Inventory.

CEPA (Canadian Environmental Protection Act)
Chromium and Nickel are on the CEPA Priorities Substances Lists

EINECS No. (European Inventory of Existing Commercial Chemical Substances)
All components of these products are on the EINECS list.

RoHS (Restriction of Certain Hazardous Substances) Compliance
Castings comply with RoHS

CALIFORNIA PROPOSITION 65 Compliance
WARNING: This product contains or produces chemicals known to the State of California to cause cancer and birth 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
American Foundry Society, Inc.
Occupational Safety & Health Committee (10-Q)

DATE
10/13

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.
**PRODUCT IDENTIFIER**

SC-000-042 Rev. 12

**DUCTILE IRON/COMPACTED GRAPHITE IRON (CGI) CASTINGS**

**SUPPLIER IDENTIFICATION**

Company Name | DONSCO, INC.  
Street Address | 124 N. FRONT ST.  
Mailing Address | P. O. BOX 2001  
City | WRIGHTSVILLE  
State | PA  
Zip/Postal Code | 17368  
Country | USA  
Emergency Phone Number | 717-252-1561 X 200  
Other Info | 

**HAZARD PICTOGRAMS**

None*

**SIGNAL WORD**

None*

**PRECAUTIONARY STATEMENTS**

None*

**HAZARD STATEMENTS**

None*

*Castings do not present hazards in their original form.

**OTHER INFORMATION**

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