

**SAFETY DATA SHEET (SDS)****GRAY IRON CASTINGS****DATE ISSUED**

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.

SECTION 1—PRODUCT IDENTIFICATION & COMPANY INFORMATION**PRODUCT NAME****GRAY IRON CASTINGS**

OTHER DESIGNATIONS: ASTM (American Society for Testing & Materials) Specification No's., (ACI (Alloy Casting Institute) Alloy Designations—Grades)

ASTM: A48, A74, A126, A159, A278, A319, A667, A748, A823, A942

PRODUCT IDENTIFICATION (Label Identifier)

Gray Iron Castings

MANUFACTURER'S NAME

Unicast Company

STREET ADDRESS

241 North Washington Street

EMERGENCY TELEPHONE NO.

610-367-0155

MAILING ADDRESS**TELEPHONE NO.**

610-367-0155

CITY, STATE, ZIP CODE, COUNTRY

Boyertown, PA 19512 USA

FAX NO.

610-367-2787

E-MAIL ADDRESS/WEBSITE

Unicastco.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 NAME/SYNONYM	Wt %	CAS NUMBER
Carbon (C)	2.5–4.0	7440-44-0
Chromium (Cr)	0.01–1.5	7440-47-3
Copper (Cu)	0.01–1.00	7440-50-8
Iron (Fe)	86.3–96.2	7439-89-6
Manganese (Mn)	0.2–1.1	7439-96-5
Nickel (Ni)	0.01–1.5	7440-02-0
Silicon (Si)	1.0–3.5	7440-21-3
Tin (Sn)	0.1–0.15	7440-31-5

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.

SUBSTANCE	ACGIH TLV mg/m ³	OSHA PEL mg/m ³
Carbon (C)	N/E	N/E
Chromium (Cr)	0.5	1
Copper (Cu)	1	1
Iron (Fe)	N/E	N/E
Manganese (Mn)	0.02 (R); 0.1 (I)	5 (C)
Nickel (Ni)	1.5 (I)	1
Silicon (Si)		
Total dust	N/E	15
Respirable dust	N/E	5
Tin (Sn)	2	2

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 ³	OSHA PEL mg/m ³
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
Copper Compounds (as Cu)		
Fume, as Cu	0.2	0.1
Dusts and mists, as Cu	1	1
Iron Compounds		
Iron oxide (Fe ₂ O ₃) fume	N/E	10
Iron oxide (Fe ₂ O ₃)	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
Tin compounds (as Sn)		
Tin Oxide & inorganic compounds, except SnH ₄	2	N/E
Inorganic compounds, except oxides, as Sn	N/E	2
Tin Oxides, as Sn	2	N/E
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/m ³ = 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	VAPOR DENSITY	
None	Not applicable	
MELTING POINT/FREEZING POINT	SPECIFIC GRAVITY (relative density)	
Approximately 2350°F (1300°C)	7.85 g/cm ³ for iron	
BOILING POINT	VAPOR PRESSURE	
5000°F (2750°C) for iron	Not applicable	
FLASH POINT	EVAPORATION RATE	
Not applicable for solid castings	Not applicable	
FLAMMABILITY	SOLUBILITY IN WATER	
Not flammable	Insoluble	
UPPER AND LOWER FLAMMABILITY LIMITS	pH	
Not applicable for solid castings	Not applicable	
AUTO IGNITION TEMPERATURE	VISCOSITY	
Not applicable	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
Nickel (metal)	NL	K	2B
TARGET ORGAN Lung, Nose			
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	

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	
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, manganese, nickel, silicon, tin 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 372.	
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 Substance 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
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.	

Domestic Capabilities
Gray Iron, Ductile
Painting, Machining
Annealing, Plating
Custom Castings



Global Sourcing (Asia)
Gray Iron, Ductile
Steel
Machining

241 North Washington Street □ Boyertown, PA 19512 □ Phone: 610-367-0155 □ Fax: 610-367-2787
1653 Hausman Road □ Allentown, PA 18104 □ Phone: 610-366-8836 □ Fax: 610-366-8835

June 1, 2015

Dear Customer,

The chemical listed below are present in the gray iron castings and are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 in 40 CFR, Part 372. This notice must be attached to the current (SDS) Safety Data Sheet for gray iron castings that has been supplied to you by this company and may not be removed for any reason.

<u>Chemical</u>	<u>CAS Number</u>	<u>Percentage</u>
Aluminum	7429-90-5	0.01 - 0.02
Chromium	7440-47-3	0.01 - 1.5
Copper	7440-50-8	0.01 - 1.00
Manganese	7439-96-5	0.20 - 1.10
Nickel	7440-02-0	0.01 - 1.5
Phosphorus	7723-14-0	0.05 - 0.07
Silicon	7440-21-3	1.0 - 3.5
Tin	7440-31-5	.10 - .15

DANIEL J. MCKEOWN
Safety, Health and Environmental