

PREPARED BY DISTRIBUTOR:



Castle Metals®

A.M. Castle & Co.
1420 Kensington Road
Suite 220
Oak Brook IL 60523

MATERIAL SAFETY DATA SHEET

ISSUE DATE

November 25, 1985

REVISED

November 2, 2012

(This product contains one or more toxic chemicals subject to the reporting requirements of section 313 of the EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT of 1986 and of 40 CFR 72)

For Information or in an Emergency Call:

847.349.3000

Section 1 – Product Identification					
Manufacturer's Name Various					
Product Name / Trade Name Alloy Steel – HR & CR Alloy Leaded Steel			Common Name / Grade Alloy Steel i.e. 4130, 4140, 4340, 8620 Alloy Leaded i.e. 86L20		
Section 2 – Hazardous Ingredients					
Note: Products Under Normal Conditions Do Not Represent An Inhalation, Ingestion or Contact Health Hazard					
Base Metal, Alloying Elements and Metallic Coatings	CAS #	WT % ⁽¹⁾	OSHA PEL (mg/m ³) ⁽²⁾	ACGIH TLV TWA (mg/m ³) ⁽³⁾	
Base Metal					
Iron (Fe)	7439-89-6	86-99	10	5 (as Iron Oxide)	
Alloying Elements					
Nickel (Ni)	7440-02-0	<5	1	0.5	
Chromium (Cr)	7440-47-3	<5	0.5	0.5	
Silicon (Si)	7740-21-3	<5	15	10 (Total Dust)	
Manganese (Mn)	7439-96-5	<2	5	0.2	
Carbon (C)	7440-44-0	<2	N.E.	3.5 (as Carbon Black)	
Molybdenum (Mo)	7439-98-7	<2	15	10 (Insoluble Compd.)	
Vanadium (V)	7440-62-2	<2	0.5	0.05 (Respirable Dust)	
Aluminum (Al)	7429-90-5	<2	15	10 (Total Dust)	
Sulfur (S)	7704-34-9	<2	13	5 (as SO ₂)	
Phosphorus (P)	7723-14-0	<1	0.1	0.1 (Yellow)	
Bismuth (Bi)	7440-69-9	<1	N.E.	N.E.	
Copper (Cu)	7440-50-8	<1	1	1 (Dust & Mist)	
Leaded Alloy					
Lead (Pb)	7439-92-1	<1	0.05	0.05	
(1) WT% of Alloying Material Varies With Grade of Material; (2) 1993 OSHA Permissible Exposure Limit; (3) ACGIH Threshold Limit Value					
Section 3 – Physical Data					
Material is (At Normal Conditions) Solid			Appearance and Odor Grey-Black, Odorless		
Melting Point (Base Metal) >2500° F			Specific Gravity Approximately 7		
Section 4 – Fire and Explosion					
Extinguishing Media N/A					
Special Firefighting Procedures Steel products in the solid state present no fire or explosion hazard					
Unusual Fire and Explosion Hazards N/A					
Section 5 – Reactivity Data					
Stability Stable			Incompatibility (Materials to Avoid) Reacts with strong acids to produce hydrogen gas		
Conditions to Avoid N/A					
Hazardous Decomposition Products Metallic dust or fumes may be produced during welding, burning, grinding and possibly machining Refer to ANSI Z49.1					



Product **Alloy Steel**

Section 6 -- Health Hazard Data			
Note: Steel products in the natural state do not present an inhalation, ingestion or contact hazard. However, operations such as burning, welding, sawing, brazing and grinding may release fumes and/or dusts which may present health hazards if PELs or TLVs are exceeded.			
Major Exposure Hazard			
<input checked="" type="checkbox"/> Inhalation	<input type="checkbox"/> Skin Contact	<input type="checkbox"/> Skin Absorption	<input type="checkbox"/> Eye Contact
	<input checked="" type="checkbox"/> Ingestion		
Effects of Overexposure			
<p>Short term exposure to fumes/dust may produce irritation of eyes and respiratory system. Inhalation of high concentrations of freshly formed oxide fumes of iron, manganese, copper and lead may cause metal fume fever, characterized by a metallic taste in the mouth, dryness and irritation of the throat and influenza-like symptoms.</p> <p>Chronic inhalation of high concentrations of iron oxide fumes or dust may lead to a benign pneumoconiosis (siderosis). Inhalation of high concentrations of ferric oxide may possibly enhance the risk of lung cancer development in workers exposed to pulmonary carcinogens.</p> <p>Inhalation or ingestion of lead particles may result in lead induced systemic toxicity. Symptoms of lead poisoning include abdominal cramps, anemia, muscle weakness and headache. Prolonged exposure can cause behavioral changes, kidney damage, CNS damage and reproductive effects.</p> <p>Chromium and nickel and their compounds are listed in the 3rd Annual Report on Carcinogens, as prepared by the national Toxicology Program (NTP). Exposure to high concentrations of dust and fumes can cause sensitization dermatitis, inflammation and/or ulceration of upper respiratory tract and possibly cancer of nasal passages and lungs.</p> <p>Recent epidemiological studies of workers melting and working alloys containing nickel/chromium have found no increased risk of cancer.</p>			
Suspected Cancer Agent			
<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO		
Federal OSHA	NTP	IARC	
Emergency and First Aid Procedures			
If exposed to excessive levels of metal fumes, remove to fresh air, seek medical attention immediately.			
Eyes – Flush with water for at least 15 minutes.			
Section 7 – Spill or Leak Procedures			
Procedures			
- N/A			
Waste Disposal Methods			
According to local, state and federal regulations.			
Section 8 – Special Protection			
Respiratory			
NIOSH/MSHA – Approved dust and fume, respirator should be used to avoid excessive inhalation of particulates when exposure exceeds TLV or PEL.			
Ventilation			
Local exhaust ventilation should be utilized when welding, burning, sawing, brazing, grinding or machining when exposure exceeds TLV or PEL.			
Eye Protection and Protective Clothing			
Safety glasses or goggles should be utilized as required by exposure. Other protective equipment should be utilized as required by the welding standards.			
Section 9 – Special Precautions			
In welding, precautions should be taken for airborne contaminants which may originate from components of the welding rod or stick. Arc or spark generated when welding or burning could be a source of ignition for combustible and flammable materials.			
The information in this MSDS was obtained from sources which we believe are reliable. However, the information is provided without any representation or warranty, express or implied, regarding the accuracy or correctness.			
The conditions or methods of handling, storage, use and disposal of the product 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 connected with the handling, storage, use or disposal of the product.			
Data sheets of individual manufacturers may be obtained by contacting A.M. Castle & Co., 1420 Kensington Road, Suite 220, Oak Brook, Illinois 60523 Attn: Corporate Safety Manager, safety@amcastle.com .			