Phoenix Forging Company
G H S Safety Data Sheet

I. PRODUCT AND COMPANY IDENTIFICATION

Company
Phoenix Forging Company
800 Front Street
Catasauqua, PA 18032

Issue Date
May 2015

Product Name
Forgings and Pipe Fittings

Emergency Phone Number
610 264 2861

Product Class
Fabricated Metal

II. HAZARDS IDENTIFICATION

Health- Respiratory Irritant (Dust/Fume)

Physical – None

Environmental- None known

Pipe Fittings pose no health concern in their normal state.

The health effects and symptoms listed below would result primarily through exposure to or inhalation of dust or fumes. Ingestion is highly improbable. Absorption through the skin is almost impossible. Any cuts should be cleaned and a physician contacted to determine the need for any further treatment.

Carbon (C)- Chronic inhalations of high concentrations of carbon may cause pulmonary disorders

Chromium (Cr)- The toxicity and health hazards of chromium are dependent upon its oxidation state. The forms found in metal are of very low toxicity. The hexavalent form that occurs in chromates and chromic acid is very toxic and can produce both acute and chronic effects. Respiratory symptoms may include coughing, wheezing, shortness of breath and nasal itch. Eye irritation or inflammation can also be produced. Exposure to some hexavalent chromium compounds have been shown to be associated with an increased risk of lung cancer.

Iron (Fe)- Long-term excessive inhalation exposure to iron oxide fume or dust has been associated with a benign lung condition known as siderosis. No physical impairment of lung function has been linked to siderosis.

Manganese (Mn)- Elemental Mn exhibits very low toxicity. The dust or fumes can act as minor irritants to the eyes and respiratory tract. Both acute and chronic exposures may adversely affect the central nervous system but symptoms are more likely to occur after at least one or two years of prolonged or repeated exposures. Symptoms may include sleepiness, weakness, emotional disturbances, spastic gait, mask-line facial expression and paralysis. Animal studies indicate that manganese exposure may increase susceptibility to bacterial and viral infections.

Molybdenum (Mo)- Certain handling operations, such as burning or welding, may generate both insoluble molybdenum compounds (metal and molybdenum dioxide) and soluble molybdenum compounds (molybdenum trioxide). Molybdenum compounds generally exhibit a low order of toxicity with the trioxide the more toxic. Some reports indicate that the dust of the molybdenum metal, molybdenum dioxide and molybdenum trioxide may cause eye, skin, nose and throat irritation in animals.

Nickel (Ni)- Ni fumes and dust are respiratory irritants and may cause a severe pneumonitis. Skin contact with nickel and its compounds may cause an allergic dermatitis. Studies have linked nickel and certain nickel compounds to an increased incidence of cancer of the lungs and nasal passages.

Silicon (Si)-This is considered to be a nuisance particulate by the ACGIH.

Zinc (Zn)- Subjecting zinc or alloys containing zinc to high temperatures (such as would occur during welding) will cause the formation of zinc oxides. Exposure to zinc oxide fumes or dust can result in a flu-like illness called metal fume fever. Early symptoms may include a sweet or metallic taste in the mouth, dryness or irritation of the throat and coughing. These symptoms may progress to shortness of breath, headache, fever, chills, muscle aches, nausea, vomiting, weakness, fatigue and profuse sweating. The symptoms may last up to 48 hours and are more likely to occur after a period away from the job.

III. COMPOSITION AND INFORMATION ON INGREDIENTS

Material or Component	CAS Number	% Weight	Exposure Limits	
Base Metal			OSHA PEL (mg/m3)	ACGIH TLV (mg/m3)
Iron (Fe)	7439-89-6	Balance	10 (Fe2O3 Fume)	5.0 (Fe2O3 Fume)
Alloying Elements				
Carbon (C)	7440-44-0	0 – 1.03	None Listed	None Listed
Chromium (Cr)	7440-47-3	0- 1.2	1.0 as chrome	0.5 as chrome
Manganese (Mn)	7439-96-5	0- 2.5	5 as manganese	5 as dust; 1 as fume
Molybdenum (Mo)	7439-98-7	0-1.0	15 as insoluble compounds	10 as insoluble compounds
Nickel (Ni)	7440-02-0	0-2.1	1.0 as Nickel	1.0 as Nickel
Phosphorous (P)	7723-14-0	0-.04	0.1 as Phosphorous	0.1 as Phosphorous
Silicon (SI)	7440-21-3	0- 1.6	None Listed	10 total dust
Sulfur (S)	7704-34-9	0- .5	13 sulfur dioxide	5 sulfur dioxide
Zinc (Zn) coating	1314-13-2	10.002 Max	5.0 as fume	5.0 as fume

Note: Various grades of steel will contain different combinations of these elements. Trace elements may also be present in minute amounts. Forgings and fittings may have a zinc phosphate conversion coating or rust preventative oil, the elements of which are included in the ingredients.

IV. EMERGENCY FIRST AID PROCEDURES

Inhalation: Remove to fresh air; if condition continues, consult physician.
Eye Contact: Immediately flush well with running water to remove particulate; get medical attention.
Skin Contact: If irritation develops, remove clothing and wash well with soap and water. If condition persists, seek medical attention.
Ingestion: If significant amounts of metal are ingested, seek medical attention.

V.FIRE-FIGHTING MEASURES

Flash Point- N/A
Auto Ignition Temperature-N/A
Flammable Limits in Air-N/A
Extinguishing Media- N/A
Fire and Explosion Hazards- None
Extinguishing Media Not to be Used- N/A

VI. ACCIDENTAL RELEASE MEASURES

No special precautions are necessary for spills of material. If large quantities of dust are spilled, remove by vacuuming to prevent large concentrations of airborne dust. Cleanup personnel should wear respirators when dust is involved.
Dispose of material in accordance with local, state, and federal regulations.

VII. HANDLING AND STORAGE

No special precautions are needed.

VIII. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Steel products in the natural state do not present air inhalation, ingestion, or contact health hazards. However, operations such as welding, burning, sawing, brazing, grinding, and other processes which elevate the temperature of the product to or above its melting point or result in the generation of airborne particulates may present hazards. These operations should be performed in well-ventilated areas. The major exposure hazard is inhalation.

Respiratory Protection
NIOSH approved dust/mist/fume respirator should be used during welding or burning if OSHA PEL or TLV is exceeded.
Eyes and Face
Safety glasses should always be worn when grinding or cutting; face shields should be worn when welding or burning.
Hands, Arms, Body
Use appropriate protective clothing such as welder's aprons & gloves when welding or burning. Check local codes.
Other Clothing and Equipment
As required.

IX. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor- Gray/black solid articles, metallic lustre, odorless
Acidity/Alkalinity- NA
Melting Point-Approx 2750 deg F
Specific Gravity (H20 = 1) – 7
Vapor Pressure-NA
Boiling Point-NA
Solubility in water (% by weight) – NA

X. STABILITY AND REACTIVITY

Stability- stable
Incompatibility (Materials to Avoid) - Reacts with strong acids to form hydrogen gas.
Conditions to Avoid- Non-ventilated areas when cutting, welding, burning, or brazing; avoid generation of airborne dusts and fumes
Hazardous Decomposition Products- Metallic oxides

XI. TOXICOLOGY INFORMATION

Acute: Excessive inhalation of metallic fumes and dusts may result in irritation of eyes, nose, and throat. Refer to Section II.
Chronic: Chronic and prolonged inhalation of high concentrations of fumes or dust of the following elements may lead to the conditions listed opposite the element (refer to Section II.
Occupational Exposure Limits- Refer to Section III.

XII. ECOLOGICAL INFORMATION

Ecotoxicity- None Known

XIII. WASTE DISPOSAL CONSIDERATION

Follow all local, state, and federal regulations.

XIV. TRANSPORTATION INFORMATION

No recommendation.

XV. REGULATORY INFORMATION

Not applicable.

XVI. OTHER INFORMATION

Forgings or Pipe fittings may have surface coatings, as noted in Section III.

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