

Bolts

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1/8/2009

PREPARED BY DISTRIBUTOR: KREHER STEEL CO., INC. ISSUED 11/25/85
1550 N. 25th Avenue REVISED 12/11/95
Melrose Park, IL 60126

INFORMATION AND EMERGENCY NUMBER: 708/345-8180

Physical Data: (Steel)

Melting Point:	2650-2750°F
Vapor Pressure:	N/A
Vapor Density:	N/A
Soluble in H ₂ O:	N/A
Specific Gravity (H ₂ O = 1):	Approximately 8
Percent Volatile by Volume:	N/A
Appearance and Odor:	Odorless solid with metallic luster

Health Hazard Data:

Chronic inhalation of high concentration of iron oxide fumes and dusts 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.

The inhalation of high concentration of freshly formed oxide fumes and dusts of manganese, copper, lead and/or zinc in the respirable particle size range can cause an influenza-like illness termed metal fume fever. Typical symptoms last 12 to 48 hours and are characterized by metallic taste in the mouth, dryness and irritation of the throat, followed by weakness, muscle pain, fever and chills.

Emergency and First Aid Procedures:

For overexposure to airborne fumes and particulates, remove exposed person to fresh air. If breathing is difficult or has stopped, administer artificial respiration or oxygen as indicated. Seek medical attention promptly.

Treat metal fume fever by bed rest, and administer a pain and fever reducing medication.

Protective Information:

Respiratory - NIOSHA/MSHA - approved dust and fume respirators should be used to avoid excessive inhalation of particulates. Appropriate respirator selection depends on the magnitude of exposure.

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Skin - Protective gloves should be worn as required for welding, burning or handling operations.

Eye - Use safety glasses or goggles as required for welding, burning, sawing, brazing, grinding or machining operations.

Ventilation - Local exhaust ventilation should be provided when welding, burning, sawing brazing, grinding or machining to prevent excessive dust or fume exposure.

Other Protective Equipment - Depending upon the conditions of use and specific work situations, additional protective equipment and/or clothing may be required to control exposures.

STEEL PRODUCTS IN THE SOLID STATE PRESENT NO FIRE OR EXPLOSION HAZARD. Will react with strong acid to liberate hydrogen. At temperatures above the melting point of lead (620°F), may liberate lead fumes.

Coatings: (Used infrequently on our products)

A thin coating of petroleum based oil or acrylic polymer (1% total weight of product) may be added to the surface as a corrosion inhibitor or preventative. Dermatitis due to sensitization may occur in some individuals. Gloves should be worn.

WARNING

STEEL PRODUCTS CONTAIN VARIOUS CONSTITUENTS IN THE BASE METAL AND COATINGS OF VARYING TOXICITY AND CONCENTRATION. DURING METAL-WORKING ACTIVITIES SUCH AS WELDING, BURNING, GRINDING, HEATING, AND FORGING, METAL FUMES AND GASES MAY BE GENERATED, WHICH MAY BE DANGEROUS TO YOUR HEALTH. AVOID BREATHING THESE FUMES AND GASES. MECHANICAL VENTILATION OR RESPIRATORS MUST BE UTILIZED IF NATURAL VENTILATION IS NOT SUFFICIENT TO MAINTAIN CONTAMINANTS BELOW THE OSHA PERMISSIBLE EXPOSURE LEVEL (PEL).

IF WORKERS DEVELOP SYMPTOMS OF EXPOSURES TO FUMES AND GASES, MOVE PERSONS FROM CONTAMINATED AREA TO FRESH AIR AT ONCE. GIVE ARTIFICIAL RESPIRATION IF BREATHING HAS STOPPED, OR OXYGEN, IF NECESSARY. GET MEDICAL ATTENTION, IF NECESSARY.

FOR FURTHER INFORMATION, REFER TO THE APPROPRIATE MATERIAL SAFETY DATA SHEET FOR THIS PRODUCT.

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MATERIAL SAFETY DATA SHEETS FOR STEEL PRODUCTS

NOTE: Steel products under normal conditions do not present an inhalation, ingestion or contact health hazard (See Section VI.).

BASE METAL, ALLOYING ELEMENTS AND METALLIC COATINGS	% WEIGHT	EXPOSURE LIMITS	
		OSHA PEL	ACGIH TLV
Base Metal: Iron	84/99	10 mg/M ³ for iron oxide fume	5 mg/M ³ for iron oxide fume
Alloying Elements:			
Carbon	.01/1.25	None established	None established
Manganese	.25/14.00	(c) 5 mg/M ³	(c) 5 mg/M ³ -dust 1 mg/M ³ -fume
Phosphorus	.07 max.	None for inorganic phosphates	None for inorganic phosphate.
Sulfur	.001/.10	13 mg/M ³ as SO ₂	5 mg/M ³ as SO ₂
Silicon	.15/2.20	None established	10 mg/M ³ -Total dust 5 mg/M ³ -Respirable dust
Nickel	.01/9.50	1 mg/M ³	1 mg/M ³
Chromium	.01/6.00	1 mg/M ³ -Cr metal	0.5 mg/M ³ -Cr metal 0.05 mg/M ³ -Cr(VI) compounds
Molybdenum	.01/1.10	15 mg/M ³ -Insoluble compounds	10 mg/M ³ -Insoluble compounds
Vanadium	.01/.25	(c) 0.5 mg/M ³ as V ₂ O ₅ dust (c) 0.1 mg/M ³ as V ₂ O ₅ fume	0.05 mg/M ³ as respirable dust and fume
Copper	.01/2.00	0.1 mg/M ³ -fume; 1 mg/M ³ -dust	0.2 mg/M ³ -fume; 1 mg/M ³ -dust
Aluminum	.10 max.	None established	10 mg/M ³
Titanium	.01/.10	15 mg/M ³ as TiO ₂	10 mg/M ³ -Total dust 5 mg/M ³ -Respirable dust
Columbium	.01/.25	None established	None established
Boron	.0005/.005	15 mg/M ³	10 mg/M ³
Lead	.15/.35	0.05 mg/M ³	0.05 mg/M ³
Bismuth	.01/.15	None for Bismuth metal and oxide	None for Bismuth metal and oxide

(c) Denotes "ceiling limit" which is not to be exceeded at any time.

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PREPARED BY DISTRIBUTOR: KREMER STEEL CO., INC. ISSUED 11/25/85
 1550 N. 25th AVENUE REVISED 11/21/95
 MELROSE PARK, IL 60126

INFORMATION AND EMERGENCY NUMBER: (708) 345-8180

MATERIAL SAFETY DATA SHEETS FOR STEEL PRODUCTS

NOTE: Steel products under normal conditions do not present an inhalation, ingestion or contact health hazard (See Section VI)

BASE METAL, ALLOYING ELEMENTS, AND METALLIC COATINGS

	<u>% WEIGHT</u>	<u>EXPOSURE LIMITS OSHA PEL</u>	<u>ACGIH TLV</u>
Base Metal: Iron	84/99	10 mg/M ³ for iron oxide fume	5 mg/M ³ for iron oxide fume
Alloying Elements:			
Carbon	.01/1.25	N/E*	N/E
Manganese	.25/14.00	(c) 5 mg/M ³	(c) 5 mg/M ³ - dust 1 mg/M ³ - fume
Phosphorus	.07 max.	None for inorganic phosphates	None for inorganic phosphates
Sulfur	.001/.10	13 mg/M ³ - SO ₂	5 mg/M ³ - SO ₂
Silicon	.15/2.20	N/E	10 mg/M ³ - total dust 5 mg/M ³ - respirable dust
Nickel	.01/9.50	1 mg/M ³	1 mg/M ³
Chromium	.01/6.00	1 mg/M ³ - Cr metal	0.5 mg/M ³ - Cr metal 0.05 mg/M ³ - Cr(VI) compounds
Molybdenum	.01/1.10	15 mg/M ³ - insoluble compounds	10 mg/M ³ - insoluble compounds
Vanadium	.01/.25	(c) 0.5 mg/M ³ as V ₂ O ₅ dust (c) 0.1 mg/M ³ as V ₂ O ₅ fume	0.05 mg/M ³ as respirable dust and fume
Copper	.01/2.00	0.1 mg/M ³ - fume; 1 mg/M ³ - dust	0.2 mg/M ³ - fume; 1 mg/M ³ - dust
Aluminum	.10 max	N/E	10 mg/M ³
Titanium	.01/.10	15 mg/M ³ - TiO ₂	10 mg/M ³ - total dust 5 mg/M ³ - respirable dust
Columbium	.01/.25	N/E	N/E
Boron	.0005/.009	15 mg/M ³	10 mg/M ³
Lead	.15/.35	0.05 mg/M ³	0.05 mg/M ³
Bismuth	.01/.15	None for Bismuth metal and oxide	None for Bismuth metal and oxide

NOTES:

N/E None established

(c) Denotes "ceiling limit" which is not to be exceeded at any time.

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