

MATERIAL SAFETY DATA SHEET
ISSUE DATE JANUARY 2009
(revised 10/08/2010)

PRODUCT NAME: **RED EPOXZKOTE POWDER PRIMED TUBING**
OTHER DESIGNATIONS: Powder Primer Coated Steel
MANUFACTURER: ATLAS
1855 East 122nd Street
Chicago, IL 60633

II. INGREDIENTS AND HAZARDS

HAZARD DATA

| INGREDIENT NAME | CAS NUMBER | % WEIGHT | LD50 or LC50 SPECIES/ROUTE | 1992 TLV's (ACGIH) | 1990 PEL's (USOSHA) |
|---------------------------|------------|-----------|-------------------------------------|--|--|
| BASE METAL: | | | | | |
| Iron | 1309-37-1 | Balance | 5.4gm / kg mouse / oral | 5 mg / m ³ iron oxide fume | 10 mg / m ³ (STEL) dust and fume |
| ALLOYING ELEMENTS: | | | | | |
| Manganese | 7439-96-5 | 1.90 max. | 9 gm / kg rat / oral | 1 mg / m ³ Mn. fume 1 mg / m ³ Mn. dust 3 mg / m ³ (STEL) fume | 5 mg / m ³ fume (C) 3 mg / m ³ (STEL) fume |
| Carbon | 7440-44-0 | 0.60 max. | 440 mg / kg mouse / intravenous | 10 mg / m ³ total dust* | 15 mg / m ³ total dust* 5 mg / m ³ respirable fraction* |
| Phosphorus | 7723-14-0 | 0.15 max. | no info. | 0.1 mg / m ³ | 0.1 mg / m ³ |
| Aluminum | 7429-90-5 | 0.10 max. | no info. | 5 mg / m ³ welding fume 10 mg / m ³ dust | 15 mg / m ³ total dust* 5 mg / m ³ respirable fraction* |
| Sulfur | 7704-34-9 | 0.05 max. | no info. | 10 mg / m ³ total dust* | 15 mg / m ³ total dust* 5 mg / m ³ respirable fraction* |
| Chromium ³ | 7440-47-3 | 1.20 max. | no info. | 0.5 mg / m ³ Cr. Metal compounds (II & III) 0.5 mg / m ³ Cr. VI Sol. & insol. | 1 mg / m ³ Cr. metal 0.5 mg / m ³ Cr. compounds (II & III) |
| Vanadium ³ | 7440-62-2 | 0.20 max. | 59 mg / kg rabbit / subcutaneous | 0.05 mg / m ³ as respirable V ₂ O ₅ dust and fume | 0.5 mg / m ³ (C) respirable V ₂ O ₅ dust 0.1 mg / m ³ (C) respirable V ₂ O ₅ fume |
| Nickel ² | 7440-02-0 | 2.00 max. | no info. | 1mg / m ³ metal & insol. Ni. | 1 mg / m ³ metal, sol. & insol. Ni. |

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|------------------------------|------------|---------------------------|--------------------------------------|--|---|
| Copper ² | 7440-50-8 | 1.00 max. | 3-5 mg / kg rodent / intraperitoneal | 0.2 mg / m ³ fume 1.0mg / m ³ Cu. dust and mist | 0.1 mg / m ³ Cu. fume 1.0 mg / m ³ Cu. dust and mist |
| Silicon ² | 7440-21-3 | 1.00 max. | no info. | 10 mg / m ³ total dust* | 10 mg / m ³ total dust 5 mg/ m ³ respirable fraction* |
| Molybdenum ² | 7439-98-7 | 0.10 max. | no info. | 5 mg / m ³ Mo. Sol. 10 mg / m ³ Mo. insol. | 5 mg / m ³ Mo. sol. 15 mg / m ³ insol. total dust |
| Titanium ¹ | 7740-32-6 | 0.30 max. | no info. | 10 mg / m ³ total dust* | 15 mg / m ³ total dust* 5 mg / m ³ respirable fraction |
| Columbium ¹ | 7440-03-1 | 0.10 max. | no info. | 10 mg / m ³ total dust* | 15 mg / m ³ total dust* 5 mg/ m ³ respirable fraction* |
| Rare Earth (Ce) ¹ | 7440-45-1 | 0.10 max. | no info | 10 mg / m ³ | 10 mg / m ³ total dust 5 mg / m ³ respirable fraction |
| Tin | 7440-31-5 | 0.05 max. | no info | 0.1 mg / m ³ Sn. organic 2 mg / m ³ Sn. Metal & inorganic | 0.1 mg / m ³ Sn. organic 2 mg / m ³ Sn. inorganic |
| Cerium | 7440-45-1 | 20 ppm max. | no info | 10 mg / m ³ total dust* | 15 mg / m ³ total dust* 5 mg/ m ³ respirable fraction* |
| Lanthanum | 7439-91-0 | 10 ppm max. | 3.5 mg / kg rat / iv | 15 mg / m ³ total dust* 5 mg/ m ³ respirable fraction* | 15 mg / m ³ total dust* |
| POWDER INGREDIENTS: | | | | | |
| EPOXY RESIN | 25036-25-3 | < 2g / ft ² | no info | 10 mg / m ³ total dust* | 10 mg / m ³ total dust* 5 mg/ m ³ respirable fraction* |
| RED IRON OXIDE | 1309-37-1 | < 1 g / ft ² | no info | 10 mg / m ³ total dust* | 10 mg / m ³ total dust* 5 mg/ m ³ respirable fraction* |
| CARBON BLACK | 1333-86-4 | < 0.5 g / ft ² | no info | 10 mg / m ³ total dust* | 10 mg / m ³ total dust* 5 mg/ m ³ respirable fraction* |
| TITANIUM DIOXIDE | 13463-67-7 | < 0.5 g / ft ² | no info | 10 mg / m ³ total dust* | 10 mg / m ³ total dust* 5 mg/ m ³ respirable fraction* |

This list combines all ingredients contained in Rolled Alloy, Rolled HSLA and Rolled Carbon Steel Sheet. The common ingredients are at the top of the list. The numbers in parentheses indicate the additional alloying metals in each type of steel.

¹ = Only present in Rolled HSLA Sheet Steel

² = Only present in Rolled Alloy Sheet Steel

³ = Present in both Rolled HSLA and Rolled Alloy Sheet Steel

ACGIH = American Conference of Governmental Industrial Hygienists

PEL = Permissible Exposure Limits

USOSHA = United States Occupational Safety & Health Administration

TLV = Threshold Limit Value

Note: This product has a light surface coating of EPOXZKOTE[®] primer. This coating is less than one percent by weight (<1.0%) of the product. During welding tests performed for Atlas by a certified industrial hygiene company, air monitoring was performed on coated and uncoated steel simulating standard use of this material. These tests did not reveal any hazardous levels of contaminants derived from the coating that would not be present when welding uncoated material.

The coating on this product does not contain lead or ingredients considered carcinogens by OSHA, IARC or NTP.

III. PHYSICAL DATA

Solid Metal with Powder Coating. Stable under normal conditions of use, storage and transport. Operations such as welding, burning, grinding and machining may result in the generation of airborne particulates.

IV. FIRE AND EXPLOSION HAZARD DATA

Steel products in the solid state pose no fire or explosion hazard. It is not flammable or combustible.

Flash Point – N/A Flammable Limits – N / A

Extinguishing Media – N / A

Special Fire Fighting Procedures – N / A

Unusual Fire and Explosion Hazards – N / A

V. REACTIVITY DATA

Stability: Stable

Conditions to avoid: N / A

Incompatibility: N / A

Hazardous Decomposition Products: Metallic dust and / or metallic oxide dust and fumes will be liberated from welding, burning, grinding and, possibly, machining operations.

HEALTH HAZARD DATA

No health hazard as delivered to the customer. However, welding, burning, grinding, and machining will generate metallic fumes and dusts.

Welding on EPOXZKOTE[®] powder coated tubing does not create any additional hazard which would not be present when welding uncoated material.

Route of Entry: Inhalation

Acute Exposure to Fumes and Dust:

Inhalation of metallic oxide fumes may result in irritation of the upper respiratory tract and an influenza – like illness called metal fume fever. Symptoms include chills, muscle aches, nausea, fever, dry throat, cough and weakness.

Chronic Exposure to Fumes and Dust:

Continuous overexposure to iron oxide fumes as dust may produce a benign pneumoconiosis (siderosis). Inhalation of high concentrations of iron oxide may possibly enhance the risk of lung cancer development in workers exposed to pulmonary carcinogens.

Certain chromium and nickel compounds are considered known or suspect carcinogens by the National Toxicology Program, the International Agency for Research on Cancer or OSHA. Chromium is contained in HSLA and Rolled Alloy base steel.

A search of the scientific literature indicates that exposure to Chromium, Copper, Manganese and Nickel may Cause reproductive effects. The literature review did not indicate that any of the chemicals in this product were teratogens, mutagens or reparatory sensitizers.

VII. EMERGENCY AND FIRST AID PROCEDURES

Respiratory:

In the event of inhalation of high concentrations of metal fumes and dust, remove the person to fresh air, administer first aid and seek medical attention promptly.

Skin:

If thermal burns occur, flush area with cold water. Seek medical attention. For mechanical abrasions, seek first aid and / or medical attention.

Eyes:

If particles deposit in the eyes, flush eyes with large amounts of water. Seek medical attention.

VIII. SPILL OR LEAK PROCEDURES

Steps to be Taken in Case Material is Released: N / A

Waste Disposal Method: Dispose of in accordance with state and / or local regulations.

IX. SPECIAL PROTECTION INFORMATION

Ventilation:

Local exhaust ventilation should be provided when, welding, burning, grinding and machining to prevent excessive steel dust or fume exposure.

Respiratory Protection:

NIOSH / MSHA approved respirators for dust, mist and fume should be used to avoid excessive inhalation of steel dusts and fumes. Appropriate respirator selection depends on the magnitude of exposure.

Protective Gloves:

As required for welding, burning, grinding or machining operations.

Eye Protection:

As required for welding, burning, grinding and machining operations.

Other Protective Clothing:

Steel-toed work shoes and welding aprons as required.

X. SPECIAL PRECAUTIONS

Precautions to be taken in Handling and Storage:

Operations with potential for generating high concentrations of airborne particulates should be evaluated as necessary. Air monitoring to determine levels of exposure is advisable.

Welding nearby areas where chlorinated solvents are used can result in the creation of toxic gases such as phosgene.

If coolants are used during cutting and braising and / or oil coatings are applied to the steel after receipt, additional precautions must be taken based on the hazards associated with those materials. Refer to each product MSDS for the appropriate protection information.

XI. REGULATORY INFORMATION

USA:

This product contains chemicals that are subject to reporting requirements of Section 313 of the Superfund Amendments and Reauthorization Act of 1986, 40 CFR Part 372. The release and disposal of fumes or dust generated when welding, burning, grinding and machining this product may be regulated by this law.

Canada:

Workplace Hazardous Materials Information System (WHMIS)

Rolled Carbon Steel D-2-B

Alloyed Steel D-2-A

HSLA D-2-B