

MATERIAL SAFETY DATA SHEET



OSTALLOY 160-190

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SECTION I - MATERIAL IDENTIFICATION					
<b>Producer :</b> Umicore Indium Products			<b>Emergency Telephone Number :</b> <b>Transport Emergencies : Chemtrec</b> <b>Telephone : 800-424-9300</b>		
<b>DISTRIBUTED BY FREEMAN MFG &amp; SUPPLY CO. 800-321-8511</b>					
<b>Chemical name and synonyms :</b> Ostalloy 160-190 <b>Trade names and synonyms :</b> N/A			<b>Hazard class (49CFR 172.101) : None</b>		
SECTION II - HAZARDOUS INGREDIENTS/ IDENTITY INFORMATION					
Hazardous Components	CAS #	Weight %	OSHA : PEL-TWA	ACGIH : TLV-TWA	Remarks
Cadmium	7440-43-9	9.0	0.005 mg/m <sup>3</sup>	0.005 mg/m <sup>3</sup>	
Tin	7440-31-5	12.0	2 mg/m <sup>3</sup>	2 mg/m <sup>3</sup>	
Lead	7439-92-1	37.0	0.05 mg/m <sup>3</sup>	0.05 mg/m <sup>3</sup>	
Bismuth	7440-69-9	42.0	N/A	N/A	
SECTION III - PHYSICAL / CHEMICAL CHARACTERISTICS					
<b>Boiling Point :</b> >500 C			<b>Specific gravity (water=1) :</b> 7.5		
<b>Vapor Pressure (mm Hg.) :</b> <100			<b>Melting Point :</b> 71.1 - 88 C		
<b>Vapor Density (Air = 1) :</b> N/A			<b>Evaporation Rate (butyl acetate = 1):</b> Unknown		
<b>Appearance and Odor :</b> Solid, Metallic metal			<b>Solubility in Water :</b> Minimal		
SECTION IV - FIRE AND EXPLOSION HAZARD DATA					
<b>Flash Point (Method used):</b> N/A		<b>Flammable Limits :</b>		<b>LEL : N/A.... UEL : N/A.</b>	
<b>Extinguishing Media :</b> a) Dry Powder b) Carbon Dioxide					
<b>Special Fire Fighting Procedures :</b> None					
<b>Unusual Fire and Explosion Hazards :</b> Unknown					

**SECTION V – REACTIVITY DATA**

**Stability :** Stable : **Conditions to avoid :** Mixing with Corrosive Liquids

**Incompatibility (Material to avoid) :** Corrosives

**Hazardous Decomposition or Byproducts :** None

**Hazardous Polymerization :** Will not occur : **Conditions to avoid :** None

**SECTION VI – HEALTH HAZARD DATA**

**Possible routes of entry :**      **Inhalation:** U      **Ingestion :** U      **Skin :**

**Acute Hazards :**

**Inhalation :** Inhalation of cadmium dust may cause dryness of the throat, cough, headache, shortness of breath.

**Ingestion :** None

**Skin contact :** Molten metal will cause thermal burns of the skin.

**Eyes Contact :** Molten metal will burn .

**Chronic Effects :**

**Carcinogenicity :** Cadmium is a recognized carcinogen by IARC and OSHA. Lead is a known carcinogen according to IARC.

**Inhalation :** Overexposure to cadmium fumes and/or dust causes shortness of breath, a sense of constriction of the chest. Cadmium is listed on the Rhode Island list of designated substances.

Long term overexposure to lead causes constipation, gastrointestinal disorders, anemia, weakness, and joint pain. Overexposure may have effects on the reproductive system.

Overexposure to tin fumes result in stannosis, a benign pneumoconiosis.

**Ingestion :** Chronic intoxication of bismuth compounds from repeat oral doses causes “bismuth line”. This is a gum condition with black spots of buccal or colonic mucosa, superficial stomatits, foul breath, and salivation.

**Skin contact :** Injection of bismuth will cause bismuth line.

**Eye contact :** None

**Irritation / Sensitization :** Has not been fully tested

**Medical Conditions which may be aggravated by exposure :** Respiratory and reproductive issues.

**Emergency and First Aid Procedures :**

**Inhalation :** Get to fresh air. If not breathing, use artificial respiration. Seek medical attention.

**Ingestion :** Contact nearest poison control center for information.

**Skin contact :** Wash skin thoroughly with soap and water. Seek medical attention.

**Eye contact :** Wash eyes for at least 15 minutes. Seek medical attention.

**SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE**

**Steps to be taken in case material is released or spilled :** Allow molten alloy to solidify and then scrap up.

**Waste disposal method :** Follow all Federal, State, and local regulations regarding disposal.

**Precautions to be taken in handling and storing :** Keep containers closed. Handle in ventilated area. Wear proper personal protective equipment.

**Other precautions :** None

**SECTION VIII - CONTROL MEASURES**

**Respiratory protection (specific type) :** Full face Cartridge with HEPA cartridges if exposures are above OSHA or ACGIH limits.

**Ventilation :** Local exhaust ventilation is recommended. Use in a well ventilated area.

**Protective gloves:** Latex gloves or nitrile gloves are recommended under thermal protection when handling molten materials. Nitrile or latex gloves should be worn whenever handling the material.

**Eye protection :** Safety Glasses with side shields and a face shield are recommended when handling molten materials

**Other protective clothing or equipment :** None

**Work / Hygienic Practices :** Keep the work area clean and neat. Do not eat, drink, or apply cosmetics in the work area. Do not use near food or drink. Avoid making dust. Wash hands before eating or drinking after handling the material.

**SECTION IX – ADDITIONAL INFORMATION****HAZARDOUS MATERIAL DESCRIPTION & PROPER SHIPPING NAME (49CFR172.101) :**

N/A

**REGULATORY INFORMATION :**

- a) CERCLA Hazardous Substance :  Yes  No
- b) SARA, title III, Extremely Hazardous Substance  
Reportable Quantity : not applicable  Yes  No  
Threshold planning quantity : not applicable
- c) Toxic Chemical Release Report  
Ostalloy 160-190 contains materials subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 and 40 CFR Part 372.
- d) NFPA Hazard Ratings : Health : 3      Fire : 0      Reactivity : 1
- (\* ) Indicates that no final reportable quantity is being assigned to the generic broad class.

**REFERENCES :****PERMISSIBLE CONCENTRATION REFERENCES :**

- OSHA (U.S. Occupational Safety & Health Standards 29 CFR Part 1910-42399)
- ACGIH : TLV-TWA : American Conference of Governmental Industrial Hygienists (Threshold Limit Value – Time Weighted Average), edition 2001

**HAZARD INFORMATION REFERENCES :**

- International Agency for Research on Cancer (IARC) - Monographs on the Evaluation of Carcinogenic Risk of Chemicals to Humans – supplement 4
- RTECS : Registry of Toxic Effects of Chemical Substances ; NIOSH, edition November 2001
- NIOSH : U.S. National Institute for Occupational Safety and Health

**GENERAL**

- CERCLA (Comprehensive Environmental Response Compensation and Liability Act – 1980 – 42 U.S.C. 9601 et seq : Hazardous Substance List – 40 CFR Table 302.4
- SARA (Superfund Amendments and Reauthorization Act of 1986) : Extremely Hazardous Substances List
- 40 CFR Part 355 (not applicable)

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Individuals exposed to Ostalloy 160-190 should be informed of all relevant hazards and recommended safety precautions and should have access to the information contained in this MSDS. Therefore, this Material Safety Data Sheet should be made available by the buyer to each of buyer's plant workers.

The buyer assumes all risk in connection with the use and handling of the material. The seller assumes no responsibility or liability in connection with the information supplied in this sheet or for any damage or injury or damage caused by the material ; reasonable safety procedures should be followed. The seller assumes no responsibility for injury or damage caused by use of the material even if reasonable safety procedures are followed. The information contained in this sheet is developed from what is believed to be accurate and reliable sources but the seller makes no warranties, either expressed or implied, and assumes no responsibility for the accuracy or completeness of the data contained herein.