

DURO DYNE CORPORATION
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FARMINGDALE, N.Y. 11735
EMERGENCY PHONE NO. 800-424-9300
INFORMATION PHONE NO. 800-899-3876

H.M.I.S.	
HEALTH	2
FLAMMABILITY	3
REACTIVITY	0
PERSONAL PROTECTION	B
These ratings should be used only as part of fully implemented H.M.I.S. program.	

MATERIAL SAFETY DATA SHEET

DATE OF PREPARATION 6/2000

SECTION I

TRADE NAME: DURO DYNE GALVANIZED STEEL
MANUFACTURER CODE I.D.: GALVANIZED STEEL

SECTION II - HAZARDOUS INGREDIENTS

INGREDIENT	CAS NO.	% BY WGT.	TDG CLASS	WHMIS CLASS	LD50 SPECIES/ROUTE	OSHA PEL	ACGIH TLV
IRON	1309-37-1	BALANCE	None	D2B	5500 mg/kg rat/intraperitoneal	Iron Oxide Fume - 10 mg/M ³ Total Dust - 15 mg/M ³ (PNOR) Respirable Fraction - 5 mg/M ³ (PNOR)	5 mg/M ³ (fume) (PNOC)
ALUMINUM	7429-90-5	.10 MAX.	None	D2B	No information	Total Dust - 15 mg/M ³ Respirable Fraction & Welding Fume 5 mg/M ³	10 mg/M ³ (dust) 5 mg/M ³ (welding fume)
CARBON	7440-44-0	.005/.60	None	None	440 mg/kg mouse/intravenous	Total Dust - 15 mg/M ³ (PNOR) Respirable Fraction - 5 mg/M ³ (PNOR)	10 mg/M ³ (PNOC)
MANGANESE	7439-96-5	.05/1.50	None	D2B	9 gm/kg rat/oral	Dust & Fume - 5 mg/M ³ (C)	5 mg/M ³ (dust) 1 mg/M ³ (fume) 3 mg/M ³ (STEL)(fume)
PHOSPHOROUS	7723-14-0	.15 MAX.	4a	D2A	3030 ug/kg rat/oral	.1 mg/M ³	.1 mg/M ³
SULFUR	7704-34-9	.05 MAX	None	None	>8437 mg/kg rat/oral	Total Dust - 15 mg/M ³ (PNOR) Respirable Fraction - 5 mg/M ³ (PNOR)	10 mg/M ³ (PNOC)
ALUMINUM	7429-90-5	.055 MAX.	None	D2B	No information	Total Dust - 15 mg/M ³ (PNOR) Respirable Fraction & Welding Fume -5 mg/M ³	10 mg/M ³ (dust) 5 mg/M ³ (welding fume)
ANTIMONY	7440-36-0	011 MAX.	None	None	No information	.5 mg/M ³	.5 mg/M ³
IRON	1309-37-1	.092 MAX.	None	D2B	5.5 gm/kg rat/intraperitoneal	Iron Oxide Dust & Fume- 10 mg/M ³ Total Particulates (as Fe)	5 mg/M ³ (fume)
LEAD	7439-92-1	.004 MAX.	None	D2A	LDLo-1 gm/kg rat/intraperitoneal	.05 mg/M ³	.15 mg/M ³
ZINC	1314-13-2	.18/9.1	None	D2B	>8437 mg/kg rat/oral	Fume - 5 mg/M ³ Total Dust - 15 mg/M ³ Respirable Fraction - 5 mg/M ³	5 mg/M ³ (fume) 10 mg/M ³ (STEL) 10 mg/M ³ (dust)

SECTION III - HEALTH INFORMATION

PRIMARY ROUTES OF ENTRY: Inhalation, ingestion, and skin, if coated.

EFFECTS OF OVEREXPOSURE: Chronic inhalation of high concentrations of iron oxide fumes or dust may lead to a benign pneumoconiosis (siderosis). Inhalation of high concentration of ferric oxide may possibly enhance the risk of lung cancer development in workers exposed to pulmonary carcinogens.

Chronic inhalation of high concentrations, or ingestion, of lead have been associated with birth defects and blood disorders. The inhalation of high concentrations 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 mouth, dryness and irritation of the throat, followed by weakness, muscle pain, fever and chills.

Continuous exposures to high concentrations of manganese can cause central nervous system disorders and "manganese pneumonia". Fibrosis of lung tissue from manganese exposures has also been reported for products containing manganese only.

Inhalation of phosphorous oxides may cause respiratory irritation and painful burns upon skin contact.

Sulfur compounds, present in the fumes, may irritate the skin, eyes, lungs and gastrointestinal tract.

Long term inhalation exposure to high concentrations (over exposure) to pneumoconiotic agents may act synergistically with inhalation of oxides, fumes or dusts of this product to cause toxic effects.

OIL COATING MAY BE USED: Prolonged or repeated contact with unprotected skin may result in skin irritation. Torching or burning operations on steel products with oil coating may produce emissions which can be irritating to the eyes and respiratory tract.

HEALTH HAZARD DATA

NOTE: Steel products under normal conditions do not present an inhalation, ingestion, contact health or environmental hazard. However, operations such as burning, welding, sawing, brazing, grinding, and possibly machining, etc. which result in elevating the temperature of the product to or above its melting point or result in the generation of airborne particulates, may present health hazards.

MEDICAL CONDITION AGGRAVATED BY EXPOSURE: Individuals with chronic respiratory disorders (i.e., asthma, chronic bronchitis, emphysema, etc.) may be adversely affected by any fume or airborne particulate matter exposure.

SARA POTENTIAL HAZARD CATEGORIES ARE: Immediate Acute Health Hazard, Delayed Chronic Health Hazard

CARCINOGEN INFORMATION: IARC identifies lead and welding fumes as Group 2B carcinogens, that are probably carcinogenic to humans. (Lists of IARC Evaluations, May, 1993).

SECTION IV - FIRST AID AND EMERGENCY PROCEDURES

RESPIRATORY: 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.

Metal fume fever may be treated by bed rest, and administering a pain and fever reducing medication. Seek medical attention.

EYES: Flush eyes with large amounts of water to remove particles. Seek medical attention.

SKIN: If thermal burn has occurred, flush area with cold water. Seek medical attention. For mechanical abrasions, seek medical attention.

SECTION V - PHYSICAL DATA

BOILING RANGE: N.E.

MELTING POINT: BASE METAL 2750°F

SPECIFIC GRAVITY: 7.85

VAPOR DENSITY (AIR = 1): N.E.

% VOLATILES: N.E.

PH: N.E.

ODOR THRESHOLD: N.E.

APPEARANCE (PHYSICAL & COLOR): METALLIC GRAY SOLID

FREEZING POINT: N.E.

METALLIC COATING: 800-900°F

VAPOR PRESSURE (at 20°C): N.E.

SOLUBILITY IN WATER: N.E.

EVAPORATION RATE: N.E.

OIL/WATER DIST. COEFFICIENT: N.E.

ODOR: NONE

SECTION VI - REGULATORY INFORMATION

U.S. OSHA R-T-K - Contains regulated material.

SARA 313: MANGANESE, ZINC

The above materials are subject to SARA 313 reporting requirements. Please also note that if you prepackage or otherwise redistribute this product to industrial customers, SARA 313 requires that a notice be sent to those customers.

REGULATORY INFORMATION COMPONENTS

NOTE: The listing of regulations relating to a US product may not be complete and should not be solely relied upon for all regulatory compliance responsibilities.

COMPONENTS: REGULATION

Al = SARA 313 if >1.0% ; SDWA; RCRA; DOT

Mn = SARA 313 if > 1.0%

P = SARA 313 if > 1.0%; CWA; CERLA; SARA 302; DOT

PB = SARA 313 if > 0.1%; Calif. Prop. 65; CWA 304 and 307; SDWA; CAA 109; RCRA; SARA 302; SARA 110; OSHA Specific Requirements, DOT; CERCLA

S = DOT

Sb = SARA 313 if > 1.0%; TSCA 8(a)(8)(d); CWA 304 & 307, SDWA; RCRA; CERCLA; DOT

Zn = SARA 313 if > 1.0%; CWA 304 & 307; SDWA; RCRA; CERCLA; SARA 110; DOT

SECTION VII - FIRE AND EXPLOSION DATA

EXTINGUISHING MEDIA: N.E.

HAZARDOUS COMBUSTION PRODUCTS: Stable under normal conditions of use, storage and transport. Will react with strong acid to liberate hydrogen. At temperatures above the melting point, may liberate fumes containing oxides of iron and alloying elements.

SPECIAL FIRE FIGHTING PROCEDURES: N.E.

OXIDIZING MATERIAL: Does not cause or contribute to combustion of other material by yielding oxidizer.

SECTION VIII - ENVIRONMENTAL INFORMATION

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

Not applicable to steel in solid state. Dispose in accordance with State and Local Regulation.

PRECAUTIONS IN HANDLING AND STORAGE:

Operations with the potential for generating high concentrations of airborne particles should be evaluated and controlled as

SECTION IX - PERSONAL PROTECTION INFORMATION

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

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

SKIN: Protective gloves should be worn as required for welding, burning or handling operations. Oil coating may be used: Wear gloves when handling; do not continue to use gloves or work clothing that has become saturated or soaked through with oil coating. Wash hands, and any area of skin after contact, with soap and water or waterless hand cream.

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

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.

SECTION X - SPECIAL PRECAUTIONS

HANDLING AND STORAGE:

Operations with the potential for generating high concentrations of airborne particles should be evaluated and controlled as necessary. Avoid breathing metal fumes and/or dusts.