MATERIAL SAFETY DATA SHEET

ISSUE DATE: 10/30/92
REVISED DATE: 7/13/05
Supersedes: Any Previous M.S.D.S. On This Product

I. IDENTIFICATION

PRODUCT NAME: Galvanized Products
PRODUCT CLASS: Steel

CL WARD & Family, Inc.
1502 Industrial Drive, Unit 2
Monongahela, PA 15063

II. HAZARDOUS INGREDIENTS

MATERIAL:	CAS	% WEIGHT	OSHA PEL (mg/m3)	ACGIH TLV (mg/m3)
Zinc	7440-66-6	1.00-4.50	15 (oxide dust)	15 (oxide dust)
Aluminum	7429-90-5	.01-.08	15 (dust)	10 (dust)
Antimony	7440-36-0	<.00 -.02	0.5	0.5
Iron	7439-89-6	94.00 – 99.66	10 (oxide fume)	5 (oxide fume)
Carbon	7440-44-0	.001-.15	15	10
Chromium*	7440-47-3	0.01-.2	0.5	0.06
Manganese	7439-96-5	0.05-2.0	5 (dust) 5 (fume)	5 (dust) 1 (fume)
Phosphorous	8049-19-2	.001-.020	15	10
Molybdenum	7439-98-7	0.00-.010	15	10
Nickel	7440-02-0	0.01-.30	1	1
Silicon	7440-21-3	.015-.220	15	10
Sulfur	7704-34-9	.001-.020	15	10

This product contains the following ingredient at levels subject to reporting requirements of:
SARA 313 (40CFR372): Manganese, Chromium Nickel
OSHA HAZARADOUS COMMUNICATIONS STANDARD, (29CFR1910.1200): Manganese, Chromium, Nickel, Silicon, Aluminum metallic powder
CALIFORNIA PROPOSITION 65: This product contains the following trace amounts of chemicals known to the state of California to be a cancer hazard: Nickel

III. PHYSICAL DATA

APPEARANCE: Metallic Color
BOILING POINT: N/A
SPECIFIC GRAVITY: 7.5-8.5 g/cm3
SOLUBILITY IN WATER: Not Soluble
SOFTENING POINT: 2400 F
MELTING POINT: 2750°F

IV. HEALTH HAZARD DATA

ROUTE OF EXPOSURE: Inhalation of dusts or fumes.
EFFECTS OF OVEREXPOSURE:

Acute Effect: Excessive inhalation of metal fumes can produce an acute reaction known as “metal fume fever”. Symptoms consist of chills and fever (very similar to and easily confused with flu symptoms) which come on a few hours after large exposures.

Chronic Effects: Only after six to ten years of exposure to iron dust or fume does on e present any signs of pneumoconiosis (i.e. siderosis). Physical examinations of those exposed to iron dust have not indicated any disability.

Excessive and repeated inhalation of chromium fume or dust may cause severe irritation, ulceration or cancer in the respiratory system. It is generally believed that the hexavalent form of chromium (Cr+6) are responsible for these effects. It is uncertain whether metallic chromium in dust form can cause the same effects noted above.

Excessive and prolonged inhalation of manganese (generally over two years exposure) can cause damage to the central nervous system. The pathology resembles Parkinson’s Disease. Also, workers routinely exposed to high concentrations of manganese display an unusually high incidence of respiratory disease.

Molybdenum has caused toxicity (anemia and poor growth) in farm animals, but there are no data documenting toxicity to humans due to industrial exposure.

Excessive inhalation of nickel fumes has been associated with respiratory cancer. Nickel is a potential sensitizer and may cause allergic reactions.

Chronic exposure to tungsten dust has caused respiratory disorders characterized by cough, dyspnea and wheezing.

There is no correlation between the onset of symptoms, the length of exposure and the development of interstitial fibrosis. Dermatitis, primarily on the side of the neck, flexor parts of the forearm and the back of the hand were also detected.
Vanadium dusts cause a persistent cough which can develop after five hours of exposure and may last up to ten days. Pulmonary irritation also results from vanadium, but there are no deviations in pulmonary function or other laboratory tests.
Zinc dust is a skin and respiratory tract irritant. It is relatively nontoxic. However, if oxidation occurs prior to inhalation, one must deal with toxicities associated with zinc oxide such as metal fume fever, gastrointestinal disorders and hepatic dysfunction.

V. EMERGENCY AND FIRST AID PROCEDURES

INHALATION: If acute overexposure to dust or fumes occurs, remove victim from the adverse environment and seek medical attention..
SKIN CONTACT: Wash area of contact thoroughly with soap and water. If irritation persists, seek medical attention.
EYE CONTACT: Flush immediately with running water for fifteen minutes. If irritation persists, seek medical attention.
INGESTION: N/A

VI. FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY CLASS:
FLASH POINT: N/A
EXTINGUISHING MEDIA: As for the surrounding fire, use dry powder for metal fires.
UNUSUAL FIRE HAZARD: Contact of molten product with water can cause an explosion hazard.
FIRE FIGHTING PROCEDURES: Wear full protective clothing including helmet, self-contained positive pressure-demand breathing apparatus, protective clothing, and a face mask.
SPECIAL PROCEDURES: Firefighters should wear equipment to protect against noxious fumes.
PRODUCT OF COMBUSTION: Material will begin softening at approximately 2400 F, will proceed to a liquid and form irritating and toxic gaseous metallic oxides at extremely high temperatures.

VII. SPILL OR LEAK PROCEDURES

LARGE/SMALL SPILL: Avoid creating dusts when cleaning spill. Small pieces may be collected using a broom and shovel. Particulates and dust may be collected by using a vacuum with a HEPA filter. Place collected material in a closed container.
Minimal problems with spills of this product would occur because of its solid form. However, if there is a spill of dust, clean up using methods which avoid dust generation and the use of water, such as vacuum. If airborne dust is generated during the clean up, use an appropriate NIOSH-approved respirator.
Waste Disposal Method: Dispose of in accordance with appropriate federal, state and local regulations.

VIII. SPECIAL PROTECTION

VENTILATION: Local exhaust ventilation should be provided to keep workers exposures within allowable limits. Whenever dusts, particulates, or fumes are generated, use appropriate local exhaust ventilation to keep exposures below the regulated limits.
RESPIRATORY PROTECTION: Use NIOSH/NSHA approved organic vapor respirators when vapor concentrations exceed the TLV.
EYE PROTECTION: Personal protective equipment should be worn when there is a reasonable probability of injury. Wear safety glasses with side shields.
HAND PROTECTION: Wear leather or other appropriate work gloves, if necessary for type of operation.
OTHER: Protective clothing coveralls.

IX. CARCINOGENIC ASSESSMENT

Nickel and Chromium have been identified as suspect carcinogens by NTP and IARC.

X. REACTIVITY DATA

STABILITY: Stable under normal conditions of handling and use.
CONDITIONS TO AVOID: Poor ventilation.
INCOMPATIBILITY: Strong acids (produce hydrogen gas)
HAZARDOUS DECOMPOSITION PRODUCT: Metallic oxide.
HAZARDOUS POLYMERIZATION: Will not occur

XI. SPECIAL PRECAUTIONS

HANDLING AND STORAGE: Use good housekeeping practices to avoid excessive dust accumulation. As supplied, this product does not present a health hazard. Processing of the product for final uses can include formation of dusts, particulates, or fumes, some of which may present health hazards.