OSHA REQUIRED !

MATERIAL SAFETY DATA SHEETS

These must be kept on this construction site and be available to all personnel !

STEEL USED IN THE BUILDING FRAMEWORK

1. Carbon Plate, Sheet, Bar, Strip, Structural Steel Shapes, Pipe and Tubing used in the main support frame assemblies.

2. Sheet and Strip used to produce secondary structural members:
   - A. Carbon Steel
   - B. Galvanized

HEALTH DATA

Primary Routes of Entry:
Inhalation, and skin, if coated.

Effects of Overexposure:

Chronic inhalation of high concentrations of iron oxide fumes or 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 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 phosphorus 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.

Longterm inhalation exposure to high concentrations (overexposure) 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.

Emergency and First Aid 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.

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

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

Special Protection Information:

Respiratory: 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.

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 cleaner.

Eyes: 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.

Precautions in Handling and Storage: Operations with the potential for generating high concentrations of airborne particulates should be evaluated and controlled as necessary. Avoid breathing metal fumes and/or dusts.

Spill or Leak Procedures: Not applicable to steel in solid state. Dispose in accordance with state and local regulation.

SECONDARY STRUCTURAL - CARBON STEEL

U. S. STEEL GROUP
A Division of USX Corporation
Material Safety Data Sheet

PRODUCT INFORMATION

Product/Common Name: Hot or Cold Rolled HSLA Steel Sheet/Strip and Hot Rolled Skelp

CAS No.: 65997-19-5

USS Code No.: 3H011

Reference: January, 1994

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 Conditions 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 welding fumes as a Group 2B carcinogen, a mixture which is probably carcinogenic to humans. (Lists of IARC Evaluations, May, 1993)

Regulatory Information Components

NOTE: The listing of regulations relating to a USS 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; CERCLA; SARA 302; DOT
S	= DOT
Ti	= DOT
V	= SARA 313 if > 1.0%; SDWA

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CWA	Clean Water Act
DOT	Department of Transportation
IARC	International Agency for Research on Cancer
NIOSH	National Institute of Occupational Safety and Health
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration
RCRA	Resource Conservation Recovery Act
SARA	Superfund Amendments and Reauthorization Act of 1986
SDWA	Safe Drinking Water Act
TDG	Transportation of Dangerous Goods Act
TSCA	Toxic Substances Control Act
WHMIS	Workplace Hazardous Materials Information System

U. S. STEEL GROUP
Material Safety Data Sheet
P.O. Box 206, Pittsburgh, PA 15230-0206
Telephone Information:
8:00 am-5:00 pm: (412) 433-6840
Off-Hour Emergencies: (412) 433-5811
Fax: (412) 433-6601

PRODUCT INFORMATION

Product/Common Name: Hot or Cold Rolled HSLA Steel Sheet/Strip and Hot Rolled Skelp
CAS No: 65997-19-5
USS Code No: 3H011
Original Issue Date: 8/1/85
Reference: January, 1994

PHYSICAL DATA:

Boiling Point:	Not Applicable
Freezing Point	Not Applicable
Melting Point—Base Metal:	2750°F
Melting Point—Metallic Coating:	Not Applicable
Specific Gravity:	7.85
Vapor Pressure—at 20°C:	Not Applicable
Vapor Density (air = 1):	Not Applicable
Solubility in Water:	Not Soluble
% Volatiles:	Not Applicable
Evaporation Rate:	Not Applicable
pH:	Not Applicable
Oil/Water Dist. Coefficient:	Not Applicable
Odor Threshold Conc.:	Not Applicable
Appearance (Physical State and Color):	Metallic Gray Solid
Odor:	No Odor

FIRE AND EXPLOSION HAZARDS:

Not flammable or combustible. Steel products in the solid state present no fire or explosion hazard and do not contribute to the combustion of other materials.

FIRE AND EXPLOSION DATA

Extinguishing Media: Not Applicable

Special Fire Fighting Instructions: None

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.

Oxidizing Material: Does Not Cause or Contribute to Combustion of Other Material by Yielding Oxidizer

REGULATORY INFORMATION

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

Pennsylvania R-T-K — Contains regulated material
- E = Environmental Hazard
- E+ = Environmental Hazard any compound this substance
- S = Special Hazard Substance

New Jersey R-T-K — Contains regulated material
- H = Special Health Hazard Substance

California Prop. 65 — This product contains a material known to the State of California to cause cancer.

SARA 313: MANGANESE
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.

WHMIS: (Canadian): D-2B Product Classification

1993 NIOSH Registry of Toxic Effects of Chemical Substances Reference — 44891, 5557, 25416, 48152, 60758, 81466, 84543, 89324

Definitions:
- C Ceiling
- PNOC Particulates not otherwise classified
- PNOR Particulates not otherwise regulated
- STEL Short Term Exposure Limit. A 15-minute Time-Weighted Average Value.

INGREDIENTS AND RECOMMENDED OCCUPATIONAL EXPOSURE LIMIT

Ingredient Name	CAS No.	% wt.	TDG Class.	WHMIS Class.	LD50 Species/Route	OSHA PEL	ACGIH TLV
Base Metal							
Iron	1309-37-1	Balance	None	D2B	5500 mg/kg rat/intraperitoneal	Iron Oxide Fume - 10 mg/M³ Total Dust - 15 mg/M³ (PNOR) Respirable Fraction - 5 mg/M³ (PNOR)	5 mg/M³ (fume) (PNOC)
Alloying Elements							
Aluminum (E)	7429-90-5	.10 max.	None	D2B	No information	Total Dust - 15 mg/M³ Respirable Fraction & Welding Fume - 5 mg/M³	10 mg/M³ (dust) 5 mg/M³ (welding fume)
Carbon	7440-44-0	.25 max.	None	D2B	440 mg/kg mouse/intravenous	Total Dust - 15 mg/M³ (PNOR) Respirable Fraction - 5 mg/M³ (PNOR)	10 mg/M³ (PNOC)
Columbium	7440-03-1	.10 max.	None	D2B	No information	Total Dust - 15 mg/M³ (PNOR) Respirable Fraction - 5 mg/M³ (PNOR)	10 mg/M³ (PNOC)
Manganese (E/E+)	7439-96-5	.05/1.90	None	D2B	9 gm/kg rat/oral	Dust & Fume - 5 mg/M³ (C)	5 mg/M³ (dust) 1 mg/M³ (fume) 3 mg/M³ (STEL) (fume)
Phosphorus (E)	7723-14-0	.15 max.	4a	D2A	3030 ug/kg rat/oral	.1 mg/M³	.1 mg/M³
Rare Earth (Ce)	7440-45-1	.10 max.	None	D2B	No information	Total Dust - 15 mg/M³ (PNOR) Respirable Fraction - 5 mg/M³ (PNOR)	10 mg/M³ (PNOC)
Sulfur	7704-34-9	.05 max.	None	None	> 8437 mg/kg rat/oral	Total Dust - 15 mg/M³ (PNOR) Respirable Fraction - 5 mg/M³ (PNOR)	10 mg/M³ (PNOC)
Titanium	7440-32-6	.30 max.	None	D2B	No information	Total Dust - 15 mg/M³ (PNOR) Respirable Fraction - 5 mg/M³ (PNOR)	10 mg/M³ (PNOC)
Vanadium (E)	7440-62-2	.20 max.	6a	D1B	59 mg/kg rabbit/subcutaneous	Total Dust - 15 mg/M³ (PNOR) Respirable Fraction - 5 mg/M³ (PNOR)	10 mg/M³ (PNOC)

SECONDARY STRUCTURAL - CARBON STEEL

NOTES:
All commercial metals contain small amounts of various elements in addition to those specified. These small quantities, frequently referred to as "trace" or "residual" elements, generally originate in the raw materials used. Typical levels of commonly involved trace or residual elements that may be encountered in steel products are provided in Annex I so that their potential hazards may be considered.

All exposure limits are based on 8-hour time-weighted average values unless stated otherwise. (STEL) denotes "Short-Term Exposure Limit", a 15-minute time-weighted average value.

U. S. STEEL GROUP
Material Safety Data Sheet
P.O. Box 206, Pittsburgh, PA 15230-0206
Telephone Information:
8:00 am-5:00 pm: (412) 433-6840
Off-Hour Emergencies: (412) 433-5811
Fax: (412) 433-6601

4

PRODUCT INFORMATION

Product/Common Name: Galvanized Sheet-HSLA Steel (Hot Dipped)

CAS No: 65997-19-5

USS Code No: 3H012

Original Issue Date: 8/1/85

Reference: January, 1994

REGULATORY INFORMATION

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

Pennsylvania R-T-K — Contains regulated material
- E = Environmental Hazard
- E+ = Environmental Hazard any compound this substance
- S = Special Hazard Substance

New Jersey R-T-K — Contains regulated material
- H = Special Health Hazard Substance

California Prop. 65 — This product contains a material known to the State of California to cause cancer or reproductive toxicity.

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.

WHMIS: (Canadian): D-2B Product Classification

1993 NIOSH Registry of Toxic Effects of Chemical Substances Reference —
44891, 5557, 25416, 48152, 60758, 81466, 84543, 89324, 9734, 46992, 90417

Definitions:
- C Ceiling
- PNOC Particulates not otherwise classified
- PNOR Particulates not otherwise regulated
- STEL Short Term Exposure Limit. A 15-minute Time-Weighted Average Value.

PHYSICAL DATA:

Boiling Point:	Not Applicable
Freezing Point	Not Applicable
Melting Point—Base Metal:	2750°F
Melting Point—Metallic Coating:	800-900°F
Specific Gravity:	7.85
Vapor Pressure—at 20°C:	Not Applicable
Vapor Density (air=1):	Not Applicable
Solubility in Water:	Not Soluble
% Volatiles:	Not Applicable
Evaporation Rate:	Not Applicable
pH:	Not Applicable
Oil/Water Dist. Coefficient:	Not Applicable
Odor Threshold Conc.:	Not Applicable
Appearance (Physical State and Color):	Metallic Gray Solid
Odor:	No Odor

FIRE AND EXPLOSION HAZARDS:

Not flammable or combustible. Steel products in the solid state present no fire or explosion hazard and do not contribute to the combustion of other materials.

FIRE AND EXPLOSION DATA

Extinguishing Media: Not Applicable

Special Fire Fighting Instructions: None

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.

Oxidizing Material: Does Not Cause or Contribute to Combustion of Other Material by Yielding Oxidizer

INGREDIENTS AND RECOMMENDED OCCUPATIONAL EXPOSURE LIMIT

Ingredient Name	CAS No.	% wt.	TDG Class.	WHMIS Class.	LD50 Species/Route	OSHA PEL	ACGIH TLV
Base Metal							
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)
Alloying Elements							
Aluminum (E)	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	.25 max.	None	D2B	440 mg/kg mouse/intravenous	Total Dust - 15 mg/M^3 (PNOR) Respirable Fraction - 5 mg/M^3 (PNOR)	10 mg/M^3 (PNOC)
Columbium	7440-03-1	.10 max.	None	D2B	No information	Total Dust - 15 mg/M^3 (PNOR) Respirable Fraction - 5 mg/M^3 (PNOR)	10 mg/M^3 (PNOC)
Manganese (E/E+)	7439-96-5	.05/1.90	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)
Phosphorus (E)	7723-14-0	.15 max.	4a	D2A	3030 ug/kg rat/oral	.1 mg/M^3	.1 mg/M^3
Rare Earth (Ce)	7440-45-1	.10 max.	None	D2B	No information	Total Dust - 15 mg/M^3 (PNOR) Respirable Fraction - 5 mg/M^3 (PNOR)	10 mg/M^3 (PNOC)
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)
Titanium	7440-32-6	.30 max.	None	D2B	No information	Total Dust - 15 mg/M^3 (PNOR) Respirable Fraction - 5 mg/M^3 (PNOR)	10 mg/M^3(PNOC)
Vanadium (E)	7440-62-2	.20 max.	6a	D1B	59 mg/kg rabbit/subcutaneous	Total Dust - 15 mg/M^3 (PNOR) Respirable Fraction - 5 mg/M^3 (PNOR)	10 mg/M^3 (PNOC)
Metallic Coating							
Aluminum (E)	7429-90-5	* .055 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/M3 (welding fume)
Antimony (E/E+)	7440-36-0	.011 max.	None	D2B	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 (E/E+/H)	7439-92-1	.004 max.	None	D2A	LDLo—1 gm/kg rat/intraperitoneal	.05 mg/M^3	.15 mg/M^3
Zinc (E/E+)	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)

NOTES:
All commer[illegible] frequently referred to as "trace" or [illegible] generally originate in the raw materials used. Typical levels of commonly involved trace or residual elements that may be encountered in steel products are provided in Annex I so that their potential hazards may be considered

All exposure limits are based on 8-hour time-weighted average values unless stated otherwise (STEL) denotes "Short-Term Exposure Limit", a 15-minute time-weighted average value

* % wt/metallic coating is a percent of total product

HEALTH DATA

Primary Routes of Entry: Inhalation, ingestion and skin, if coated.

Effects of Overexposure:

Chronic inhalation of high concentrations of iron oxide fumes or 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.

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 phosphorus 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.

Longterm inhalation exposure to high concentrations (overexposure) 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.

Emergency and First Aid 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.

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

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

Special Protection Information:

Respiratory: 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.

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 cleaner.

Eyes: 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.

Precautions in Handling and Storage: Operations with the potential for generating high concentrations of airborne particulates should be evaluated and controlled as necessary. Avoid breathing metal fumes and/or dusts.

Spill or Leak Procedures: Not applicable to steel in solid state. Dispose in accordance with state and local regulation.

PRODUCT INFORMATION

Product/Common Name: Galvanized Sheet-HSLA Steel (Hot Dipped)

CAS No.: 65997-19-5

USS Code No.: 3H012

Reference: January, 1994

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 Conditions 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)

Regulatory Information Components

NOTE: The listing of regulations relating to a USS 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; CERCLA; SARA 302; DOT
Pb	= SARA 313 if > 1.0%; 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 and 307; SDWA; RCRA; CERCLA; DOT
Ti	= DOT
V	= SARA 313 if > 1.0%; SDWA
Zn	= SARA 313 if > 1.0%; CWA 304 and 307; SDWA; RCRA; CERCLA; SARA 110; DOT

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CWA	Clean Water Act
DOT	Department of Transportation
IARC	International Agency for Research on Cancer
NIOSH	National Institute of Occupational Safety and Health
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration
RCRA	Resource Conservation Recovery Act
SARA	Superfund Amendments and Reauthorization Act of 1986
SDWA	Safe Drinking Water Act
TDG	Transportation of Dangerous Goods Act
TSCA	Toxic Substances Control Act
WHMIS	Workplace Hazardous Materials Information System

MATERIAL SAFETY DATA SHEET

I. Material Identification

Manufacturer's Name: Various

Material Name: Carbon and Alloy Steels
Structural Steel Shapes, Plates, Bars, Pipe and Tubing.

Material Grades: ASTM: A-36, A-572, A-516, A-569, A-570, A-500 Gr A & B, A-120, A-53

II. Ingredients and Recommended Occupational Exposure Limits.

Note: Steel Products under normal conditions do not present an inhalation, contact or ingestion health hazard.

Ingredients	CAS Number	% Weight	Exposure Limits	
			OSHA Pel (Mg/M^3)	ACGIH TLV (Mg/M^3)
Base Metal: Iron (fe)	1309-37-1	94/99	10 as Iron Oxide Fume	5.0 as Iron Oxide Fume
Alloying Elements:				
Carbon (C)	1333-86-4	.01-1.5	None Listed	None Listed
Manganese (Mn)	7439-96-5	.01-2.0	5 ceiling Limit	5 ceiling limit; 1 as fume
Silicon (Si)	7440-21-3	0.15-2.2	15 total dust 5 respirable dust	10 total dust 5 respirable dust
Nickel (Ni)	7440-02-0	.01-10	1 as nickel	1 as nickel
Copper (Cu)	7440-50-8	.01-1.0	.1 fume 1.0 dust	.5 fume 1.0 dust
Chromium (Cr)	7440-47-3	.01-12	1.0 Chrome	.5 Chrome .05 -Cr Vl Cmpds.
Molybdenum (Mo)	7439-98.7	0.01-1.10	15 as Insoluble Cmpds.	10 as Insoluble Cmpds.
Phosphorus (P)	7723-14-0	0.15 Max	None for Inorganic Phosphates	None for Inorganic Phosphates
Sulphur (S)	7704-34-9	0.001-0.35	13 Sulfur Dioxide	5 Sulfur Dioxide
Aluminum (AL)	7429-90-5	Less than 2 %	None Established	10
Zinc (Zn) Coating	1314-13-2	10 Max	5.0 as fume	5.0 as fume

III. Physical Data

Normal Condition:	Solid
Appearance:	Gray/Black with metallic lustre
Odor:	None
Melting Point:	Approx 2750° F
Specific Gravity:	7.6 - 7.8
Solubility in Water:	NA (% by Weight)
Vapor Pressure (of Iron Dust):	1 mm Hg c 1787° C
Evaporation Rate:	NA
Boiling Point (of Iron Dust):	3000° C

PH = NA

IV. Fire and Explosion Hazard

Steel Products in solid state present no fire or explosion hazard. Fire and explosion hazards are moderate when material is in the form of dust and exposed to heat or flame, or by chemical reaction.

Fire Extinguishing Method: Use special mixtures of Dry Chemical or sand. Fire fighters should wear self-contained breathing apparatus and protective clothing.

V. Reactivity Data

Stability:	Stable
Incompatibility Material to Avoid:	Reacts with strong acids to form Hydrogen Gas.
Hazard Decomposition Products:	Metallic Oxides Fumes and/or gases or metallic dust may be produced during welding, burning, grinding, machining and galvanizing.

VI. Health Hazard Data

Note: Steel Products in the natural state do not present any inhalation, contact or ingestion hazard. Operations such as burning, welding, grinding, cutting, brazing, abrasive blasting, heat treating, pickling, galvanizing, machining or similar operations may release fumes or dust which may present health hazards if the threshold limit values are exceeded.

Major Exposure Hazard:	(1) Inhalation (2) Skin Contact (3) Ingestion
Primary Routes of Entry:	Inhalation of dust or fumes.

Effects of Overexposure:

Short-term exposure to fumes or dust may produce irritiation of eyes and respiratory systems. Inhalation of high concentrations of freshly-formed oxide fumes of iron, manganese, copper and lead may cause metal fume fever characterized by a metallic taste in the mouth, dryness and irritation of the throat and influenza like symptoms. Chronic inhalation of high concentrations of iron oxide fumes or dust may lead to a benign pneumoconiosis (siderosis).

Overexposure to dusts and especially fumes containing component elements of ferrous alloys may cause skin, nose, mouth and eye irritation and lung changes in workers, potentially leading to pulmonary diseases.

Inhalation of lead particles may result in lead-induced systemic toxicity. Symptoms of lead poisoning include abdominal cramps, anemia, muscle weakness and headache. Prolonged exposure can cause behavioral changes, kidney damage, CNS damage and reproductive effects.

Manganese poisoning. Early symptoms include headaches, apathy, sleepiness, and weakness or cramps in legs. Chronic overexposure can affect the CNS, ultimately leading to emotional disturbances, gait and balance difficulties, and paralysis.

Chromium and nickel compounds have been associated with allergic reactions, rashes and lung changes. Nickel is a respiratory irritant and can cause pneumonitis. Chromium, cobalt-chromium alloy, and nickel have been identified as potential carcinogens.

First Aid:

Eye Contact:	Flush well with running water to remove particulate. Seek medical attention.
Skin Contact:	Brush off excess dust. Wash area well with soap and water.
Inhalation:	Remove to fresh air. Seek medical aid immediately.
Ingestion:	Seek medical aid.

VII. Spill, Leak and Disposal Procedure

Spill and Leak:	N/A to steel products in the solid state.
Disposal:	Follow formal state and local regulations.

VIII. Special Protection

Use exhaust ventilation to keep airborne concentrations of dust or fumes below the TLV.
Employees should wear NIOSH or MSHA approved respirators for protection against airborne dust or fumes.
Safety glasses or goggles should be used when working in dusty environments.
Safety eyewash stations should be provided.
Full protective clothing should be worn by workers exposed to heavy concentrations of dust.
Gloves and barrier creams may be necessary to prevent skin sensitization and dermatitis.
Periodic medical evaluations directed toward skin, eyes, respiratory tract, pulmonary function and neurologic health are suggested.

IX. Special Precautions

Welding

Welding precautions should be taken for airborne contaminants which may originate from components of the rod.

Contamination

Material contaminated with coatings, paints, preservatives, cutting oils and other contaminates should be handled with appropriate protective equipment for personnel and fire protection.

- - - NOTE - - -

This information was obtained from souces which we believe are reliable. The information is provided without any representations of warranty, expressed or implied, regarding the accuracy or correctness. Intsel Southwest, its Divisions, offices and employees, do not assume any responsibility or liability for its contents.

STEEL USED IN THE BUILDING COVERING AND TRIM

1. GALVALUME® Sheet
2. Galvanized Sheet

U. S. STEEL GROUP
Material Safety Data Sheet
P.O. Box 206, Pittsburgh, PA 15230-0206
Telephone Information:
8:00 am-5:00 pm: (412) 433-6840
Off-Hour Emergencies: (412) 433-5811
Fax: (412) 433-6601

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PRODUCT INFORMATION

Product/Common Name: GALVALUME® Sheet — HSLA Steel

CAS No: 65997-19-5

USS Code No: 3H016

Original Issue Date: 8/1/85

Reference: January, 1994

REGULATORY INFORMATION

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

Pennsylvania R-T-K — Contains regulated material
- E = Environmental Hazard
- E+ = Environmental Hazard any compound this substance
- S = Special Hazard Substance

New Jersey R-T-K — Contains regulated material
- H = Special Health Hazard Substance

California Prop. 65 — This product contains a material known to the State of California to cause cancer.

SARA 313: ALUMINUM, 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.

WHMIS: (Canadian): D-2B Product Classification

1993 NIOSH Registry of Toxic Effects of Chemical Substances Reference —
44891, 5557, 25416, 48152, 60758, 81466, 84543, 89324, 79351, 90417

Definitions:
- C — Ceiling
- PNOC — Particulates not otherwise classified
- PNOR — Particulates not otherwise regulated
- STEL — Short Term Exposure Limit. A 15-minute Time-Weighted Average Value.

PHYSICAL DATA:

Boiling Point:	Not Applicable
Freezing Point	Not Applicable
Melting Point—Base Metal:	2750°F
Melting Point—Metallic Coating:	1040°F
Specific Gravity:	7.85
Vapor Pressure—at 20°C:	Not Applicable
Vapor Density (air = 1):	Not Applicable
Solubility In Water:	Not Soluble
% Volatiles:	Not Applicable
Evaporation Rate:	Not Applicable
pH:	Not Applicable
Oil/Water Dist. Coefficient:	Not Applicable
Odor Threshold Conc.:	Not Applicable
Appearance (Physical State and Color):	Metallic Gray Solid
Odor:	No Odor

FIRE AND EXPLOSION HAZARDS:

Not flammable or combustible. Steel products in the solid state present no fire or explosion hazard and do not contribute to the combustion of other materials.

FIRE AND EXPLOSION DATA

Extinguishing Media: Not Applicable

Special Fire Fighting Instructions: None

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.

Oxidizing Material: Does Not Cause or Contribute to Combustion of Other Material by Yielding Oxidizer

INGREDIENTS AND RECOMMENDED OCCUPATIONAL EXPOSURE LIMIT

Ingredient Name	CAS No.	% wt.	TDG Class.	WHMIS Class.	LD50 Species/Route	OSHA PEL	ACGIH TLV
Base Metal							
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)
Alloying Elements							
Aluminum (E)	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	.25 max.	None	D2B	440 mg/kg mouse/intravenous	Total Dust - 15 mg/M^3 (PNOR) Respirable Fraction - 5 mg/M^3 (PNOR)	10 mg/M^3 (PNOC)
Columbium	7440-03-1	.10 max.	None	D2B	No information	Total Dust - 15 mg/M^3 (PNOR) Respirable Fraction - 5 mg/M^3 (PNOR)	10 mg/M^3 (PNOC)
Manganese (E/E+)	7439-96-5	.05/1.90	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)
Phosphorus (E)	7723-14-0	.15 max.	4a	D2A	3030 ug/kg rat/oral	.1 mg/M^3	.1 mg/M^3
Rare Earth (Ce)	7440-45-1	.10 max.	None	D2B	No information	Total Dust - 15 mg/M^3 (PNOR) Respirable Fraction - 5 mg/M^3 (PNOR)	10 mg/M^3 (PNOC)
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)
Titanium	7440-32-6	.30 max.	None	D2B	No information	Total Dust - 15 mg/M^3 (PNOR) Respirable Fraction - 5 mg/M^3 (PNOR)	10 mg/M^3 (PNOC)
Vanadium (E)	7440-62-2	.20 max.	6a	D1B	59 mg/kg rabbit/subcutaneous	Total Dust - 15 mg/M^3 (PNOR) Respirable Fraction - 5 mg/M^3 (PNOR)	10 mg/M^3 (PNOC)
Metallic Coating							
Aluminum (E)	7429-90-5	* .82/3.04	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)
Iron	1309-37-1	.52 max.	None	D2B	5.5 gm/kg rat/intraperitoneal	Iron Oxide Dust & Fume - Total Particulates (as Fe)	5 mg/M^3 (fume)
Silicon	7440-21-3	.022/.10	None	D2B	3160 mg/kg rat/oral	Total Dust - 15 mg/M^3 Respirable Fraction - 5 mg/M^3	10 mg/M^3
Zinc (E/E+)	1314-13-2	.58/2.26	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)

NOTES:
All comme[illegible] in addition [illegible] small quantities, frequently referred to as "trace" or [illegible] elements, generally originat[illegible] in the raw materials used. Typical levels of commonly involved trace or residual elements that may be encountered in steel products are provided in Annex I so that their potential hazards may be considere[illegible]

All exposure limits are based on 8-hour time-weighted average values unless stated otherwise. (STEL) denotes "Short-Term Exposure Limit", a 15-minute time-weighted average value.

* % wt/metallic coating is a percent of total product.

HEALTH DATA

Primary Routes of Entry: Inhalation, and skin, if coated.

Effects of Overexposure:

Chronic inhalation of high concentrations of iron oxide fumes or 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 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 phosphorus 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.

Longterm inhalation exposure to high concentrations (overexposure) 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.

Emergency and First Aid 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.

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

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

Special Protection Information:

Respiratory: 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.

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 cleaner.

Eyes: 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.

Precautions in Handling and Storage: Operations with the potential for generating high concentrations of airborne particulates should be evaluated and controlled as necessary. Avoid breathing metal fumes and/or dusts.

Spill or Leak Procedures: Not applicable to steel in solid state. Dispose in accordance with state and local regulation.

PRODUCT INFORMATION

Product/Common Name: Galvalume Sheet — HSLA Steel

CAS No.: 65997-19-5

USS Code No.: 3H016

Reference: January, 1994

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 Conditions 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 welding fumes as a Group 2B carcinogen, a mixture which is probably carcinogenic to humans. (Lists of IARC Evaluations, May, 1993)

Regulatory Information Components

NOTE: The listing of regulations relating to a USS 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; CERCLA; SARA 302; DOT
S	= DOT
Ti	= DOT
V	= SARA 313 if > 1.0%; SDWA
Zn	= SARA 313 if > 1.0%; CWA 304 and 307; SDWA; RCRA; CERCLA; SARA 110; DOT

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CWA	Clean Water Act
DOT	Department of Transportation
IARC	International Agency for Research on Cancer
NIOSH	National Institute of Occupational Safety and Health
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration
RCRA	Resource Conservation Recovery Act
SARA	Superfund Amendments and Reauthorization Act of 1986
SDWA	Safe Drinking Water Act
TDG	Transportation of Dangerous Goods Act
TSCA	Toxic Substances Control Act
WHMIS	Workplace Hazardous Materials Information System

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U. S. STEEL GROUP
Material Safety Data Sheet

P.O. Box 206, Pittsburgh, PA 15230-0206
Telephone Information:
8:00 am-5:00 pm: (412) 433-6840
Off-Hour Emergencies: (412) 433-5811
Fax: (412) 433-6601

PRODUCT INFORMATION

Product/Common Name: Galvanized Sheet-HSLA Steel (Hot Dipped)
CAS No: 65997-19-5
USS Code No: 3H012
Original Issue Date: 8/1/85
Reference: January, 1994

REGULATORY INFORMATION

U.S. OSHA R-T-K — Contains regulated material
Pennsylvania R-T-K — Contains regulated material
- E = Environmental Hazard
- E+ = Environmental Hazard any compound this substance
- S = Special Hazard Substance

New Jersey R-T-K — Contains regulated material
- H = Special Health Hazard Substance

California Prop. 65 — This product contains a material known to the State of California to cause cancer or reproductive toxicity.

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.

WHMIS: (Canadian): D-2B Product Classification

1993 NIOSH Registry of Toxic Effects of Chemical Substances Reference —
44891, 5557, 25416, 48152, 60758, 81466, 84543, 89324, 9734, 46992, 90417

Definitions:
- C Ceiling
- PNOC Particulates not otherwise classified
- PNOR Particulates not otherwise regulated
- STEL Short Term Exposure Limit. A 15-minute Time-Weighted Average Value.

PHYSICAL DATA:

Boiling Point:	Not Applicable
Freezing Point	Not Applicable
Melting Point—Base Metal:	2750°F
Melting Point—Metallic Coating:	800-900°F
Specific Gravity:	7.85
Vapor Pressure—at 20°C:	Not Applicable
Vapor Density (air = 1):	Not Applicable
Solubility in Water:	Not Soluble
% Volatiles:	Not Applicable
Evaporation Rate:	Not Applicable
pH:	Not Applicable
Oil/Water Dist. Coefficient:	Not Applicable
Odor Threshold Conc.:	Not Applicable
Appearance (Physical State and Color):	Metallic Gray Solid
Odor:	No Odor

FIRE AND EXPLOSION HAZARDS:

Not flammable or combustible. Steel products in the solid state present no fire or explosion hazard and do not contribute to the combustion of other materials.

FIRE AND EXPLOSION DATA

Extinguishing Media: Not Applicable

Special Fire Fighting Instructions: None

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.

Oxidizing Material:
Does Not Cause or Contribute to Combustion of Other Material by Yielding Oxidizer

INGREDIENTS AND RECOMMENDED OCCUPATIONAL EXPOSURE LIMIT

Ingredient Name	CAS No.	% wt.	TDG Class.	WHMIS Class.	LD50 Species/Route	OSHA PEL	ACGIH TLV
Base Metal							
Iron	1309-37-1	Balance	None	D2B	5500 mg/kg rat/intraperitoneal	Iron Oxide Fume - 10 mg/M³ Total Dust - 15 mg/M³ (PNOR) Respirable Fraction - 5 mg/M³ (PNOR)	5 mg/M³ (fume) (PNOC)
Alloying Elements							
Aluminum (E)	7429-90-5	.10 max.	None	D2B	No information	Total Dust - 15 mg/M³ Respirable Fraction & Welding Fume - 5 mg/M³	10 mg/M³ (dust) 5 mg/M³ (welding fume)
Carbon	7440-44-0	.25 max.	None	D2B	440 mg/kg mouse/intravenous	Total Dust - 15 mg/M³ (PNOR) Respirable Fraction - 5 mg/M³ (PNOR)	10 mg/M³ (PNOC)
Columbium	7440-03-1	.10 max.	None	D2B	No information	Total Dust - 15 mg/M³ (PNOR) Respirable Fraction - 5 mg/M³ (PNOR)	10 mg/M³ (PNOC)
Manganese (E/E+)	7439-96-5	.05/1.90	None	D2B	9 gm/kg rat/oral	Dust & Fume - 5 mg/M³ (C)	5 mg/M³ (dust) 1 mg/M³ (fume) 3 mg/M³ (STEL) (fume)
Phosphorus (E)	7723-14-0	.15 max.	4a	D2A	3030 ug/kg rat/oral	.1 mg/M³	.1 mg/M³
Rare Earth (Ce)	7440-45-1	.10 max.	None	D2B	No information	Total Dust - 15 mg/M³ (PNOR) Respirable Fraction - 5 mg/M³ (PNOR)	10 mg/M³ (PNOC)
Sulfur	7704-34-9	.05 max.	None	None	> 8437 mg/kg rat/oral	Total Dust - 15 mg/M³ (PNOR) Respirable Fraction - 5 mg/M³ (PNOR)	
Titanium	7440-32-6	.30 max.	None	D2B	No information	Total Dust - 15 mg/M³ (PNOR) Respirable Fraction - 5 mg/M³ (PNOR)	10 mg/M³ (PNOC) 10 mg/M³(PNOC)
Vanadium (E)	7440-62-2	.20 max.	6a	D1B	59 mg/kg rabbit/subcutaneous	Total Dust - 15 mg/M³ (PNOR) Respirable Fraction - 5 mg/M³ (PNOR)	10 mg/M³ (PNOC)
Metallic Coating		*					
Aluminum (E)	7429-90-5	.055 max.	None	D2B	No information	Total Dust - 15 mg/M³ Respirable Fraction & Welding Fume - 5 mg/M³	10 mg/M³ (dust) 5 mg/M3 (welding fume)
Antimony (E/E+)	7440-36-0	.011 max.	None	D2B	No information	.5 mg/M³	.5 mg/M³
Iron	1309-37-1	.092 max.	None	D2B	5.5 gm/kg rat/intraperitoneal	Iron Oxide Dust & Fume - 10 mg/M³ Total Particulates (as Fe)	5 mg/M³ (fume)
Lead (E/E+/H)	7439-92-1	.004 max.	None	D2A	LDLo—1 gm/kg rat/intraperitoneal	.05 mg/M³	.15 mg/M³
Zinc (E/E+)	1314-13-2	.18/9.1	None	D2B	>8437 mg/kg rat/oral	Fume - 5 mg/M³ Total Dust - 15 mg/M³ Respirable Fraction - 5 mg/M³	5 mg/M³ (fume) 10 mg/M³ (STEL) 10 mg/M³ (dust)

NOTES:
All comm[illegible] small [illegible] in a[illegible] se small quantities, frequently referred to as "trace" [illegible] generally originate in the raw materials used. Typical levels of commonly involved trace or residual elements that may be encountered in steel products are provided in Annex I so that their potential hazards may be considered.
All exposure limits are based on 8-hour time-weighted average values unless stated otherwise. (STEL) denotes "Short-Term Exposure Limit", a 15-minute time-weighted average value.
* % of metallic coating is a percent of total product

HEALTH DATA

Primary Routes of Entry: Inhalation, ingestion and skin, if coated.

Effects of Overexposure:

Chronic inhalation of high concentrations of iron oxide fumes or 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.

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 phosphorus 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.

Longterm inhalation exposure to high concentrations (overexposure) 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.

Emergency and First Aid 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.

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

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

Special Protection Information:

Respiratory: 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.

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 cleaner.

Eyes: 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.

Precautions in Handling and Storage: Operations with the potential for generating high concentrations of airborne particulates should be evaluated and controlled as necessary. Avoid breathing metal fumes and/or dusts.

Spill or Leak Procedures: Not applicable to steel in solid state. Dispose in accordance with state and local regulation.

PRODUCT INFORMATION

Product/Common Name: Galvanized Sheet-HSLA Steel (Hot Dipped)

CAS No.: 65997-19-5

USS Code No.: 3H012

Reference: January, 1994

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 Conditions 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)

Regulatory Information Components

NOTE: The listing of regulations relating to a USS 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; CERCLA; SARA 302; DOT
Pb	= SARA 313 if > 1.0%; 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 and 307; SDWA; RCRA; CERCLA; DOT
Ti	= DOT
V	= SARA 313 if > 1.0%; SDWA
Zn	= SARA 313 if > 1.0%; CWA 304 and 307; SDWA; RCRA; CERCLA; SARA 110; DOT

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CWA	Clean Water Act
DOT	Department of Transportation
IARC	International Agency for Research on Cancer
NIOSH	National Institute of Occupational Safety and Health
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration
RCRA	Resource Conservation Recovery Act
SARA	Superfund Amendments and Reauthorization Act of 1986
SDWA	Safe Drinking Water Act
TDG	Transportation of Dangerous Goods Act
TSCA	Toxic Substances Control Act
WHMIS	Workplace Hazardous Materials Information System

ZRC PRODUCTS COMPANY

21 NEWPORT AVE., QUINCY, MASS. 02171

Z.R.C. COLD GALVANIZING COMPOUND (AEROSOL)

MATERIAL SAFETY DATA SHEET

FOR COATINGS, RESINS AND RELATED MATERIALS

HAZARD RATING

4 = Extreme
3 = High
2 = Moderate
1 = Slight
0 = Insignificant

Fire: 4 · Reactivity: 1 · Toxicity: 2 · Special: -

Section I

MANUFACTURER'S NAME. Z.R.C. Products Company

STREET ADDRESS: 21 Newport Ave., Quincy, Mass., 02171

TELEPHONE NO.: (617) 328 6700

DATE OF PREPARATION: March 1st 1988

PRODUCT CLASS: Esterified epoxy zinc rich metal primer

MANUFACTURER'S CODE IDENTIFICATION: 8261-10000

TRADE NAME: Z.R.C. Cold Galvanizing Compound (Aerosol)

Section II – HAZARDOUS INGREDIENTS

INGREDIENT (CAS#)	PERCENT by weight	LEL	TLV ppm	TLV (mg/M³)	PEL ppm	PEL (mg/M³)	VAPOR PRESSURE mm @ 20°C
Aerosol contents at 55+5psi			ACGIH Values		OSHA Values		
Methyl Ethyl Ketone (CAS# 78-93-3)	20	1.8	TWA 200 STEL 300	(590) (885)	TWA 200	(590)	75
Zinc (CAS# 7440-66-6)	38.4	na			TWA (Dust) 50 (Mppcf)	(15)	na
Zinc Oxide (CAS# 1314-13-2)	1.6	na	TWA (fume) TWA (dust) STEL(fume)	(5) (10) (10)	TWA (Fume)	(5)	na
Xylene (CAS# 1330-20-7)	10	1.0	TWA 100 STEL 150	(435) (655)	TWA 100	(435)	6
n-Butyl Acetate (CAS# 123-86-4)	5	1.7	TWA 150 STEL 200	(710) (950)	TWA 200	(950)	9
Propane (CAS# 74-98-6)	10	2.3	TWA 1000	(1800)	TWA 1000	(1800)	(123psia @70°F)
Isobutane (CAS# 75-28-5)	10	1.8	TWA 1000	(1800)	TWA 1000	(1800)	(45psia @70°F)

Section III – PHYSICAL DATA – FIRE AND EXPLOSION HAZARD DATA

BOILING RANGE -42.1 to 144°C

VAPOR DENSITY ☐ LIGHTER THAN AIR ☒ HEAVIER THAN AIR

EVAPORATION RATE ☐ SLOWER THAN ETHER ☒ FASTER THAN ETHER * *Propellant

PERCENT VOLATILE BY VOLUME weight 54%

WEIGHT PER GALLON 9.5

SPECIFIC GRAVITY 1.14

VAPOR PRESSURE 50 ± 10mm @ 21°C

FLASH POINT Below 20°F (-7°C) (T.O.C.)

FLAMMABILITY LIMITS IN AIR UEL 66.4% LEL 0.9%

FLAMMABILITY CLASSIFICATION DOT Consumer Commodity - Hazard Class ORM-D-AIR Flammable Class 1A. OSHA Class 29(1910-106a) OSHA Label: Extremely Fammable - RSP. CFR-16-1500.3(6) (V)

AUTO IGNITION TEMPERATURE Not Determined

SOLUBILITY IN WATER Insignificant

REACTIVITY IN WATER See Section IV

APPEARANCE AND ODOR Grey liquid with odor typical of aliphatic and aromatic hydrocarbons mixed with ketone.

EXTINGUISHING MEDIA Approved Class B Fire Extinguisher, foam or dry chemical. DO NOT USE WATER. Combustion in a limited amount of air can generate toxic carbon monoxide. Use full protective equipment and self-contained breathing apparatus for respiratory protection in fighting fires in enclosures. In a fire situation or when the material is heated it becomes a highly flammable liquid with a moderate explosion hazard. Once ignited the product will burn readily in air.

UNUSUAL FIRE AND EXPLOSION HAZARDS Keep containers closed tightly. Isolate from heat, electrical equipment, sparks and open flame. Zinc present in a finely divided form, is hazardous when atomized in air and, if sparked, an explosion is possible.. Closed containers may burst or explode when exposed to heat. Application to hot surfaces requires special precautions. During emergency conditions, overexposure to decomposition products (gaseous oxides of carbon and nitrogen) may cause a health hazard. Symptoms of these exposures may not be immediately apparent. Obtain medical attention. Heavier than air vapors may flow along surfaces to distant ignition sources and flash back. Moisture and acid contamination can result in hydrogen gas evolution causing cans to bulge with increased pressure. Cans so deformed should not be moved, opened or punctured. Call (617) 328-6700. See also Sections IV and V.

SPECIAL FIRE FIGHTING PROCEDURES DO NOT USE WATER IN ANY FORM. Water may be used to cool closed containers to prevent pressure build up and possible autoignition or explosion when exposed to extreme heat, but care should be taken to prevent water access to wet paint and spray residues. See also Section VII.

*CAS #s are identification numbers assigned by Chemical Abstract Service for reference to hazardous information on file at [illegible] 538. For health emergencies call [illegible] Center (24 Hours) at 1-213-[illegible]-2121, for transportation emergencies call CHEMTREC 1-800-424-9300.

Section IV – PHYSICAL HAZARDS

STABILITY ☒ STABLE ☐ UNSTABLE

HAZARDOUS POLYMERIZATION ☐ MAY OCCUR ☒ WILL NOT OCCUR

MATERIALS AND CONDITIONS TO AVOID This material is considered to be stable under its normal handling and storage conditions. It can react violently with strong oxidizing agents such as chlorine, oxygen, as well as water, weak and concentrated acids and alkalies. Store in dry areas away from oxidizing agents (chlorine, oxygen), all acids, alkalies and water. Avoid dusting and accumulations of spray residues.

HAZARDOUS DECOMPOSITION PRODUCTS Thermal degradation and water and alkali contact may produce hydrogen accompanied with additional risks of explosion and fire. May produce fumes of zinc oxides and the oxides of carbon and nitrogen when the product is heated to decomposition. Acid contact will produce hydrogen.

Section V – HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE 100 ppm

OSHA PERMISSABLE EXPOSURE LIMIT + Mixture. (see Section II)

PRIMARY ROUTE OF ENTRY Inhalation and skin contact

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE Respiratory, brain and central nervous system conditions, dermatitis and other skin afflictions.

SIGNS AND SYMPTOMS OF OVER-EXPOSURE

Propane is an asphyxiant. Solvents contained in the mixture are central nervous system depressants. Symptoms of overexposure include drowsiness, dizziness, headache, slurred speech, intoxication with euphoria and/or depression leading to stupor and unconsciousness. Nose and throat irritation may occur from inhalation. Skin contact may cause defatting and dermatitis. Eye contact with the liquid causes tears, burning, irritation, conjunctivitis. Ingestion will cause poisoning and may be fatal; Avoid aspiration if ingested. Do not induce vomiting. Lung contact may cause chemical pneumonitis. During welding and burning operations hazardous decomposition products may be evolved from the dried film. These may include but not be limited to zinc oxides as well as the gaseous oxides of carbon and nitrogen. Excessive inhalation of these fumes may produce symptoms known as fume fever and "zinc shakes" among other effects. Consult physician. b.) Chronic: Reports have associated repeated and prolonged overexposure to solvents with permanent damage to brain and central nervous system Note: Minor embryotoxic/fetotoxic effects have been reported in one unconfirmed study of methyl ethyl ketone as being observed in laboratory rats exposed to over 1000 ppm of the pure solvent for most of the gestation period by the inhalation route (Sx the OSHA PEL/TWA).

EMERGENCY AND FIRST AID PROCEDURES

1.) Inhalation: Remove to fresh air. Keep warm and quiet. Give artificial respiration if required. Get medical assistance. 2.) Eyes: Wash eyes immediately with large amounts of water for at least 15 minutes. Take to physician for medical attention. 3.) Skin: Wash contact area promptly with soap and water. Promptly remove paint wet clothing. Consult physician if irritation persists. 4.) Ingestion: Do not induce vomiting without medical advice. Consult a physician, emergency room or Poison Center immediately. Observe all rules of good hygiene during and after use. Wash thoroughly before smoking or eating.

Section VI – SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION In outdoor or open areas with unrestricted ventilation, use approved high efficiency mechanical respirator to remove particles of overspray during spray application. In areas of restricted ventilation, use high efficiency chemical/mechanical filters designed to remove a combination of particulates and vapor. In confined areas, use approved air line type respirators or hoods.

VENTILATION Work place areas require exhaust ventilation in accordance with OSHA regulation 29 CFR Part 1910 (1070) to maintain vapor levels below the TLV (especially, during spraying, misting, or heating). Use an approved high efficiency respirator of the full face canister type (for limited time and concentrations), air supplied type of self-contained type respirators (for extended exposures involving high or unknown vapor concentrations or for non-routine or emergency conditions). Exhaust levels should be maintained at least 100 lfm.

PROTECTIVE GLOVES Neoprene gloves and aprons should be used to prevent prolonged or repeated skin contact. Use protective creams when skin contact is likely.

EYE PROTECTION Safety goggles with unperforated side shields or face shield should be used where splashing of solvent into eyes is possible. An eye wash fountain should also be available in areas where splashing is probable. When large amounts of material are used a safety shower should be available.

OTHER PROTECTIVE EQUIPMENT Ventilation equipment should be explosion-proof, and any tools used in the area should be of the non-sparking type. Wear chemical resistant boots. Remove and wash or discard contaminated clothing.

Section VII – SPECIAL PRECAUTIONS – SPILL OR LEAK PROCEDURES

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE This extremely flammable liquid should be stored in a cool, clean, well ventilated fire resistant storage room or in a solvent storage cabinet that meets OSHA requirements. Do not store in direct sunlight. Store large quantities only in buildings in compliance with OSHA 1910.105. Areas of use and storage for this material should have a good ventilation and all sources of open flame and high heat should be excluded. Prohibit smoking in these areas. Ensure sufficient ventilation to prevent accumulation of heavy vapors in low lying areas or sumps. Avoid prolonged contact with skin. Do not puncture, drag or slide container. Do not store above 120°F.

OTHER PRECAUTIONS Any deformed cans should not be moved, opened or punctured., call (617) 328-6700. Do not take internally. Keep away from children. Empty container may contain extremely flammable residues and explode if heated.

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED For massive spills, evacuate the area. For all spills eliminate ignition sources. Dike and contain spills with dry inert materials (sand, earth, etc.). Eliminate all sources of moisture, and do not use water in clean up operations. Recover as much of the free liquid as possible for disposal, and use an absorbent to pick up the residue. Avoid discharging paint directly into a sewer or surface waters. Do not flush spills with water. Use non-sparking tools only. Spilled material may be slippery on floors.

WASTE DISPOSAL METHOD Dispose of the absorbed material or the free waste liquid in dry containers. Dispose of all materials including empty cans according to local, state and federal regulations. DO NOT INCINERATE, do not flush to sewers. Containers may explode if heated even when empty. It is recommended that solid waste be landfilled only at approved hazardous disposal sites using approved contractors.

DISCLAIMER: While the data and suggestions contained herein are based on information we believe to be reliable [illegible] furnis[illegible] only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers.

THIS PRODUCT IS A MIXTURE, AND MSDS FILES [illegible]

NOTICE: JUDGEMENT BASED ON INDIRECT TEST DATA

NFPA Rating* Health 2 Flammability 2 Reactivity 0 Special 0

HMIS Rating* Health 2 Flammability 2 Reactivity 0 Personal Protection B

Material Safety Data Sheet

This MSDS complies with OSHA's Hazard Communication Standard 29 CFR 1910. 1200 and OSHA FORM 174.

DOT HAZARD CLASSIFICATION:* ORM-D

Identity (Trade Name As Used On Label) MISTY GALVANIZING SPRAY 306

MSDS Number* 306-5

MANUFACTURER'S NAME: AMREP, INC.

ADDRESS: 990 Industrial Park Drive, Marietta, Georgia 30062

CHEM TREC: 1-800-424-9300

Phone Number (For Information): (404) 422-2071

Date Prepared: 5/1/87

Prepared By*: LGZ/ RD

Emergency Phone Number: (404) 422-2071

NOTE: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

SECTION 1 - MATERIAL IDENTIFICATION AND INFORMATION

COMPONENTS — Chemical Name & Common Names (Hazardous Components 1% or greater; Carcinogens 0.1% or greater)	CAS Number	APPROX. % (wt)*	OSHA PEL (ppm)	ACGIH TLV (ppm)	CARCINOGEN REFERENCE SOURCE **
Xylene	1330-20-7	4	100	100	d
Methylene chloride	75-09-2	65	100	100	e
Propane	74-98-6	15	1000	1000	d
Zinc dust and resin binder	7440-66-6	16	200	200	d
Non-Hazardous Ingredients					
TOTAL		100			

SECTION 2 - PHYSICAL / CHEMICAL CHARACTERISTICS

Boiling Point	NA	Specific Gravity (H_2O = 1) Concentrate Only =	1.428
Vapor Pressure PSIG @ 70°F (Aerosols)	Max. 60	Vapor Pressure (Non-Aerosols) (mm Hg and Temperature)	NA
Vapor Density (Air = 1)	NE	Evaporation Rate (_____ = 1)	NE
Solubility in Water	Insoluble	Water Reactive	No
Appearance and Odor	Gray zinc coating chlorinated solvent odor.		

SECTION 3 - FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY as per USA FLAME PROJECTION TEST (AEROSOLS)	Auto-Ignition Temperature	Flammability Limits in Air % by Volume	LEL	UEL
NON-FLAMMABLE	NE		NE	NE

Flash Point and Method Used (Non-Aerosols): NA

Extinguisher Media: Foam, dry chemical, carbon dioxide

Special Fire Fighting Procedures: Self contained breathing apparatus

Unusual Fire and Explosion Hazards: Do not expose aerosols to temperatures above 130° F or the container may rupture.

FIELD APPLIED ZINC COATING TOUCH-UP

*Optional

** Chemical Listed as Carcinogen or Potential Carcinogen: NTP; IARC Monograph; OSHA; Not Listed; Animal Data Only

SECTION 4 - REACTIVITY HAZARD DATA

306-5

STABILITY	Conditions To Avoid
X Stable	Open flame, welding arcs, heat
☐ Unstable	

Incompatability (Materials to Avoid): Alkalis, oxidizing materials, amines, potassium, magnesium and sodium.

Hazardous Decomposition Products: HCl, CO, CO_2, small amounts of phosgene and chlorine.

HAZARDOUS POLYMERIZATION	Conditions To Avoid
☐ May occur	
☒ Will Not Occur	None Known

SECTION 5 - HEALTH HAZARD DATA

PRIMARY ROUTES OF ENTRY: ☒ Inhalation ☐ Ingestion ☐ Not Hazardous ☐ Skin Absorption ☐ Eye

ACUTE EFFECTS

Inhalation: Excessive inhalation of vapors can be harmful and may cause headache, dizziness, asphyxia, anesthetic effects and possible unconsciousness.

Eye Contact: Mild irritation

Skin Contact: Mild irritation due to defatting of skin.

Ingestion: Possible chemical pneumonitis if aspirated into lungs. Nausea.

CHRONIC EFFECTS (Effects due to excessive exposure to the raw materials of this mixture) May cause neural dysfunction, elevated carboxyhemoglobin levels & salivary gland tumors, liver abnormalities.

Medical Conditions Generally Aggravated by Exposure: May aggravate existing eye, skin, or upper respiratory conditions.

EMERGENCY FIRST AID PROCEDURES -

Eye Contact: Flush with water for 15 minutes. If irritated, see physician.

Skin Contact: Wash with soap and water. If irritated, see physician.

Inhalation: Remove to fresh air. Resuscitate if necessary. Get medical aid.

Ingestion: DO NOT INDUCE VOMITING. CALL PHYSICIAN.

SECTION 6 - CONTROL AND PROTECTIVE MEASURES

Respiratory Protection (Specify Type): If vapor conc. exceeds TLV, use respirator approved by U.S. Bureau of Mines for organic vapor.

Protective Gloves: Rubber gloves

Eye Protection: Safety glasses recommended

VENTILATION REQUIREMENTS: Adequate ventilation to keep vapor concentration below TLV.

Other Protective Clothing and Equipment: None

Hygienic Work Practices: Wash with soap and water before handling food. Remove contaminated clothing.

SECTION 7 - PRECAUTIONS FOR SAFE HANDLING AND USE / LEAK PROCEDURES

Steps to be Taken If Material is Spilled Or Released: Absorb with suitable medium. Incinerate or landfill according to local, state, or federal regulations. Do not flush to sewer.

Waste Disposal Methods: Aerosol cans when vented to atmospheric pressure through normal use, pose no disposal hazard.

Precautions to be Taken in Handling and Storage: Do not puncture or incinerate containers. Do not store at temperatures above 130°F.

Other Precautions and / or Special Hazards: Avoid food contamination. KEEP OUT OF REACH OF CHILDREN. Avoid breathing vapors. Remove ignition sources.

We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty of any kind, expressed or implied.

FIELD APPLIED ZINC COATING TOUCH-UP

PROTECTIVE COATINGS USED ON THE BUILDING FRAMEWORK STEELS

1. Standard Red Oxide Primer - Hand Sprayed or field applied touch-up.

2. Hot Dipped Galvanized applied by Galvanizer

3. Standard Red Oxide Primer on Hot-Rolled Coils

4. Hot Dipped Galvanized on Secondary Structural Coils.

5. Galvanized surface field touch-up coatings (2)

MATERIAL SAFETY DATA SHEET

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : H.S.RED OXIDE PRIMER
IDENTIFICATION NUMBER: QP557
PRODUCT USE/CLASS : High solids primer

DATE PRINTED: 10/16/98

SUPPLIER:
Trinity Coatings Company
1800 Park Place
Fort Worth, TX 76110

1-800-777-5683
8:00am - 5:00pm CST

MANUFACTURER:
Trinity Coatings Company
1800 Park Place
Fort Worth, TX 76110

CHEMTREC: 1-800-424-9300
24 Hour Day for Transportation

PREPARER: THOMAS JAMES, PHONE: 817-926-6811, PREPARE DATE: 04/20/98

SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

ITEM	CHEMICAL NAME	CAS NUMBER	WT/WT % LESS THAN
01	VM & P Naphtha	8032-32-4	30.0 %
02	Zinc Phosphate	7779-90-0	5.0 %
03	Calcium carbonate	1317-65-3	40.0 %

EXPOSURE LIMITS

ITEM	ACGIH TLV-TWA	ACGIH TLV-STEL	OSHA PEL-TWA	OSHA PEL-CEILING	COMPANY TLV-TWA	SKIN
01	300 ppm	N.E.	300 ppm		N.E.	NO
02	N.E.	N.E.	N.E.		N.E.	NO
03	10 mg/m3	N.E.	15 mg/m3		N.E.	NO

(See Section 16 for abbreviation legend)

SECTION 3 - HAZARDS IDENTIFICATION

*** EMERGENCY OVERVIEW ***: May be harmful or fatal if swallowed or inhaled.

EFFECTS OF OVEREXPOSURE - EYE CONTACT: Liquid, aerosols and vapors of this product are irritating and can cause pain, tearing, reddening and swelling accompanied by a stinging sensation and/or a feeling like that of fine dust in the eyes. CAUSES EYE IRRITATION.

EFFECTS OF OVEREXPOSURE - SKIN CONTACT: Prolonged or repeated contact can result in defatting and drying of the skin which may result in skin

(Continued on Page 2)

SECTION 3 - HAZARDS IDENTIFICATION

irritation and dermatitis (rash).

EFFECTS OF OVEREXPOSURE - INHALATION: HARMFUL IF INHALED. MAY AFFECT THE BRAIN OR NERVOUS SYSTEM CAUSING DIZZINESS, HEADACHE OR NAUSEA.

EFFECTS OF OVEREXPOSURE - INGESTION: This material may be harmful or fatal if swallowed.

EFFECTS OF OVEREXPOSURE - CHRONIC HAZARDS: Reports have associated repeated and prolonged occupationnal overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.

PRIMARY ROUTE(S) OF ENTRY: SKIN CONTACT INHALATION INGESTION EYE CONTACT

SECTION 4 - FIRST AID MEASURES

FIRST AID - EYE CONTACT: In case of eye contact, flush immediately with plenty of water for at least 15 minutes and get medical attention.

FIRST AID - SKIN CONTACT: Remove contaminated clothing. Wash skin with soap and water. Get medical attention if irritation develops or persists.

FIRST AID - INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention.

FIRST AID - INGESTION: Get medical attention immediately.

SECTION 5 - FIRE FIGHTING MEASURES

FLASH POINT: 55 F

LOWER EXPLOSIVE LIMIT: 1.0 %
UPPER EXPLOSIVE LIMIT: 7.0 %

AUTOIGNITION TEMPERATURE: Unknown

EXTINGUISHING MEDIA: ALCOHOL FOAM CO2 DRY CHEMICAL FOAM WATER FOG

UNUSUAL FIRE AND EXPLOSION HAZARDS: "Empty" containers retain product residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Empty drums should be completely drained, properly bunged and promptly returned to a drum reconditioner, or properly disposed of.

SPECIAL FIREFIGHTING PROCEDURES: Containers can build up pressure if exposed to heat (fire). Water runoff can cause environmental damage. Dike

(Continued on Page 3)

SECTION 5 - FIRE FIGHTING MEASURES

and collect water used to fight fire. Water may be ineffective. Water should be used to cool containers exposed to fire.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container.

SECTION 7 - HANDLING AND STORAGE

HANDLING: Wash thoroughly after handling. Avoid contact with eyes, skin and clothing.

STORAGE: Close container after each use. Keep away from heat, sparks and flame.

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Local exhaust ventilation may be necessary to control any air contaminants to within their TLVs during the use of this product. Use explosion-proof ventilation equipment.

RESPIRATORY PROTECTION: Use only with adequate ventilation. A NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection. A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

SKIN PROTECTION: Where contact is likely, wear chemical resistant gloves.

EYE PROTECTION: Wear safety glasses with side shields (or goggles) and a face shield.

OTHER PROTECTIVE EQUIPMENT: Use approved bonding and grounding procedures.

HYGIENIC PRACTICES: Wash hands before eating. Remove contaminated clothing and wash before reuse. Use only in a well ventilated area. Follow all MSDS/label precautions even after container is emptied because they may retain product residues. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Avoid prolonged or repeated contact with skin. Avoid breathing vapors from heated material. Avoid contact with eyes, skin, and clothing.

(Continued on Page 4)

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

BOILING RANGE	: 247 - 282 F	VAPOR DENSITY	: Is heavier than air
ODOR	: MILD HYDROCARBON	EVAPORATION RATE	: Is slower than Butyl Acetate
APPEARANCE	: Brown red liquid		
FREEZE POINT	:	SPECIFIC GRAVITY	: 1.3262
PHYSICAL STATE	: Liquid	VISCOSITY	: Call
SOLUBILITY IN H2O	: Insoluble	pH @ 0.0	:
TEMP. TESTED AT	: 78 F		

(See Section 16 for abbreviation legend)

SECTION 10 - STABILITY AND REACTIVITY

CONDITIONS TO AVOID: Do not store near oxidizers.

INCOMPATIBILITY: No Information.

HAZARDOUS DECOMPOSITION PRODUCTS: Hazardous decomposition products may form such as Carbon Monoxide, Carbon Dioxide, Smoke, Oxides of Nitrogen and variousHydrocarbons.

HAZARDOUS POLYMERIZATION: Will not occur under normal conditions.

STABILITY: This product is stable under normal storage conditions.

SECTION 13 - DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: In case of spillage absorb with enert material and dispose of in accordance with applicable regulation. This material meets RCRA's characteristic definition of ignitability and should be disposed of in accordance with Local, State, and Federal regulations. Do not incinerate closed containers.

SECTION 14 - TRANSPORTATION INFORMATION

No transportation information is available.

SECTION 15 - REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS: AS FOLLOWS -

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200)

(Continued on Page 5)

SECTION 15 - REGULATORY INFORMATION

CERCLA - SARA HAZARD CATEGORY:
This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

IMMEDIATE HEALTH HAZARD CHRONIC HEALTH HAZARD FIRE HAZARD

SARA SECTION 313:
This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

---------- CHEMICAL NAME ----------	CAS NUMBER	WT/WT %
Zinc Phosphate	7779-90-0	2 %

U.S. STATE REGULATIONS: AS FOLLOWS -

NEW JERSEY RIGHT-TO-KNOW:
The following materials are non-hazardous, but are among the top five components in this product:

---------- CHEMICAL NAME ----------	CAS NUMBER
HYDROCARBON RESIN	

PENNSYLVANIA RIGHT-TO-KNOW:
The following non-hazardous ingredients are present in the product at greater than 3%:

---------- CHEMICAL NAME ----------	CAS NUMBER
HYDROCARBON RESIN	

CALIFORNIA PROPOSITION 65:
WARNING: The chemical(s) noted below and contained in this product, are known to the state of California to cause cancer, birth defects or other reproductive harm:

---------- CHEMICAL NAME ----------	CAS NUMBER
No Proposition 65 chemicals exist in this product.	

INTERNATIONAL REGULATIONS: AS FOLLOWS -

CANADIAN WHMIS: This MSDS has been prepared in compliance with Controlled Product Regulations except for use of the 16 headings.

CANADIAN WHMIS CLASS: No information available.

SECTION 16 - OTHER INFORMATION

HMIS RATINGS - HEALTH: 2 FLAMMABILITY: 3 REACTIVITY: 0

PREVIOUS MSDS REVISION DATE: 08/19/97

VOCS WITHOUT WATER: 3.27 lbs/gal, 392 grams/ltr

VOCS AS PACKAGED WITH WATER: 3.27 lbs/gal, 392 grams/ltr

SECTION 16 - OTHER INFORMATION

LEGEND: N.A. - Not Applicable, N.E. - Not Established,
N.D. - Not Determined

The information contained on this MSDS has been checked and should be accurate. However, it is the responsibility of the user to comply with all Federal, State, and Local laws and regulations.

<END OF MSDS>

JONES BLAIR PAINT COMPANY

16

MATERIAL SAFETY DATA SHEET
FOR COATINGS, RESINS, AND RELATED MATERIALS.
CONFIDENTIAL TRADE SECRET OF JONES BLAIR COMPANY

MANUFACTURERS NAME
JONES BLAIR PAINT COMPANY
2728 EMPIRE CENTRAL
DALLAS, TX 75235

EMERGENCY TELEPHONE NO.
(1-800-424-9300)

DATE OF PREPARATION
8/30/96
REPLACES MSDS DATED 6/03/96

INFORMATION TELEPHONE NO.
(214)-353-1600

H996-050

SECTION I - PRODUCT IDENTIFICATION

PRODUCT NUMBER 12128

PRODUCT NAME GUARDIAN GUARDIAN W/R BUTLER RED

PRODUCT CLASS POLYESTER BAKING ENAMEL

SECTION II - HAZARDOUS/SARA 313 INGREDIENTS

INGREDIENT	SEC 313 OF SARA	PERCENT BY WT	HAPS LIST	CAS #	(MM HG) VAPOR PRESSURE
BUTOXY ETHANOL	Y	15-25	Y	111-76-2	.88
TRIETHANOLAMINE	N	<5	N	102-71-6	N/A
STRONTIUM CHROMATE	Y	4.820	Y	7789-06-2	N/A

OCCUPATIONAL EXPOSURE LIMITS (TLV)

TWA=TIME WEIGHTED AVG.
STE=SHORT TERM EXPOSURE
S=SKIN ABSORPTION

	TWA ACGIH (PPM)	STE ACGIH (PPM)	TWA OSHA (PPM)	STE OSHA (PPM)	CEILING OSHA (PPM)
BUTOXY ETHANOL	25.000 S	N/A	25.000 S	N/A	N/A
TRIETHANOLAMINE	5.000 MG/M3	N/A	.N/A	N/A	N/A
STRONTIUM CHROMATE	.050 MG/M3	N/A	.N/A	N/A	.10 MG/M3

SECTION III - PHYSICAL DATA

BOILING RANGE(F) 212.00 342.00 VAPOR DENSITY - HEAVIER THAN AIR
VOC (LB/GAL) 2.36 * SEE SECTION X *
EVAPORATION RATE - SLOWER THAN ETHER % VOLATILE VOLUME 44 WT/GAL 10.76

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY OSHA CLASS IIIB FLASH POINT 240 F LEL 1.10

CLASSIFICATION DOT SURFACE: NOT REGULATED
AIR: SEE SECTION X.

RECEIVED
SEP 10 1996
BY:

RED OXIDE PRIMER ON HOT-ROLLED COILS

EXTINGUISHING MEDIA: FOAM, CO2, DRY CHEMICAL, OR SAND

UNUSUAL FIRE AND EXPLOSION HAZARDS - CONTAINERS MAY RUPTURE DUE TO VERY HIGH TEMPERATURE INDUCED PRESSURE.

SPECIAL FIREFIGHTING PROCEDURES - GENERAL PROCEDURES RECOMMENDED. AVOID USE OF WATER.

SECTION V - HEALTH HAZARD DATA

PRIMARY ROUTES OF EXPOSURE - INHALATION (X) SKIN ABSORPTION (X) INGESTION (X)

EFFECTS OF OVEREXPOSURE - (SHORT TERM, LONG TERM, CUMULATIVE)

ACUTE(SHORT TERM): EXCESSIVE INHALATION MAY RESULT IN HEADACHES, NAUSEA, EYE AND LUNG IRRITATION, AND NARCOSIS.

CHRONIC(LONG TERM): REPORTS HAVE ASSOCIATED REPEATED AND PROLONGED OCCUPATIONAL OVEREXPOSURE TO SOLVENTS WITH PERMANENT BRAIN AND NERVOUS SYSTEM DAMAGE.

CONTAINS BUTOXY ETHANOL: EXPOSURE MAY CAUSE RED BLOOD CELL DAMAGE AND POSSIBLE LIVER AND KIDNEY DAMAGE.

CONTAINS A CHROMIUM VI (CHROMATE) COMPOUND: CHROMATE COMPOUNDS ARE CONSIDERED CARCINOGENIC (IARC - NTP), PARTICULARLY FROM RESPIRABLE DUST. OBSERVE PRECAUTIONS IN SECTION VIII. WHEN USING SPRAY APPLICATION, RESPIRATORS MUST REDUCE AIRBORNE CHROMATE AS CHROMIUM BELOW 0.1 MICROGRAMS/CUBIC METER (PEL - CEILING).

CONTAINS SOLID MATERIALS: WHEN SUBJECTED TO OPERATIONS SUCH AS MILLING, SAWING, OR SANDING OF THE CURED COATING, THE RESULTANT DUST CONSTITUTES A HAZARDOUS DUST OF THE NON-VOLATILE MATERIALS NOTED IN SECTION II. SEE PRECAUTION IN SECTION VIII.

EMERGENCY AND FIRST AID PROCEDURES -
IN CASE OF EYE CONTACT, FLUSH EYES WITH EYE-WASH OR WATER FOR 15 MINUTES. IF EYE IRRITATION PERSISTS, GET MEDICAL ATTENTION PROMPTLY. IN CASE OF SKIN CONTACT, WIPE MATERIAL OFF AND WASH CONTACTED AREA. IF INGESTED, DO NOT INDUCE VOMITING. GET PATIENT TO FRESH AIR AND CONSULT PHYSICIAN. PROMPTLY REMOVE CONTAMINATED CLOTHING AND WASH BEFORE REUSE.

SECTION VI - REACTIVITY DATA

ALL PRECAUTIONS DETAILED IN SECTION VIII MUST BE OBSERVED.

STABILITY - STABLE

HAZARDOUS POLYMERIZATION WILL NOT OCCUR

HAZARDOUS DECOMPOSITION PRODUCTS - CARBON DIOXIDE, CARBON MONOXIDE AND MIXED HYDROCARBONS. SOME NITROGEN CONTAINING HYDROCARBONS MAY BE PRESENT.

CONDITIONS TO AVOID - HEAT AND OPEN FLAMES, SPARKS

INCOMPATABILITY (MATERIALS TO AVOID) - STRONG OXIDIZING MATERIALS

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED -
ELIMINATE IGNITION SOURCES. STOP SPILL OR LEAK AT ONC

DIKE, ETC., & COVER WITH INERT ABSORBANT MATERIAL. SHOVEL OR SWEEP INTO DISPOSABLE CONTAINER.
CONTAINS A CHEMICAL SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF SARA.

WASTE DISPOSAL METHOD - SHOVEL INTO DRUMS. INCINERATE AS LOCAL LAWS PERMIT.

SECTION VIII - SAFE HANDLING AND USE INFORMATION

RESPIRATORY PROTECTION - PROVIDE ADEQUATE VENTILATION (SEE BELOW). PROVIDE ADEQUATE VENTILATION FOR CONFINED AREAS OR WHEN USING SPRAY APPLICATION. WEAR APPROPRIATE, PROPERLY FITTED RESPIRATOR (NIOSH/MSHA APPROVED) DURING AND AFTER APPLICATION UNLESS AIR MONITORING DEMONSTRATES VAPOR/MIST LEVELS BELOW APPLICABLE LIMITS. FOLLOW RESPIRATOR MANUFACTURER'S DIRECTIONS FOR RESPIRATOR USE.
VENTILATION - LOCAL EXHAUST PREFERABLE TO NATURAL DILUTION.

PROTECTIVE GLOVES - RECOMMENDED (MUST NOT DISSOLVE IN SOLVENTS)

EYE PROTECTION - FACE SHIELD OR GOGGLES. DO NOT WEAR CONTACT LENSES WHEN WORKING WITH LIQUID PAINT PRODUCTS OR SOLVENTS.
OTHER PROTECTIVE EQUIPMENT - NONE UNLESS LISTED BELOW.
USE DUST RESPIRATOR WHEN SANDING, MILLING, OR SAWING ANY ITEMS PAINTED WITH THIS PRODUCT.

HYGIENIC PRACTICES: WASH HANDS THROUGHLY WITH SOAP & WATER AFTER USE.
WHEN USING SPRAY APPLICATION, RESPIRATORS MUST REDUCE AIRBORNE CHROMATE AS CHROMIUM BELOW 10 MICROGRAMS/CUBIC METER (PEL)-TIME WEIGHTED AVERAGE.

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING - KEEP AWAY FROM SPARKS, HEAT, AND OPEN FLAMES.

OTHER PRECAUTIONS - DO NOT TAKE INTERNALLY. AVOID PROLONGED CONTACT OR INHALATION.

SECTION X - REGULATORY INFORMATION

ALL INGREDIENTS USED IN THE MANUFACTURE OF THIS PRODUCT ARE LISTED ON THE EPA/TSCA INVENTORY OF CHEMICAL SUBSTANCES.
SURFACE D.O.T. INFORMATION: (BASED UPON THE REQUIREMENTS OF 49CFR171-180 AS REVISED BY HM-181).
PROPER SHIPPING NAME - PAINT,
AIR D.O.T. INFORMATION: (BASED UPON THE REQUIREMENTS OF 49CFR171-180 AS REVISED BY HM-181). COMBUSTIBLE LIQUID NOT REGULATED UN1993.
PROPER SHIPPING NAME - PAINT,
GUIDE BOOK NUMBER - 26.

THIS PRODUCT IS NOT A MARINE POLLUTANT. THIS PRODUCT IS NOT MANUFACTURED WITH AND DOES NOT CONTAIN OZONE DEPLETING SUBSTANCES.

MANDATORY IN THE STATE OF CALIFORNIA ONLY.
THIS PRODUCT CONTAINS A CHEMICAL OR CHEMICALS WHICH APPEAR ON THE CALIFORNIA SAFE DRINKING WATER AND TOXICS ENFORCEMENT ACT LIST (PROPOSITION 65). WARNING THAT SUCH LISTED PRODUCTS ARE

THE STATE OF CALIFORNIA AS EITHER CANCER CAUSING AND/OR REPRODUCTIVE TOXINS IS REQUIRED BY PROPOSITION 65.

INFORMATION RFGARDING THE SARA SECTION 313 STATUS AND EXPOSURE LIMITS OF INGREDIENTS USED T0 MANUFACTURE THIS PRODUCT MAY BE FOUND IN SECTION II OF THIS DOCUMENT.

THIS PRODUCT CONTAINS (CR+6) COMPOUND
WHICH IS/ARE THE SUBJECT OF A TSCA SECTION 4 TEST RULE, A SECTION 5 SNUR OR A SECTION 6 RISK MANAGEMENT RULE. EXPORT OF SUCH SUBJECT MATERIALS REQUIRES THAT A SECTION 12(B) NOTICE BE GIVEN TO EPA BY EXPORTER. (SEE 40 CFR CH. 1, PART 707, SUBPART D, SECTIONS 707.60, 707.65 AND 707.67).

* VOC IN LB/GAL IS CALCULATED EXCLUDING WATER PER EPA METHOD 24. IF WATER IS PRESENT, THIS VALUE WILL NOT EXPRESS ACTUAL VOC, WHICH IS NEEDED FOR PURPOSES OF EMISSIONS COMPLIANCE CALCULATIONS.

ACTUAL VOC = VOC (LB/GAL OF SOLIDS) X VOLUME SOLIDS

FOR THIS PRODUCT:

VOC (LB/GAL OF SOLIDS) = 3.48 *

ACTUAL VOC = 1.95 **

NOTICE: THE DATA AND RECOMMENDATIONS PRESENTED HEREIN ARE BASED UPON OUR RESEARCH AND THE RESEARCH OF OTHERS AND ARE BELIEVED TO BE ACCURATE. NO GUARANTEE OF THEIR ACCURACY IS MADE, HOWEVER; AND THE PRODUCTS DISCUSSED ARE DISTRIBUTED WITHOUT WARRANTY (EXPRESSED OR IMPLIED)--AND THE PERSON RECEIVING THEM SHALL MAKE HIS OWN DETERMINATION OF THE SUITABILITY THEREOF FOR HIS PARTICULAR PURPOSE.

MATERIAL SAFETY DATA SHEET

SECTION 1 - GENERAL INFORMATION

NAME: GALVANIZED STEEL

MANUFACTURER:

Metalplate Galvanizing, L.P.
757 44th Street
Post Office Box 966
Birmingham, Alabama 35201
205-595-1106

Metalplate Galvanizing, L.P.
1120 39th Street, North
Post Office Box 966
Birmingham, Alabama 35201
205-595-7103

Metalplate Galvanizing, L.P.
10625 Needham Street
Houston, Texas 77013
713-671-2454

Metalplate Galvanizing, L.P.
500 Selig Drive, SW
Post Office Box 43402
Atlanta, Georgia 30336
404-691-0600

Metalplate Galvanizing, L.P.
7123 Moncrief Road, West
Jacksonville, Florida 32219
904-768-6330

EMERGENCY PHONE NUMBERS:

205-595-1106 (AL)
205-595-7103 (AL)
713-671-2454 (TX)

404-691-0600 (GA)
904-768-6330 (FL)

TRADE NAME AND SYNONYMS: Galvanized Metal

CHEMICAL FAMILY: Non-ferrous Heavy Metal

FORMULA: Alloy of zinc with steel

DOT HAZARD CLASS: N/A **UN NO.:** NAIF* **NA NO.:** NAIF N/A

*Not applicable information found.

SARA Section 313: This product is subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act and 40 CFR 372. The materials underlined below may be present in quantities above the applicable deminimis concentrations and are listed as Toxic Chemicals in 40 CFR 372.65.

ISSUE DATE: 09/01/91 REVISION DATE: 10/12/98

SECTION II - INGREDIENTS

Material	CAS No.	% Range*
Zinc	7440-66-6	98-99.99
Lead	7439-92-1	1.4 max
Aluminum	7429-90-5	0.55 max
Cadmium	7440-43-9	0.20 max
Nickel	7440-02-0	0.50 max

* Concentrations in zinc layer

SECTION III - PHYSICAL DATA

Boiling Point (760 MM HG):	1665 F
Specific Gravity:	7.12
Vapor Density (Air = 1)	N/A
Percent Volatile by Volume (%):	N/A
Appearance and Odor	Silver-white, or bluish-white metal
Melting Point:	788F (Zinc)
Evaporation Rate:	N/A
Solubility in Water:	N/A
Vapor Press @ 909 F:	0.13 kPa

SECTION IV - FIRE AND EXPLOSION DATA

Galvanized steel does not introduce a serious fire hazard in sheets, casting, or other massive forms because of the difficulty of ignition, however once the zinc portion ignites (above 1665 F), large pieces burn vigorously.

Flash Point: (method used): N/A

Flammable Limits: LEL: N/A
UEL: N/A

NFPA FIRE RATING

HEALTH	0
FLAMMABILITY	0
REACTIVITY	0

Extinguishing Media: Smother and cool with a suitable dry extinguishing agent (class D fires) such as dry powder (Ansul Met-L-X), zinc oxide or dry sand. Water should not be used, however, whenever it's use is necessary to cool exposures, extreme caution should be taken to prevent water from making contact with molten zinc or burning zinc products.

Special Fire Fighting Procedures: Use NIOSH/MSHA approved self-contained breathing apparatus.

Unusual Fire and Explosion Hazards: Heating of metal beyond boiling Point results in evolution of zinc vapors, which immediately reacts with air to form zinc oxide fume.

SECTION V - HEALTH HAZARD DATA

Material	Form	OSHA-PEL TWA (AL) mg/M3	OSHA-PEL TWA mg/M3	OSHA-PEL STEL mg/M3	NIOSH - REL TWA mg/M3	NIOSH - REL STEL mg/M3
Zinc	Dust	—	—	—	—	—
	Oxide Fume	—	5	10	5	—
Cadmium		0.0025	0.005		Ca	—
Lead			0.05	—	0.15	—
Aluminum	Oxide Fume		10.0	—	—	—
Nickel	Oxide Fume		1.0	—	—	—

AL	Action Level
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
TWA	Time Weighted Average - 8 hours
STEL	Short Term Exposure Limit - 15 minutes
mg/M3	milligrams per cubic meter of air
NIOSH	National Institute for Occupational Safety and Health
REL	Recommended Exposure Limit
Ca	NIOSH potential occupational carcinogen, NIOSH usually recommends occupational exposure to carcinogens be limited to the lowest feasible concentration

ROUTES OF ENTRY

Primary: Inhalation, if material has been heated above the boiling point, driving off zinc fume.

Secondary: Ingestion of dusts.

EFFECTS OF SHORT TERM OVEREXPOSURE:

ZINC: Inhalation of high levels of zinc vapor (zinc oxide fumes) may result in tightness of chest, metallic taste, cough, dizziness, fever, chills, headache, nausea, and dry throat. Overexposure may produce symptoms known as metal fume fever or "zinc shakes"; and acute, self-limiting condition without recognized complications. Symptoms of metal fume fever include chills, fever, muscular pain, nausea and vomiting.

LEAD: Exposure to high concentrations of lead may cause headache, nausea, vomiting, abdominal spasms, fatigue, sleep disturbances, weight loss, anemia, and paint in legs, arms and joints.

CADMIUM: exposure to high concentrations of cadmium may cause sore throat and nasal tissue, cough, and metallic taste followed by malaise, stiffness, muscular pain and shortness of breath.

ALUMINUM: Dust may irritate throat and nose.

NICKEL: Exposure may cause dermatitis. Ingestion may cause nausea, vomiting, headaches, dizziness, and gastrointestinal irritation.

EMERGENCY AND FIRST AID PROCEDURES: Call a physician. If swallowed, if conscious, immediately induce vomiting. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes.

EFFECTS OF LONG TERM EXPOSURE:

ZINC: Chronic exposure to zinc may cause respiratory irritation with nasopharyngitis and laryngitis.

LEAD: Prolonged exposure to lead may produce many of the symptoms of short-term exposure and may also cause central nervous system damage, gastrointestinal disturbances, anemia, and weight drop. Symptoms of hypertension, hallucinations, convulsions, and delirium. Kidney dysfunction and possible injury has also been associated with chronic lead poisoning.

Chronic overexposure to lead has been implicated as a causative agent for the impairment of male and female reproductive organs, but there is not present substantiation of this.

Pregnant women should be protected from excessive exposure. Lead can cross the placental barrier and it is reported that infants with neurological disorder shave been born to women who have experienced excessive exposure.

CADMIUM: The principal long-term effect of cadmium exposure involves the lungs, kidneys, and bones. The kidneys are the principal target organ of low-dose exposure. When the exposure is to newly generated cadmium fume, the lungs may be a primary target organ. Cadmium has also been postulated to adversely affect other organ systems adversely such as the liver and cardiovascular system. In addition, there is evidence that cadmium exposure increases rates of lung carcinomas.

ALUMINUM: Dust inhalation may cause tightness and pain in chest, coughing, and difficulty in breathing. Excessive inhalation of dust is irritating and may be severely damaging to respiratory passages and/or lungs. Contact with skin or eyes may cause irritation.

NICKEL: Exposure of nickel containing dusts has been associated with coughing and shortness of breath. Chronic changes include increased susceptibility to pulmonary edema and interstitial fibrosis. Nickel metal and its alloys are considered to be of low toxicity for both acute and chronic ingestion exposure. Repeated or prolonged overexposure to metallic nickel can produce kidney damage.

CARCINOGENIC ASSESSMENT:

NTP? No IRAC MONOGRAPH? No OSHA? No

Note: Cadmium is listed (2B-limited evidence) human carcinogen.
Nickel is listed as a NTP anticipated human carcinogen and IARC probable human carcinogen (Groups 2A and 2B).

SECTION VI - REACTIVITY DATA

STABILITY: ( ) Unstable
(X) Stable

CONDITIONS TO AVOID: None

INCOMPATIBILITY (MATERIALS TO AVOID) Avoid contact with acids and alkalis.

HAZARDOUS DECOMPOSITION PRODUCTS: Zinc boils off as vapor at elevated temperatures.

HAZARDOUS POLYMERIZATION: ( ) May Occur
(X) Will Not Occur

SECTION VII - SPILL OR LEAD PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Material should be contained for recycling.

WASTE DISPOSAL METHOD: Material may be recycled or disposed of in accordance with Federal, State, and Local Environmental Regulations. This material may be regulated under CERCLA, TSCA, SARA, and/or RCRA, state and/or local regulations.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (SPECIFY TYPE): Use NIOSH/MSHA approved type respirator for protections against dust and metal fume.

VENTILATION: Local exhaust or other ventilation that will reduce dust concentrations to less than permissible exposure limits.

PROTECTIVE GLOVES: Recommended to prevent skin irritation in hypersensitive individuals.

EYE PROTECTIONS: Use safety eyeware for protection against particulate matter.

OTHER PROTECTIVE EQUIPMENT: To prevent burns from contact with molten metal, appropriate protective garments should be worn in areas where this material exists.

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Store in dry location, separate from acids and alakalis. Keep metal dry so it does not contain any moisture when ready for use.

OTHER PRECAUTIONS: Always practice good personal hygiene when working in areas where this material exists.

<u>DISCLAIMER:</u>

This material safety data sheet is furnished pursuant to 29 CFR 1910.1200 for the purpose of providing information to employees, and not for any other purpose, and, as the conditions or methods of use of this material are beyond its control, Metalplate Galvanizing, L.P. expressly disclaims all liability for any use of this information or material, and makes no warranty, express or implied, for any use of this information or material. Information contained herein is believed to be true and accurate, but all statements or suggestions are made without any warranty, express or implied, regarding the accuracy of the information, the hazards connected with the use of the material, the physical properties of the material, or the results to be obtained from the use of the material or information. If material is to be used under conditions not described herein, written approval should be obtained from a person competent to assess the hazards and risks of the use of the material under the non-described conditions.

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U. S. STEEL GROUP
Material Safety Data Sheet
P.O. Box 206, Pittsburgh, PA 15230-0206

Telephone Information:
8:00 am-5:00 pm: (412) 433-6840
Off-Hour Emergencies: (412) 433-5811
Fax: (412) 433-6601

PRODUCT INFORMATION

Product/Common Name: Galvanized Sheet-HSLA Steel (Hot Dipped)
CAS No: 65997-19-5
USS Code No: 3H012
Original Issue Date: 8/1/85
Reference: January, 1994

REGULATORY INFORMATION

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

Pennsylvania R-T-K — Contains regulated material
- E = Environmental Hazard
- E+ = Environmental Hazard any compound this substance
- S = Special Hazard Substance

New Jersey R-T-K — Contains regulated material
- H = Special Health Hazard Substance

California Prop. 65 — This product contains a material known to the State of California to cause cancer or reproductive toxicity.

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.

WHMIS: (Canadian): D-2B Product Classification

1993 NIOSH Registry of Toxic Effects of Chemical Substances Reference — 44891, 5557, 25416, 48152, 60758, 81466, 84543, 89324, 9734, 46992, 90417

Definitions:
- C Ceiling
- PNOC Particulates not otherwise classified
- PNOR Particulates not otherwise regulated
- STEL Short Term Exposure Limit. A 15-minute Time-Weighted Average Value.

PHYSICAL DATA:

Boiling Point:	Not Applicable
Freezing Point	Not Applicable
Melting Point—Base Metal:	2750°F
Melting Point—Metallic Coating:	800-900°F
Specific Gravity:	7.85
Vapor Pressure—at 20°C:	Not Applicable
Vapor Density (air = 1):	Not Applicable
Solubility in Water:	Not Soluble
% Volatiles:	Not Applicable
Evaporation Rate:	Not Applicable
pH:	Not Applicable
Oil/Water Dist. Coefficient:	Not Applicable
Odor Threshold Conc.:	Not Applicable
Appearance (Physical State and Color):	Metallic Gray Solid
Odor:	No Odor

FIRE AND EXPLOSION HAZARDS:

Not flammable or combustible. Steel products in the solid state present no fire or explosion hazard and do not contribute to the combustion of other materials.

FIRE AND EXPLOSION DATA

Extinguishing Media: Not Applicable

Special Fire Fighting Instructions: None

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.

Oxidizing Material: Does Not Cause or Contribute to Combustion of Other Material by Yielding Oxidizer

INGREDIENTS AND RECOMMENDED OCCUPATIONAL EXPOSURE LIMIT

Ingredient Name	CAS No.	% wt.	TDG Class.	WHMIS Class.	LD50 Species/Route	OSHA PEL	ACGIH TLV
Base Metal Iron	1309-37-1	Balance	None	D2B	5500 mg/kg rat/intraperitoneal	Iron Oxide Fume - 10 mg/M³ Total Dust - 15 mg/M³ (PNOR) Respirable Fraction - 5 mg/M³ (PNOR)	5 mg/M³ (fume) (PNOC)
Alloying Elements Aluminum (E)	7429-90-5	.10 max.	None	D2B	No information	Total Dust - 15 mg/M³ Respirable Fraction & Welding Fume - 5 mg/M³	10 mg/M³ (dust) 5 mg/M³ (welding fume)
Carbon	7440-44-0	.25 max.	None	D2B	440 mg/kg mouse/intravenous	Total Dust - 15 mg/M³ (PNOR) Respirable Fraction - 5 mg/M³ (PNOR)	10 mg/M³ (PNOC)
Columbium	7440-03-1	.10 max.	None	D2B	No information	Total Dust - 15 mg/M³ (PNOR) Respirable Fraction - 5 mg/M³ (PNOR)	10 mg/M³ (PNOC)
Manganese (E/E+)	7439-96-5	.05/1.90	None	D2B	9 gm/kg rat/oral	Dust & Fume - 5 mg/M³ (C)	5 mg/M³ (dust) 1 mg/M³ (fume) 3 mg/M³ (STEL) (fume)
Phosphorus (E)	7723-14-0	.15 max.	4a	D2A	3030 ug/kg rat/oral	.1 mg/M³	.1 mg/M³
Rare Earth (Ce)	7440-45-1	.10 max.	None	D2B	No information	Total Dust - 15 mg/M³ (PNOR) Respirable Fraction - 5 mg/M³ (PNOR)	10 mg/M³ (PNOC)
Sulfur	7704-34-9	.05 max.	None	None	> 8437 mg/kg rat/oral	Total Dust - 15 mg/M³ (PNOR) Respirable Fraction - 5 mg/M³ (PNOR)	10 mg/M³ (PNOC)
Titanium	7440-32-6	.30 max.	None	D2B	No information	Total Dust - 15 mg/M³ (PNOR) Respirable Fraction - 5 mg/M³ (PNOR)	10 mg/M³(PNOC)
Vanadium (E)	7440-62-2	.20 max.	6a	D1B	59 mg/kg rabbit/subcutaneous	Total Dust - 15 mg/M³ (PNOR) Respirable Fraction - 5 mg/M³ (PNOR)	10 mg/M³ (PNOC)
Metallic Coating Aluminum (E)	7429-90-5	.055 max.*	None	D2B	No information	Total Dust - 15 mg/M³ Respirable Fraction & Welding Fume - 5 mg/M³	10 mg/M³ (dust) 5 mg/M3 (welding fume)
Antimony (E/E+)	7440-36-0	.011 max.	None	D2B	No information	.5 mg/M³	.5 mg/M³
Iron	1309-37-1	.092 max.	None	D2B	5.5 gm/kg rat/intraperitoneal	Iron Oxide Dust & Fume - 10 mg/M³ Total Particulates (as Fe)	5 mg/M³ (fume)
Lead (E/E+/H)	7439-92-1	.004 max.	None	D2A	LDLo—1 gm/kg rat/intraperitoneal	.05 mg/M³	.15 mg/M³
Zinc (E/E+)	1314-13-2	.18/9.1	None	D2B	>8437 mg/kg rat/oral	Fume - 5 mg/M³ Total Dust - 15 mg/M³ Respirable Fraction - 5 mg/M³	5 mg/M³ (fume) 10 mg/M³ (STEL) 10 mg/M³ (dust)

NOTES:
All comme[illegible] These small quantities, frequently referred to as "trace" or "residual" elements, generally originate in the raw materials used. Typical levels of commonly involved trace or residual elements that may be encountered in steel products are provided in Annex I so that [illegible] may be considered.

HOT DIPPED GALVANIZED ON COILS

All exposure limits are based on 8-hour time-weighted average values unless stated otherwise. (STEL) denotes "Short-Term Exposure Limit", a 15-minute time-weighted average value.

* % wt/metallic coating is a percent of total product.

HEALTH DATA

Primary Routes of Entry: Inhalation, ingestion and skin, if coated.

Effects of Overexposure:

Chronic inhalation of high concentrations of iron oxide fumes or 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.

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 phosphorus 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.

Longterm inhalation exposure to high concentrations (overexposure) 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.

Emergency and First Aid 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.

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

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

Special Protection Information:

Respiratory: 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.

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 cleaner.

Eyes: 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.

Precautions in Handling and Storage: Operations with the potential for generating high concentrations of airborne particulates should be evaluated and controlled as necessary. Avoid breathing metal fumes and/or dusts.

Spill or Leak Procedures: Not applicable to steel in solid state. Dispose in accordance with state and local regulation.

HOT DIPPED GALVANIZED ON COILS

U. S. STEEL GROUP
A Division of USX Corporation
Material Safety Data Sheet

PRODUCT INFORMATION

Product/Common Name: Galvanized Sheet-HSLA Steel (Hot Dipped)

CAS No.: 65997-19-5

USS Code No.: 3H012

Reference: January, 1994

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 Conditions 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)

Regulatory Information Components

NOTE: The listing of regulations relating to a USS 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; CERCLA; SARA 302; DOT
Pb	= SARA 313 if > 1.0%; 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 and 307; SDWA; RCRA; CERCLA; DOT
Ti	= DOT
V	= SARA 313 if > 1.0%; SDWA
Zn	= SARA 313 if > 1.0%; CWA 304 and 307; SDWA; RCRA; CERCLA; SARA 110; DOT

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CWA	Clean Water Act
DOT	Department of Transportation
IARC	International Agency for Research on Cancer
NIOSH	National Institute of Occupational Safety and Health
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration
RCRA	Resource Conservation Recovery Act
SARA	Superfund Amendments and Reauthorization Act of 1986
SDWA	Safe Drinking Water Act
TDG	Transportation of Dangerous Goods Act
TSCA	Toxic Substances Control Act
WHMIS	Workplace Hazardous Materials Information System

ROLL FORMING LUBRICANT, IF USED, ON BARE GALVALUME® BUILDING COVERING & TRIM STEELS

1. Vanishing Lubricating Oil on GALVALUME® Sheet

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MATERIAL SAFETY DATA SHEET

Revision Date: 2/01/98 Pacer Product Code: 3260

I. GENERAL INFORMATION

Chemical Name & Synonyms: Not applicable

Trade Name & Synonyms: **RUST-STOP A RUST & CORROSION INHIBITOR**

Chemical Family: Hydrocarbon base rust inhibitor

Formula: Not applicable

Proper DOT Shipping Name: Rust Preventative, NOIBN

DOT Hazard Classification: Combustible Liquid N.O.S. (Petroleum hydrocarbon naphtha, 85%), NA 1993, PG III

Manufacturer & Address: **PACER LUBRICANTS DIVISION**
South Coast Terminals, Inc.
7401 Wallisville Road
Houston, Texas 77020

Manufacturer's Phone No.: **713/672-2401 or 713/674-1622**

II. INGREDIENTS

Principal Components	Approx. Percent	Threshold Limit Value (units)
Petroleum hydrocarbon naphtha, CAS No. 64742-88-7	85	100 ppm - TWA 200 ppm - STEL
Oxygenated hydrocarbon wax blended with small amount of sodium petroleum sulfonate	15	None established

NOTE: Product not classified as hazardous under OSHA 29CFR 1910.1200. Safe operating and good housekeeping practices should always be followed when using this product. Inhalation of fumes and mist from fluid should be avoided.

HMIS Rating: Health = 1; Flammability = 2; Reactivity = 0

III. PHYSICAL DATA

Boiling Point (°F): IBP 350°F

Specific Gravity ($H_2O=1$): 0.77

Vapor Pressure (mm Hg): <12.0 @ 100°F

Percent Volatile by Volume: 87.0

Vapor Density (Air = 1): 4.0

Evaporation Rate (Ethyl/Ether=1): 4.0

Solubility in Water: Negligible

pH: Essentially neutral

Appearance and Odor: Light amber liquid; characteristic petroleum odor.

IV. FIRE AND EXPLOSION HAZARD DATA

Flash Point (Test Method): 142°F (TAG closed cup)

Auto Ignition Temperature: 473°F

Flammable Limits: LEL: 1% UEL: 6%

Extinguishing Media: CO_2, dry chemical, water spray, fog.

Special Fire Fighting Procedures: Water stream may spread fire; use water spray to cool containers exposed to fire. Use self-contained breathing apparatus.

Unusual Fire and Explosion Hazards: Can form combustible mixtures with air when heated to 100°F. Explosion hazard in fire situation. Vapor heavier than air.

V. HEALTH HAZARD DATA

Threshold Limit Value: 5 mg/M^3 (mist)

NOTE: All components of this product are shown in the TSCA inventory.

OSHA Threshold Limit Value: 5 mg/M^3 (mist)

ACGIH Threshold Limit Value: 5 mg/M^3 (mist)

Carcinogen - NTP Program: Not shown

Carcinogen - IARC Program: Not shown

Symptoms of Exposure: Prolonged or repeated skin contact may cause skin irritation. Eye contact may cause eye irritation. Avoid inhalation of oil fumes or mist from fluid - may cause respiratory irritation. Ingestion may cause acute stomach distress and lung damage if large quantities are swallowed and aspirated.

Medical Conditions Aggravated by Exposure: Prolonged or repeated skin contact with this product tends to remove skin oils possibly leading to irritation and dermatitis. Health studies have shown many petroleum products pose potential risks which vary from person to person. Exposure to liquid, vapors, or mists should be minimized.

Primary Route(s) of Entry: Inhalation of mist or vapor from fluid, skin contact, eye contact, ingestion.

Emergency First Aid: **INHALATION**: Remove from source of mist or vapor; provide fresh air. **EYE CONTACT**: Flush with large amounts of fresh water. If eye irritation persists, contact physician. **SKIN CONTACT**: Wash thoroughly with soap and water. Remove oil soaked clothing and launder before reuse. If skin irritation persists, contact physician. **INGESTION**: If ingested, do not induce vomiting. Call a physician or health care provider immediately.
NOTE: In case of contact with heated fluid, treat as a burn and contact a physician, health care provider, or medical emergency clinic immediately.

VI. REACTIVITY DATA

STABILITY: X Stable
__ Unstable
Conditions to Avoid: Not applicable.

INCOMPATIBILITY
Materials to Avoid: Strong oxidants like liquid chlorine and oxygen, either gaseous or liquified.

HAZARDOUS POLYMERIZATION: X Will not occur
___ May occur
Conditions to Avoid: Not applicable.

Hazardous Decomposition Products: Carbon monoxide in the case of incomplete combustion.

VII. ENVIRONMENTAL PROTECTION PROCEDURES

Spill Response: Remove free liquid. Add absorbent to spill area. Keep petroleum products out of streams and waterways.

Waste Disposal Method: Incinerate absorbed material. Waste disposal methods must comply with all applicable local, state and federal regulations.

NOTE: Not reportable as hazardous waste under 40CFR261. Contains no toxic pollutants as defined by 40CFR401.

VIII. SPECIAL PROTECTION INFORMATION

Eye Protection: Chemical splash goggles or face shield.

Skin Protection: Oil resistant gloves and aprons.

Respiratory Protection (Specific Type): Respirator with organic mist/vapor cartridge (yellow code).

Ventilation Recommended: Local exhaust to remove oil mist, fumes, or vapors.

Other Protection: HMIS Personal Protection Code H.

IX. SPECIAL PRECAUTIONS

Special Precautions in Handling and Storage: Keep containers closed. Keep containers away from heat and flame.

Hygienic Precautions: Avoid inhalation of oil fumes, mist, or vapor. Remove and launder oil soaked clothing. Wash hands thoroughly with soap and hot water after use. Avoid skin contact and use personal protection when handling waste oils.

Precautions for Repair and Maintenance of Contaminated Equipment: Safe maintenance and good housekeeping procedures should be followed when repairing or handling oil contaminated equipment.

SEALANTS, ADHESIVES & CLOSURE STRIPS USED IN THE BUILDING

1. Butyl Tape Sealant (1)
2. Tube Sealants (4)
3. Standing Seam factory-applied Sealants (3)
4. Spray Adhesive (1)
5. Foam Closure Strips (1)
6. Field Applied Topcoat Sealant (1)

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GSSI Sealants

[redacted]

SECTION I - PRODUCT IDENTIFICATION

Product Name ➢	MB-10A
Chemical Name ➢	ISOBUTYLENE/ISOPRENE/BUTENE/MINERAL FILLER BLEND
Chemical Family ➢	ISOBUTYLENE/ISOPRENE/BUTENE/MINERAL FILLER BLEND

24 Hour Emergency Assistance (713) 941-4110

Health	Fire	Reactivity	PPE
0	1	0	B

Hazard Rating = 0-least, 1-slight, 2-moderate, 3-high, 4-extreme

General MSDS Assistance (713) 961-4110

SECTION II - HAZARDOUS INGREDIENTS

The composition of this mixture may be proprietary information. In the event of a medical emergency, compositional information will be provided to a physician or nurse. This product is not hazardous as defined in 29 CFR 1910.1200.

SECTION III - EMERGENCY AND FIRST AID PROCEDURES

EYE CONTACT
This product is an inert solid. If in eye, remove as one would any foreign object. Flush eyes with plenty of water.

INHALATION
Remove victim to fresh air and provide oxygen if breathing is difficult. Give artificial respiration if not breathing. Get medical attention.

SKIN CONTACT
Remove contaminated clothing/shoes. Wash the area with hot soapy water. Use of a waterless hand cleaner will help remove product. If irritation persists, get medical attention.

INGESTION
If large amounts are ingested, get medical attention.

SECTION IV - OCCUPATIONAL EXPOSURE LIMITS

NOT APPLICABLE

SECTION V - HEALTH INFORMATION

EYE CONTACT
Particulates may scratch eye surfaces/cause mechanical irritation.

SKIN CONTACT
No significant health hazards identified.

INHALATION
No significant health hazards identified.

INGESTION
No significant health hazards identified.

CARCINOGEN OR POTENTIAL CARCINOGEN

National Toxicology Program	yes ☐ no ☒	I.A.R.C. Monographs	yes ☐ no ☒	OSHA	yes ☐ no ☒

SECTION VI EMPLOYEE PROTECTION

EYE:
None required; however, use of eye protection is good industrial practice.

SKIN:
None required; however, use of protective clothing to minimize contact is good industrial practice.

INHALATION:
None required; however, use of adequate ventilation is good industrial practice.

SECTION VII - PHYSICAL DATA

Boiling Point, °F: N/A **Specific Gravity:** 1.50 - 1.70 **Vapor Pressure (mm HG):** N/A
Melting Point, °F: N/A. **Solubility in water:** Negligible **Vapor Density (AIR=1):** N/A

Evaporation Rate (N-Butyl) Acetate =1): N/A **pH:** Neutral

Appearance and Odor: Gray solid, essentially odorless

SECTION VIII - FIRE AND EXPLOSION HAZARDS

FLASH POINT AND METHOD:
N/A

FLAMMABLE LIMITS: % VOLUME IN AIR
Lower: N/A Upper: N/A

EXTINGUISHING MEDIA
Use water fog, foam, dry chemical or CO_2.

SPECIAL FIRE FIGHTING PROCEDURES AND PRECAUTIONS
Caution. Do not enter confined space without full bunker gear (helmet with face shield, bunker coats, gloves and rubber boots), including a positive pressure NIOSH/MSHA approved self-contained breathing apparatus. Cool Fire exposed containers with water.

UNUSUAL FIRE AND EXPLOSION HAZARDS
None identified.

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SECTION IX - REACTIVITY

STABILITY: Stable **HAZARDOUS POLYMERIZATION:** Will not occur

CONDITIONS AND MATERIALS TO AVOID
Avoid heat, flame, and strong acids.

HAZARDOUS DECOMPOSITION PRODUCTS
Carbon monoxide and unidentified organic compounds may be formed during combustion.

SECTION X - SPECIAL PRECAUTIONS

Avoid contact with eyes, skin, and clothing. Store away from sources of ignition. KEEP OUT OF REACH OF CHILDREN.

SECTION XI - ENVIRONMENTAL PROTECTION

SPILL OR LEAK PROCEDURES
Recover spilled material and place in suitable containers for recycle or disposal. Dispose in accordance with applicable Federal, State or local regulations.

SECTION XII - TRANSPORTATION REQUIREMENTS

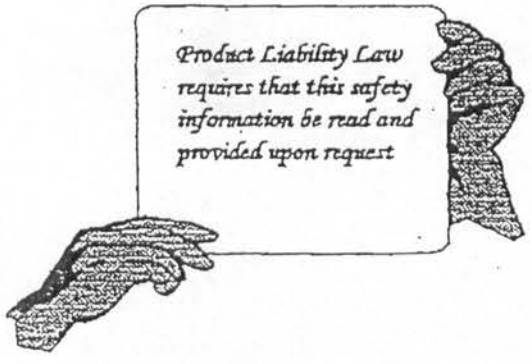
NOT D.O.T. REGULATED

SECTION XIII - REGULATORY DATA

The components of the product are listed on the EPA/TSCA Inventory of Chemical Substances.

Gulf States Specialties, Inc.
P.O. Box 508, 300 Christy Place
South Houston, Texas 77587
Phone: (713) 941-4410
Fax: (713) 947-4906

Date Prepared: 11/30/95



MATERIAL SAFETY DATA SHEET

SECTION I - IDENTIFICATION

PRODUCT NAME : 5522 Clear H.M.I.S. RATINGS: H F R P
PRODUCT CODE : B5522 C 1 1 0 G
DESCRIPTION : Acrylic Bedding Sealant
HAZARDOUS CLASSIFICATION: Non regulated
PROPER SHIPPING NAME: Not applicable
SHIPPING DESCRIPTION: Not required

SECTION II - MANUFACTURER

MANUFACTURER'S NAME: Schnee-Morehead, Inc.
STREET ADDRESS : 111 N. Nursery Rd., Irving, Texas
INFORMATION PHONE : 214-438-9111 EMERGENCY PHONE: 800-424-9300
DATE PREPARED : August 12, 1994 SUPERSEDES DATE: June 13, 1994
NAME OF PREPARER : Randy Martin SIGNATURE:

SECTION III - HAZARDOUS INGREDIENTS

HAZARDOUS COMPONENTS	CAS NUMBER	OSHA PEL	ACGIH TLV	OTHER LIMITS	PERCENT (weight)
Acrylic Resin/Toluene Solution	Not available (mixture)			(toluene	27.9%)
Toluene	108-88-3	-	50 ppm TWA	188 mg/m3 TWA	5.2%
* NOTE: Toluene is a SARA Title III Section 313 reportable chemical					
Silicon Dioxide, Amorphous	112945-52-5	20 mppcf	5 mg/m3		

SECTION IV - PHYSICAL PROPERTIES

SPECIFIC GRAVITY (H2O=1): 1.060 BOILING POINT : 110.6 C (Toluene)
VOLATILE (% VOLUME): 37.3% MELT/FREEZE PT: N/A
SOLUBILITY IN WATER : Insoluble VAPOR DENSITY : 3.2 (Toluene)
EVAPORATION RATE (BuAc=1) : 1.9 (Toluene) VAPOR PRESSURE: 28.5 mm (Toluene)
VOLATILE ORGANIC CONTENT : 2.88 lbs/gal, 345.18 grams/liter
APPEARANCE/ODOR : Clear, pumpable material - aromatic odor

SECTION V - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: 49.0 F, 9.4 C METHOD USED: ASTM D56-87 (Tag Closed Cup)
FLAMMABLE LIMITS IN AIR BY VOLUME-LOWER: 1.27 (Toluene) UPPER: 7.1 (Toluene)

EXTINGUISHING MEDIA:
Use carbon dioxide, dry chemical, foam or water spray
SPECIAL FIREFIGHTING PROCEDURES:
Firefighters should wear a self-contained breathing apparatus and full protective equipment.

UNUSUAL FIRE AND EXPLOSION HAZARD:

This product, in an uncured state, emits vapors that are volatile and flammable. Once this product has cured, it is nonflammable.

========== SECTION VI - REACTIVITY DATA ==========

STABILITY: Stable

CONDITIONS TO AVOID:

Avoid heat, sparks and any other sources of ignition.

INCOMPATIBILITY (MATERIALS TO AVOID):

Avoid contact with oxidizing agents.

HAZARDOUS DECOMPOSITION OR BY - PRODUCTS:

During a fire this material may form carbon dioxide, carbon monoxide and other various hydrocarbon fumes.

HAZARDOUS POLYMERIZATION:

Will not occur

CONDITIONS TO AVOID:

None known

==========SECTION VII - HEALTH HAZARD DATA==========

ROUTE(S) OF ENTRY:

INHALATION?: Yes SKIN?: Yes INGESTION?: Not likely

HEALTH HAZARDS (ACUTE AND CHRONIC):

Inhalation of excessive vapors can cause nasal and respiratory irritation, dizziness, weakness, fatigue, nausea and possible headaches. Excessive skin contact can cause irritation, drying and possible edema.

CARCINOGENICITY:

NTP?: No IARC MONOGRAPHS?: No OSHA REGULATED?: Yes (toluene)

SIGNS AND SYMPTOMS OF EXPOSURE:

Chronic effects of overexposure are loss of appetite and nose bleed.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:
There are no known medical conditions which are aggravated by exposure.

EMERGENCY AND FIRST AID PROCEDURES:
Skin Contact- Wash with soap and water for 15 minutes.
Eye Contact - Flush with warm water for 15 minutes. Seek immediate medical attention.
Inhalation - Move victim to fresh air, if breathing has stopped give artificial respiration. Seek immediate medical attention.
Ingestion - DO NOT INDUCE VOMITING. Seek medical attention.

==========SECTION VIII - PRECAUTIONS FOR SAFE HANDLING AND USE==========

STEPS TO BE TAKEN IN CASE MATERIAL IS SPILLED OR RELEASED:
Eliminate all ignition sources, contain spill and shovel into an appropriate container.

WASTE DISPOSAL METHOD:
Dispose of product in accordance with local, state and federal compliance regulations.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:
There should be NO SMOKING allowed in the areas where this product is used. Keep away from all heat and ignition sources as well as oxidizing agents. Store material below 80 F and rotate stock continually.

==========SECTION IX - CONTROL MEASURES==========

RESPIRATORY PROTECTION:
Use OSHA/NIOSH approved respirator with organic vapor cartridges in confined areas. 500 ppm: CCROV/SA/SCBA

VENTILATION:
LOCAL EXHAUST: If needed SPECIAL: N/A
MECHANICAL: If needed OTHER: N/A

GLOVES: Chemical resistant, Impervious EYE PROTECTION: Safety glasses

OTHER PROTECTIVE CLOTHING OR EQUIPMENT:
Use a chemical apron to protect clothing if needed.

WORK/HYGIENIC PRACTICES:
Always wash hands after working with this material; Use good hygiene practices.

========== SECTION X - REGULATORY INFORMATION ==========

Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):

This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

SARA Title III Information:

Section 313- Toxic Chemicals
Pursuant to section 313 of SARA title III, this product contains one or more toxic chemicals that are present in a concentration in excess of 1 percent of the mixture (0.1 percent, if the listed toxic chemical is a carcinogen).
Toluene

SECTION XI - DISCLAIMER

This document may be used to comply with OSHA's Hazardous Communication Standard, 29 CFR 1910.1200.

A MSDS such as this cannot be expected to cover all possible individual situations. The end user of this product has the responsibility to provide a safe work place. All aspects of an individual operation should be examined to determine if, or where, precautions - in addition to those described herein - are required. Any health hazard and safety information contained herein should be passed on to your customers and/or employees.

The opinions expressed herein are those of qualified experts within Schnee Morehead, Inc. We believe that the information contained herein is current as of the date of this Material Safety Data Sheet. Since the use of this information and the use of this product are not within the control of Schnee Morehead, Inc., final determination of suitability of this product is the sole responsibility of the user. It is the responsibility of the user to comply with all applicable Federal, State and Local laws and regulations.

N/A = Not Applicable, N.A. = Not Available, N.D. = Not Determined, N/E = Not Established, UNK = Unknown

MATERIAL SAFETY DATA SHEET

SECTION I - IDENTIFICATION

PRODUCT NAME : 5522 Pigmented H.M.I.S. RATINGS: H F R P
PRODUCT CODE : B5522 1 1 0 G
DESCRIPTION : Acrylic Bedding Sealant
HAZARDOUS CLASSIFICATION: Non regulated
PROPER SHIPPING NAME: Not applicable
SHIPPING DESCRIPTION: Not required

SECTION II - MANUFACTURER

MANUFACTURER'S NAME: Schnee-Morehead, Inc.
STREET ADDRESS : 111 N. Nursery Rd., Irving, Texas
INFORMATION PHONE : 214-438-9111 EMERGENCY PHONE: 800-424-9300
DATE PREPARED : February 8, 1993 SUPERSEDES DATE: April 2, 1992
NAME OF PREPARER : Randy Martin

SECTION III - HAZARDOUS INGREDIENTS

HAZARDOUS COMPONENTS	CAS NUMBER	OSHA PEL	ACGIH TLV	OTHER LIMITS	PERCENT (Weight)
Acrylic Resin/Toluene Solution	Proprietary	150 ppm (STEL)	100 ppm		
Toluene	108-88-3	150 ppm (STEL)	100 ppm	350 ppm/8hrs	21.8%
* NOTE: Toluene is a SARA Title III Section 313 reportable chemical					
Silicon Dioxide, Amorphous	112945-52-5	20 mppcf	5 mg/m3		

SECTION IV - PHYSICAL PROPERTIES

SPECIFIC GRAVITY (H2O=1): 1.25 BOILING POINT : 110.6 C (Toluene)
VOLATILE (% VOLUME): 33.2% MELT/FREEZE PT: N/A
SOLUBILITY IN WATER : Insoluble VAPOR DENSITY : 3.2 (Toluene)
EVAPORATION RATE (BuAc=1) : 1.9 (Toluene) VAPOR PRESSURE: 28.5 mm (Toluene)
VOLATILE ORGANIC CONTENT : 2.43 lbs/gal, 292 grams/liter
APPEARANCE/ODOR : Color of pigment, pumpable material - aromatic odor

SECTION V - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: 52.0 F, 11.1 C METHOD USED: ASTM D56-87 (Tagged Closed Cup)
FLAMMABLE LIMITS IN AIR BY VOLUME-LOWER: 1.27 (Toluene) UPPER: 7.1 (Toluene)

EXTINGUISHING MEDIA:
Use carbon dioxide, dry chemical, foam or water spray
SPECIAL FIREFIGHTING PROCEDURES:
Firefighters should wear a self-contained breathing apparatus and full protective equipment.

UNUSUAL FIRE AND EXPLOSION HAZARD:

This product, in an uncured state, emits vapors that are volatile and flammable. Once this product has cured, it is nonflammable.

========== SECTION VI - REACTIVITY DATA ==========

STABILITY: Stable

CONDITIONS TO AVOID:

Avoid heat, sparks and any other sources of ignition.

INCOMPATIBILITY (MATERIALS TO AVOID):

Avoid contact with oxidizing agents.

HAZARDOUS DECOMPOSITION OR BY - PRODUCTS:

During a fire this material may form carbon dioxide, carbon monoxide and other various hydrocarbon fumes.

HAZARDOUS POLYMERIZATION:

Will not occur

CONDITIONS TO AVOID:

None known

==========SECTION VII - HEALTH HAZARD DATA==========

ROUTE(S) OF ENTRY:

INHALATION?: Yes SKIN?: Yes INGESTION?: Not likely

HEALTH HAZARDS (ACUTE AND CHRONIC):

Inhalation of excessive vapors can cause nasal and respiratory irritation, dizziness, weakness, fatigue, nausea and possible headaches. Excessive skin contact can cause irritation, drying and possible edema.

CARCINOGENICITY:

NTP?: No IARC MONOGRAPHS?: No OSHA REGULATED?: No

SIGNS AND SYMPTOMS OF EXPOSURE:

Chronic effects of overexposure are loss of appetite and nose bleed.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:

There are no known medical conditions which are aggravated by exposure.

EMERGENCY AND FIRST AID PROCEDURES:

Skin Contact- Wash with soap and water for 15 minutes.
Eye Contact - Flush with warm water for 15 minutes. Seek immediate medical attention.
Inhalation - Move victim to fresh air, if breathing has stopped give artificial respiration. Seek immediate medical attention.
Ingestion - DO NOT INDUCE VOMITING. Seek medical attention.

==========SECTION VIII - PRECAUTIONS FOR SAFE HANDLING AND USE==========

STEPS TO BE TAKEN IN CASE MATERIAL IS SPILLED OR RELEASED:

Eliminate all ignition sources, contain spill and shovel into an appropriate container.

WASTE DISPOSAL METHOD:

Dispose of product in accordance with local, state and federal compliance regulations.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

There should be NO SMOKING allowed in the areas where this product is used. Keep away from all heat and ignition sources as well as oxidizing agents. Store material below 80 F and rotate stock continually.

==========SECTION IX - CONTROL MEASURES==========

RESPIRATORY PROTECTION:

Use OSHA/NIOSH approved respirator with organic vapor cartridges in confined areas. 500 ppm: CCROV/SA/SCBA

VENTILATION:

LOCAL EXHAUST: If needed
MECHANICAL: If needed
SPECIAL: N/A
OTHER: N/A

GLOVES: Chemical resistant, Impervious

EYE PROTECTION: Safety glasses

OTHER PROTECTIVE CLOTHING OR EQUIPMENT:

Use a chemical apron to protect clothing if needed.

WORK/HYGIENIC PRACTICES:

Always wash hands after working with this material; Use good hygiene practices.

========== SECTION X - DISCLAIMER ==========

This document may be used to comply with OSHA's Hazardous Communication Standard, 29 CFR 1910.1200.

The opinions expressed herein are those of qualified experts within Schnee Morehead, Inc. We believe that the information contained herein is current as of the date of this Material Safety Data Sheet. Since the use of this information and the use of this product are not within the control of Schnee Morehead, Inc., it is the user's obligation to determine the conditions of safe use of this product.

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N/A = Not Applicable, N.A. = Not Available, N.D. = Not Determined, N/E = Not Established, UNK = Unknown

MATERIAL SAFETY DATA SHEET

SECTION I - IDENTIFICATION

PRODUCT NAME : 7100
PRODUCT CODE : SM 7100
DESCRIPTION : One-Part Polyurethane Sealant
HAZARDOUS CLASSIFICATION: Non regulated
PROPER SHIPPING NAME: Not applicable
SHIPPING DESCRIPTION: Not required

H.M.I.S. RATINGS:

H	F	R	P
1	1	0	G

SECTION II - MANUFACTURER

MANUFACTURER'S NAME: Schnee-Morehead, Inc.
STREET ADDRESS : 111 N. Nursery Rd., Irving, Texas
INFORMATION PHONE : 972-438-9111 EMERGENCY PHONE: 800-424-9300
DATE PREPARED : June 22,1999 SUPERSEDES DATE: March 28, 1995
Name OF PREPARER : Rodney Roland

SECTION III - HAZARDOUS INGREDIENTS

HAZARDOUS COMPONENTS	CAS NUMBER	OSHA PEL	ACGIH TLV	OTHER LIMITS	PERCENT (weight)
Butyl benzyl phthalate	85-68-7	5 mg/m3	5 mg/m3		
Toluene	108-88-3	-	50 ppm TWA	188 mg/m3 TWA	1-3%

*Note: Toluene is a SARA Title III Section 313 reportable chemical

SECTION IV - PHYSICAL PROPERTIES

SPECIFIC GRAVITY (H2O=1): 1.599 BOILING POINT : N/A
NONVOLATILE (% WEIGHT) : 97% min. MELT/FREEZE PT: N/A
SOLUBILITY IN WATER : Insoluble VAPOR DENSITY : N/A
EVAPORATION RATE (BuAc=1) : N/A VAPOR PRESSURE: N/A
VOLATILE ORGANIC CONTENT : 0.40 lbs/gal or 48 grams/liter
APPEARANCE/ODOR : Color of pigment, pumpable material- slight aromatic odor.

SECTION V - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: 150 F METHOD USED: ASTM D56 (Tag Closed Cup)
FLAMMABLE LIMITS IN AIR BY VOLUME - LOWER: N/A UPPER: N/A

EXTINGUISHING MEDIA:

Use carbon dioxide, dry chemical, foam and or water spray.

SPECIAL FIREFIGHTING PROCEDURES:

Firefighters should wear full emergency equipment with self-contained breathing apparatus. Irritating or toxic gasses may be present during a fire.

UNUSUAL FIRE AND EXPLOSION HAZARD:

Overheated, closed containers adjacent to fire can cause the material inside to decompose resulting in pressure build up and possible explosion.

========== SECTION VI - REACTIVITY DATA ==========

STABILITY: Stable

CONDITIONS TO AVOID:

Material will start to cure in the presence of humid air or moisture.

INCOMPATIBILITY (MATERIALS TO AVOID):

Avoid contact with alcohols, amines, strong bases and surface active materials.

HAZARDOUS DECOMPOSITION OR BY - PRODUCTS:

During a fire this material may foam carbon dioxide, carbon monoxide, nitrogen oxides and traces of isocyanates.

HAZARDOUS POLYMERIZATION:

Will not occur.

CONDITIONS TO AVOID:

None known.

==========SECTION VII - HEALTH HAZARD DATA==========

ROUTE(s) OF ENTRY:

INHALATION?: Yes SKIN?: Yes INGESTION?: Not likely

HEALTH HAZARDS (ACUTE AND CHRONIC):

Like all urethane sealants, this product contains Isocyanate resins which may cause irritation to the eyes or skin on contact. Tests have shown that no volatile isocyanates are present. Small amounts of residual toluene present may cause skin and respiratory tract irritation.

CARCINOGENICITY:

NTP?: No IARC MONOGRAPHS?: No OSHA REGULATED?: Yes

SIGNS AND SYMPTOMS OF EXPOSURE:

Upon exposure to the skin, the skin may turn red and burn. A person sensitive to organic solvents may have shortness of breath when using this product.

SM 7100 MATERIAL SAFETY DATA SHEET

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:

This product may be irritating to a person with known allergies.

EMERGENCY AND FIRST AID PROCEDURES:

Skin Contact- Wash with soap and water for 15 minutes. If irritation persists, contact a physician.
Eye Contact - Flush with warm water for 15 minutes and seek medical attention.
Inhalation - Move victim to fresh air. If breathing has stopped give artificial respiration. Seek immediate medical attention.
Ingestion - DO NOT INDUCE VOMITING. Seek medical attention.

==========SECTION VIII - PRECAUTIONS FOR SAFE HANDLING AND USE==========

STEPS TO BE TAKEN IN CASE MATERIAL IS SPILLED OR RELEASED:

Eliminate all ignition sources. Ventilate the area. Supply clean-up personnel with appropriate clothing (respirators, gloves, etc..), clean the material with mineral spirits or a mixture of toluene/alcohol if in an uncured state (wet and pliable). If material is cured, use a solvent such as Dynasolve.

WASTE DISPOSAL METHOD:

Cured or neutralized waste product can be landfilled or incinerated. Consult and follow all local, state and federal compliance regulations before disposing of the product.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

Store in a clean dry place. Moisture will cause the material to cure.

==========SECTION IX - CONTROL MEASURES==========

RESPIRATORY PROTECTION:

Not normally required for properly ventilated areas. Respiratory protection should be considered for exposures resulting from unusual applications and/or used in non-ventilated enclosed areas. If this occurs, wear NIOSH/MSHA approved self-contained breathing apparatus or cartridge type respirator.

VENTILATION:

LOCAL EXHAUST: If needed SPECIAL: N/A
MECHANICAL: If needed OTHER: N/A

GLOVES: Chemical resistant; Impervious EYE PROTECTION: Safety glasses

OTHER PROTECTIVE CLOTHING OR EQUIPMENT:

Use a chemical apron to protect clothing if needed

WORK/HYGIENIC PRACTICES:

Always wash hands after working with this material; Use good hygiene practices.

========== SECTION X - REGULATORY INFORMATION ==========

Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):

This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

SARA Title III Information:

Section 313- Toxic Chemicals
Pursuant to section 313 of SARA title III, this product contains one or more toxic chemicals that are present in a concentration in excess of 1 percent o the mixture (0.1 percent, if the listed toxic chemical is a carcinogen).
Toluene

SM 7100 MATERIAL SAFETY DATA SHEET

SECTION XI - DISCLAIMER

This document may be used to comply with OSHA's Hazardous Communication Standard, 29 CFR 1910.1200.

A MSDS such as this cannot be expected to cover all possible individual situations. The end user of this product has the responsibility to provide a safe workplace. All aspects of an individual operation should be examined to determine if, or where, precautions - in addition to those described herein - are required. Any health and safety information contained herein should be passed on to your customers and/or employees.

The opinions expressed herein are those of qualified experts within Schnee Morehead, Inc. We believe that the information contained herein is current as of the date of this Material Safety Data Sheet. Since the use of this information and the use of this product are not within the control of Schnee Morehead, Inc., final determination of suitability of this product is the sole responsibility of the user. It is the responsibility of the user to comply with all applicable Federal, State and Local laws and regulations.

N/A = Not Applicable, N.A. = Not Available, N.D. = Not Determined, N/E = Not Established, UNK = Unknown

MATERIAL SAFETY DATA SHEET

SECTION I - IDENTIFICATION

PRODUCT NAME : 5504 Pigmented
PRODUCT CODE : B5504
DESCRIPTION : Acrylic Seam Sealer

H.M.I.S. RATINGS:

H	F	R	P
1	2	0	G

HAZARDOUS CLASSIFICATION: Flammable Liquid
PROPER SHIPPING NAME: Flammable liquid, n.o.s
SHIPPING DESCRIPTION: Flammable liquid, n.o.s 3, UN 1993, PG II, (contains Toluene and Isopropyl alcohol)

SECTION II - MANUFACTURER

MANUFACTURER'S NAME: Schnee-Morehead, Inc.
STREET ADDRESS : 111 N. Nursery Rd., Irving, Texas
INFORMATION PHONE : 214-438-9111 EMERGENCY PHONE: 800-424-9300
DATE PREPARED : February 8, 1993 SUPERSEDES DATE: April 2, 1992
NAME OF PREPARER : Randy Martin

SECTION III - HAZARDOUS INGREDIENTS

HAZARDOUS COMPONENTS	CAS NUMBER	OSHA PEL	ACGIH TLV	OTHER LIMITS	PERCENT (Weight)
Acrylic Resin/Toluene Solution	Proprietary	150 ppm (STEL)	100 ppm		
Toluene	108-88-3	150 ppm (STEL)	100 ppm	350 ppm/8hrs	44.6%
* NOTE: Toluene is a SARA Title III Section 313 reportable chemical					
Silicon Dioxide, Amorphous	68611-44-9	20 mppcf	5 mg/m3		
Silicon Dioxide, Amorphous	112945-52-5	20 mppcf	5 mg/m3		
Isopropyl Alcohol	67-63-0	400 ppm	400 ppm		1.71%
* NOTE: Isopropyl alcohol is a SARA Title III Section 313 reportable chemical					

SECTION IV - PHYSICAL PROPERTIES

SPECIFIC GRAVITY (H2O=1): 0.986 BOILING POINT : 110.6 C (Toluene)
VOLATILE (% VOLUME): 51.9% MELT/FREEZE PT: N/A
SOLUBILITY IN WATER : Insoluble VAPOR DENSITY : 3.2 (Toluene)
EVAPORATION RATE (BuAc=1) : 1.9 (Toluene) VAPOR PRESSURE: 28.5 mm (Toluene)
VOLATILE ORGANIC CONTENT : 3.73 lbs/gal, 448 grams/liter
APPEARANCE/ODOR : Color of pigment, flowable viscous material- aromatic odor

SECTION V - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: 31.0 F METHOD USED: ASTM D56-87 (Tagged Closed Cup)
FLAMMABLE LIMITS IN AIR BY VOLUME- LOWER: 1.27 (Toluene) UPPER:7.1 (Toluene)

EXTINGUISHING MEDIA:
Use carbon dioxide, dry chemical, foam or water spray
SPECIAL FIREFIGHTING PROCEDURES:
Firefighters should wear a self-contained breathing apparatus and full protective equipment.

UNUSUAL FIRE AND EXPLOSION HAZARD:
This product, in an uncured state, emits vapors that are volatile and flammable. Once this product has cured, it is nonflammable.

========== SECTION VI - REACTIVITY DATA ==========

STABILITY: Stable
CONDITIONS TO AVOID:
Avoid heat, sparks and any other sources of ignition.

INCOMPATIBILITY (MATERIALS TO AVOID):
Avoid contact with oxidizing agents.

HAZARDOUS DECOMPOSITION OR BY - PRODUCTS:
During a fire this material may form carbon dioxide, carbon monoxide and other various hydrocarbon fumes.

HAZARDOUS POLYMERIZATION:
Will not occur

CONDITIONS TO AVOID:
None known

==========SECTION VII - HEALTH HAZARD DATA==========

ROUTE(s) OF ENTRY:
INHALATION?: Yes SKIN?: Yes INGESTION?: Not likely

HEALTH HAZARDS (ACUTE AND CHRONIC):
Inhalation of excessive vapors can cause nasal and respiratory irritation, dizziness, weakness, fatigue, nausea and possible headaches. Excessive skin contact can cause irritation, drying and possible edema.

CARCINOGENICITY:
NTP?: No IARC MONOGRAPHS?: No OSHA REGULATED?: No

SIGNS AND SYMPTOMS OF EXPOSURE:
Chronic effects of overexposure are loss of appetite and nose bleed.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:

There are no known medical conditions which are aggravated by exposure.

EMERGENCY AND FIRST AID PROCEDURES:

Skin Contact- Wash with soap and water for 15 minutes.
Eye Contact - Flush with warm water for 15 minutes. Seek immediate medical attention.
Inhalation - Move victim to fresh air, if breathing has stopped give artificial respiration. Seek immediate medical attention.
Ingestion - DO NOT INDUCE VOMITING. Seek medical attention.

==========SECTION VIII - PRECAUTIONS FOR SAFE HANDLING AND USE==========

STEPS TO BE TAKEN IN CASE MATERIAL IS SPILLED OR RELEASED:

Eliminate all ignition sources, contain spill and shovel into an appropriate container.

WASTE DISPOSAL METHOD:

Dispose of product in accordance with local, state and federal compliance regulations.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

There should be NO SMOKING allowed in the areas where this product is used. Keep away from all heat and ignition sources as well as oxidizing agents. Store material below 80 F and rotate stock continually.

==========SECTION IX - CONTROL MEASURES==========

RESPIRATORY PROTECTION:

Use OSHA/NIOSH approved respirator with organic vapor cartridges in confined areas. 500 ppm: CCROV/SA/SCBA

VENTILATION:

LOCAL EXHAUST: If needed
MECHANICAL: If needed
SPECIAL: N/A
OTHER: N/A

GLOVES: Chemical resistant, Impervious

EYE PROTECTION: Safety glasses

OTHER PROTECTIVE CLOTHING OR EQUIPMENT:

Use a chemical apron to protect clothing if needed.

WORK/HYGIENIC PRACTICES:

Always wash hands after working with this material; Use good hygiene practices.

========== SECTION X - DISCLAIMER ==========

This document may be used to comply with OSHA's Hazardous Communication Standard, 29 CFR 1910.1200.

The opinions expressed herein are those of qualified experts within Schnee Morehead, Inc. We believe that the information contained herein is current as of the date of this Material Safety Data Sheet. Since the use of this information and the use of this product are not within the control of Schnee Morehead, Inc., it is the user's obligation to determine the conditions of safe use of this product.

==========

N/A = Not Applicable, N.A. = Not Available, N.D. = Not Determined, N/E = Not Established, UNK = Unknown

Material Safety Data Sheet

SEALUM SM-501

CHEMSECO
4800 BLUE PARKWAY
KANSAS CITY, MO 64130

Telephone: (816)923-8200

Company Contact: MACK WHITLOCK

Emergency Contact: MACK WHITLOCK
Emergency Phone Number: (800)548-0496

SECTION #1 - IDENTIFICATION

Product
Name: SEALUM SM-501

CAS Number: Not Established
Chemical Family: BUTYL SEALANT
Chemical Formula: COMPLEX MIXTURE

HIMS Hazard Rating - Health: 2 Moderate
- Fire: 2 Moderate
- Reactivity: 0 Negligible

Special Hazards: EYE, SKIN, RESPIRATORY IRRITANT, COMBUSTIBLE

SECTION #2 - HAZARDOUS CHEMICAL COMPONENTS

Component: CALCIUM CARBONATE
CAS Number: 1317-65-3
ACGIH TLV-TWA: 10 mg/m3

Component: PETROLEUM SOLVENT
CAS Number: 64742-88-7
OSHA PEL-TLV: 100ppm

Component: SILICA, AMORPHOUS
CAS Number: 7631-86-9
OSHA PEL-TWA: 20 mppcf
NTP: N/A
IARC: YES

Component: TALC
CAS Number: 14807-96-6
ACGIH TLV-TWA: 2 mg/m3
OSHA PEL-TWA: 20 mppcf

Component: TITANIUM DIOXIDE
CAS Number: 13463-67-7
ACGIH TLV-TWA: 10 mg/m3
OSHA PEL-TWA: 15 mg/m3

Material Safety Data Sheet
SEALUM SM-501

SECTION #3 - PHYSICAL DATA

Boiling Point: N/AP°F
Melting Point: N/AP°F
Vapor Pressure: 7.5MM
Vapor Density (Air=1): 4.7
Specific Gravity: 1.41
Solubility (H2O): INSOLUBLE
Percent Volatiles: 20%

Appearance

WHITE PASTE

Odor

PETROLEUM ODOR

SECTION #4 - FIRE FIGHTING & EXPLOSION DATA

Flash Point: 104°F 40°C TCC
Autoignition: UNKNOWN°F

Flammability Class: COMB

Lower Explosive Limit (%): 1.0
Upper Explosive Limit (%): 6.2

Fire and Explosion Hazards

VAPORS ARE HEAVIER THAN AIR AND MAY TRAVEL ALONG THE GROUND AND BE IGNITED BY PILOT LIGHTS, FLAMES AND OTHER IGNITION SOURCES DISTANT FROM MATERIAL HANDLING AREA.

Extinguishing Media

CARBON DIOXIDE, DRY CHEMICAL OR FOAM

Special Fire Fighting Instructions

WEAR NIOSH/MSA APPROVED SELF-CONTAINED BREATHING APPARATUS AND FULL PROTECTIVE GEAR.

SECTION #5 - EXPOSURE and EFFECTS - INHALATION

Routes of Exposure - Inhalation

MAY CAUSE A REVERSIBLE INFLAMMATORY EFFECT ON THE UPPER RESPIRATORY SYSTEM. MAY CAUSE CNS EFFECTS SUCH AS ANESTHESIA, DROWSINESS, DIZZINESS, DECREASE IN MOTOR FUNCTIONS, CONVULSIONS, TREMORS, NARCOSIS OR BEHAVIORAL CHANGES ON

SECTION #7 - SPILL, LEAK, & DISPOSAL PROCEDURES Continued...

Waste Disposal Methods

SARA Hazard Classes: Acute Health Hazard
Chronic Health Hazard
Fire Hazard

SECTION #8 - SPECIAL PROTECTIVE MEASURES

Ventilation

LOCAL EXHAUST - FRESH AIR
MECHANICAL - POSITIVE AIR DILUTION.

Eye Protection

GOGGLES IF POWER EXTRUDED.

Skin Protection

SOLVENT RESISTANT GLOVES, COVERALLS TO PROTECT CLOTHING.

Respiratory Protection

FRESH AIR SUPPLY

Other Protection

AS REQUIRED BY YOUR COMPANY.

SECTION #9 - SPECIAL PRECAUTIONS - STORAGE & HANDLING

Storage & Handling Conditions

AVOID BREATHING VAPOR. USE ADEQUATE VENTILATION. KEEP CONTAINER CLOSED AND STORE AWAY FROM SPARKS AND OPEN FLAMES. AVOID CONTACT WITH EYES, SKIN AND CLOTHING. DO NOT TAKE INTERNALLY. WASH AFTER HANDLING. MATERIAL IS COMBUSTIBLE. MAY BE HARMFUL IF SWALLOWED. VAPOR HARMFUL.
KEEP CONTAINER CLOSED WHEN NOT IN USE.
FOR INDUSTRIAL USE ONLY.
KEEP OUT OF REACH OF CHILDREN.

SECTION #10 - SHIPPING INFORMATION

Proper Shipping Name: SEALER N.O.S.

Material Safety Data Sheet SEALUM SM-501	Page: 6 10/09/89

SECTION #10 - SHIPPING INFORMATION Continued...

Hazard Class: COMBUSTIBLE

DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES

The data in this Material Safety Data Sheet relates only to the specific material herein and does not relate to use in combination with any other material or in any process. The information set forth herein is based on technical data that Chemseco believes to be reliable as of the date hereof. Since conditions of use are outside our control, we make no warranties, express or implied and assume no liablilty in connection with any use of this information. Nothing herein is to be taken as a license to operate under or a recommendation to infringe on any patents

MATERIAL SAFETY DATA SHEET

GSSI Sealants®

Gulf States Specialties, Inc.
P.O. Box 508
South Houston, Texas 77587
Telephone: 1-800-662-0987

Section One — PRODUCT INFORMATION

Gulf States Specialties, Inc.
300 Christy Place
South Houston, TX 77587

Product Name: BP-300

Proper Shipping Name: Flammable Liquid

Section Two — HAZARDOUS INGREDIENTS INFORMATION

Chemical Name	C.A.S. No.	% by Weight	ACGIH TLV	OSHA PEL
Light Aliphatic Solvent Naphtha	64742-47-8	13-17	300 ppm	500 ppm
Quartz (SiO_2)	14808-60-7	<1	0.1 mg/m^3 (TWA)	

Section Three — PHYSICAL AND CHEMICAL DATA

Physical State: Paste
Appearance & Odor: Gray paste with characteristic aliphatic solvent naphtha odor.
Boiling Point: 240-285°F
Specific Gravity (water = 1): 1.20-1.30
Evaporation Rate (ethyl ether = 1): 9.2
Percent Volatiles: 13-17%
Solubility in Water: 0.5%
Vapor Pressure: 45 mm Hg @ 78°F, 26°C
Vapor Density (air = 1): 3.8
Percent Solids (by weight): 83-87%
Melting Point: N.A.

Section Four

FIRE & EXPLOSION HAZARD DATA

Flash Point: 52°F

Method Used: Estimate based on the flash point of the most volatile component.

Flammable Limits: LEL: 0.9 UEL: N.A.

Proper Extinguishing Media: Foam, dry chemical or carbon dioxide. Water may be ineffective, but water should be used to keep fire exposed containers cool.

Recommended Firefighting Procedures: Treat as a class "B" fire. Limit fire fighting to those trained to do so. If a leak or spill has ignited, use water spray to disperse the vapors and to protect the men attempting to stop the leak. Minimize breathing gases, vapor, fumes, or decomposition products. Use supplied-air breathing equipment for enclosed or confined spaces or as otherwise needed.

Unusual Fire & Explosion Hazards: Vapors are heavier than air and may travel along the ground and be ignited by ignition sources distant from the handling point. Residue in "empty" containers may be explosive if exposed to an ignition source. To prevent fire or explosion from static accumulation and discharge, effectively ground the product transfer system.

Section Five

HEALTH HAZARD DATA

Medical Conditions Aggravated by Exposure: Pre-existing eye, skin, and pulmonary disorders may be aggravated by exposure to this product.

Primary Route of Entry:

skin absorption	yes
inhalation	yes
ingestion	yes
eye contact	yes

Signs and Symptoms of Exposure:

eye contact: Can cause severe irritation, redness, tearing, blurred vision.

skin contact: Can cause redness, irritation, defatting, dermatitis.

inhalation: Prolonged inhalation of vapors may cause irritation of the respiratory tract. Intentional misuse by deliberately concentrating and inhaling vapor may be harmful or fatal.

ingestion: Can cause gastrointestinal irritation, nausea, vomiting, diarrhea.

Emergency and First Aid Procedures:

In eyes:	Flush with large amounts of water, frequently flushing under the lids. Seek medical attention.
on skin:	Wash with soap and water. Get medical attention if irritation persists.
inhaled:	Remove affected person to fresh air, give oxygen or artificial respiration as necessary to assist breathing. Get medical attention.
ingested:	Do not induce vomiting. Get medical attention.

Acute Effects of Overexposure: Irritation, redness.

Chronic Effects: (include all potential carcinogens present @ .1% or greater) The International Agency for Research on Cancer (IARC) Monographs has identified respirable quartz (SiO_2) as a suspect human cancer-causing agent based on limited human evidence but sufficient evidence in experimental animals (Class 2A).
Exposure to respirable quartz will not be possible with this product under normal conditions of use.

Carcinogenicity: NTP? No IARC Monographs? Yes OSHA regulated? No

Section Six — REACTIVITY DATA

Stability: Stable.

Conditions to Avoid: None known.

Hazardous Decomposition Products: In the event of partial combustion, fumes, smoke, carbon monoxide, aldehydes, and other decomposition products may be released.

Hazardous Polymerization: Will Not Occur

Incompatibility: None Known.

Section Seven — PRECAUTIONS FOR SAFE HANDLING AND USE

Ventilation: General exhaust as needed to keep TLV below recommended levels if engineering or administrative controls are not adequate.

Section Seven (Continued)

Personal Protective Equipment:

Respirator: For large spills or entry into enclosed small spaces with inadequate ventilation, a pressure demand, self-contained breathing apparatus is recommended. If engineering or administrative controls are not adequate to maintain solvent TLV below recommended levels, an appropriate respirator should be used in conjunction with a respirator use and fit training program. Although ADCO Products, Inc. has no control over the customer's method of using this product, **under conditions of normal use the respirable quartz contained in the product is a completely incorporated component, and as such should not present an inhalation hazard.**
Gloves: Buna-N, if needed.
Eye Protection: Safety glasses with side shields if needed.
Other Protective Clothing/Articles: To prevent repeated or prolonged skin contact, wear impervious clothing and boots if contact is likely.

Work/Hygienic Practices: Minimize breathing vapor. Avoid prolonged or repeated contact with the skin. Remove contaminated clothing and launder before reuse. Cleanse skin thoroughly after contact, before work breaks and meals, and at the end of the work day. Product is readily removed from the skin with waterless hand cleaners followed by washing thoroughly with soap and water.

Steps To Be Taken in Case Material is Released or Spilled: Eliminate all ignition sources. Control the source of the spill if it is safe to do so. Ventilate enclosed areas to prevent vapor accumulation. Restrict access by unauthorized personnel. Absorb spilled product with vermiculite or other absorbant material. Shovel or scoop into a sealable container for disposal.

Waste Disposal Method: If this product becomes a waste, it is considered a hazardous waste due to it's ignitability. Dispose of in accordance with local, state, and federal environmental and waste regulations.

Storage and Handling Procedures: Do not store or handle near an ignition source. Keep containers closed. Effectively ground the product transfer system to prevent fire or explosion from static discharge. Empty containers may contain residual product. Do not reuse containers unless properly reconditioned.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:
Skin contact may aggravate an existing dermatitis.

EMERGENCY AND FIRST AID PROCEDURES:
Skin Contact- Remove contaminated clothing. Wash with soap and water for 15 minutes.
Eye Contact - Flush with warm water for 15 minutes. Seek medical attention.
Inhalation - Move victim to fresh air. If breathing has stopped give artificial respiration. Seek immediate medical attention.
Ingestion - DO NOT INDUCE VOMITING. Seek immediate medical attention.

==========SECTION VIII - PRECAUTIONS FOR SAFE HANDLING AND USE==========

STEPS TO BE TAKEN IN CASE MATERIAL IS SPILLED OR RELEASED:
Eliminate all ignition sources, contain spill and shovel into an appropriate container.

WASTE DISPOSAL METHOD:
Dispose of product in accordance with local, state and federal compliance regulations.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:
There should be NO SMOKING allowed in the areas where this product is used. Keep away from all heat and ignition sources as well as oxidizing agents. Store product below 80 F and rotate stock continually.

==========SECTION IX - CONTROL MEASURES==========

RESPIRATORY PROTECTION:
Use OSHA/NIOSH approved cartridge respirator with organic vapor cartridges. 500 ppm: CCROV/SA/SCBA

VENTILATION:
LOCAL EXHAUST: If needed
MECHANICAL: If needed
SPECIAL: N/A
OTHER: N/A

GLOVES: Chemical resistant; Imperious
EYE PROTECTION: Safety glasses

OTHER PROTECTIVE CLOTHING OR EQUIPMENT:
Use a chemical apron to protect clothing if needed.

WORK/HYGIENIC PRACTICES:
Always wash hands after working with this material; Use good hygiene practices.

========== SECTION X - DISCLAIMER ==========

This document may be used to comply with OSHA's Hazardous Communication Standard, 29 CFR 1910.1200.

The opinions expressed herein are those of qualified experts within Schnee Morehead, Inc. We believe that the information contained herein is current as of the date of this Material Safety Data Sheet. Since the use of this information and the use of this product are not within the control of Schnee Morehead, Inc., it is the user's obligation to determine the conditions of safe use of this product.

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MATERIAL SAFETY DATA SHEET

This MSDS complies with OSHA'S Hazard Communication Standard 29 CFR 1910.1200 and OSHA Form 174

IDENTITY AND MANUFACTURER'S INFORMATION

NFPA Rating: Health-2; Flammability-4; Reactivity-0; Special-0	HMIS Rating: Health-2; Flammability-4; Reactivity-0; Personal Protection-B
Manufacturer's Name: AMREP, INC. Address: 990 Industrial Park Drive Marietta, GA 30062	DOT Hazard Classification: ORM-D Identity (trade name as used on label): MISTY HEAVY DUTY ADHESIVE SPRAY
Date Prepared: 04/27/95 Prepared By: ES/KD	MSDS Number: 315 Revision- 6
Information Calls: (404)422-2071 EMERGENCY RESPONSE NUMBER: 1(800)255-3924	NOTICE: JUDGEMENT BASED ON INDIRECT TEST DATA

SECTION 1 - MATERIAL IDENTIFICATION AND INFORMATION

COMPONENTS-CHEMICAL NAMES AND COMMON NAMES (Hazardous Components 1% or greater; Carcinogens 0.1% or greater)	CAS Number	SARA III LIST	OSHA PEL (ppm)	ACGIH TLV (ppm)	Carcinogen Ref. Source **
ACETONE	67-64-1	Yes	1000	750	d
HEXANE	110-54-3	Yes	50	50	d
ISOBUTANE / PROPANE BLEND	75-28-5	No	800	800	d
	74-98-6	No	1000	1000	d

SECTION 2 - PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point: N/A	Specific Gravity (H2O=1): Concentrate Only = 0.853
Vapor Pressure: PSIG @ 70°F (Aerosols): Max.80	Vapor Pressure (Non-Aerosols)(mm Hg and Temperature): N/A
Vapor Density (Air = 1): N/E	Evaporation Rate (= 1): N/E
Solubility in Water: Partial	Water Reactive: No
Appearance and Odor: Straw colored liquid with ketone solvent odor.	

SECTION 3 - FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY as per USA FLAME PROJECTION TEST (aerosols) EXTREMELY FLAMMABLE	Auto Ignition Temperature N/E	Flammability Limits in Air by % in Volume: % LEL: N/E % UEL: N/E
FLASH POINT AND METHOD USED (non-aerosols): N/A EXTINGUISHER MEDIA: Foam, dry chemical, carbon dioxide, water.	SPECIAL FIRE FIGHTING PROCEDURES: Self-contained breathing apparatus. Use water fog to cool containers to prevent rupturing & exploding containers. Provide shielding for personnel.	
Unusual Fire & Explosion Hazards: Do not expose aerosols to temperatures above 130°F or the container may rupture.		

SECTION 4 - REACTIVITY HAZARD DATA

STABILITY [X] STABLE [ ] UNSTABLE	HAZARDOUS POLYMERIZATION [ ] WILL [X] WILL NOT OCCUR
Incompatibility (Mat. to avoid): Strong oxidizing agents.	Conditions to Avoid: Open flame, welding arcs, heat, sparks.
Hazardous Decomposition Products: Carbon dioxide, carbon monoxide.	

SECTION 5 - HEALTH HAZARD DATA

PRIMARY ROUTES OF ENTRY: [X] INHALATION [ ] INGESTION [X] SKIN ABSORPTION [ ] EYE [ ] NOT HAZARDOUS

ACUTE EFFECTS

Inhalation: Excessive inhalation of vapors can cause nasal & respiratory irritation, dizziness, weakness, nausea, headache, possible unconsciousness or asphyxiation.

Eye Contact: Irritation.	Skin Contact: Irritation due to defatting of skin.

Ingestion: Possible chemical pneumonitis if aspirated into lungs.

CHRONIC EFFECTS: (Effects due to excessive exposure to the raw materials of this mixture) Excessive inhalation of hexane may cause nerve damage.

Medical Conditions Generally Aggravated by Exposure: May aggravate existing eye, skin, or upper respiratory conditions.

EMERGENCY FIRST AID PROCEDURES

Eye Contact: Flush with water for 15 minutes. If irritated, seek medical attention.

Skin Contact: Wash with soap and water. If irritated, seek medical attention.

Inhalation: Remove to fresh air. Resuscitate if necessary. Get medical attention.

Ingestion: DO NOT INDUCE VOMITING. Drink two large glasses of water. Get immediate medical attention.

SECTION 6 - CONTROL AND PROTECTIVE MEASURES

Respiratory Protection (specify type): If vapor concentration exceeds TLV, use respirator approved by NIOSH in positive pressure mode.

Protective Gloves: Neoprene.	Eye Protection: Safety glasses recommended.

Ventilation Requirements: Adequate ventilation to keep vapor concentration below TLV.

Other Protective Clothing & Equipment: None

Hygienic Work Practices: Wash with soap and water before handling food. Remove contaminated clothing.

SECTION 7 - PRECAUTIONS FOR SAFE HANDLING AND USE

Steps To Be Taken If Material Is Spilled Or Released: Absorb with suitable medium. Incinerate or landfill according to local, state or federal regulations. DO NOT FLUSH TO SEWER.

Waste Disposal Methods: Aerosol cans when vented to atmospheric pressure through normal use, pose no disposal hazard.

Precautions To Be Taken In Handling & Storage: Do not puncture or incinerate containers. Do not store at temperatures above 130°F.

Other Precautions &/or Special Hazards: KEEP OUT OF REACH OF CHILDREN. Avoid food contamination. Avoid breathing vapors. Remove ignition sources.

We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind.

** Chemical Listed as Carcinogen or Potential Carcinogen. [a] NTP [b] IARC Monograph [c] OSHA [d] Not Listed [e] Animal Data Only

SPRAY ADHESIVE

U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration

Form Approved
OMB No. 44-R1387

MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing, Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I

MANUFACTURER'S NAME	EMERGENCY TELEPHONE NO.
Voltek, Division of Sekisui America Corp.	(617) 685-2557
ADDRESS (Number, Street, City, State, and ZIP Code): 100 Shepard Street, Lawrence, MA 01843	
CHEMICAL NAME AND SYNONYMS: Cross-linked polyolefin foam	TRADE NAME AND SYNONYMS: VOLARA "A"
CHEMICAL FAMILY: Polyolefin	FORMULA: $(C_2H_5)_n$

SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS N/A			BASE METAL		
CATALYST N/A			ALLOYS		
VEHICLE N/A			METALLIC COATINGS		
SOLVENTS N/A			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES N/A			OTHERS		
OTHERS					

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES	%	TLV (Units)

SECTION III - PHYSICAL DATA

BOILING POINT (°F.)	N/A	SPECIFIC GRAVITY (H_2O=1)	0.025-0.19
VAPOR PRESSURE (mm Hg.)	N/A	PERCENT, VOLATILE BY VOLUME (%)	None
VAPOR DENSITY (AIR=1)	N/A	EVAPORATION RATE (_____ =1)	N/A
SOLUBILITY IN WATER	Zero		
APPEARANCE AND ODOR	Foam material - normally white - no odor		

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	FLAMMABLE LIMITS	Lel	Uel
N/A			

EXTINGUISHING MEDIA
Water

SPECIAL FIRE FIGHTING PROCEDURES
None

UNUSUAL FIRE AND EXPLOSION HAZARDS
None known

(Continued on reverse side)

FOAM CLOSURE STRIPS

45

Material Safety Data Sheet

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements.

U.S. Department of Labor
Occupational Safety and Health Administration
(Non-Mandatory Form)
Form Approved
OMB No. 1218-0072

IDENTITY (As Used on Label and List) ACRYLINK	Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

Section I

Manufacturer's Name	Emergency Telephone Number
Isothermal Protective Coatings, Inc.	(713) 485-4440
Address (Number, Street, City, State, and ZIP Code)	Telephone Number for Information
13800 O'Day Rd., Rt. 3, Box 3800	(713) 485-4440
Pearland, Texas 77581	Date Prepared 10/15/87
	Signature of Preparer (optional)

Section II — Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity; Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
Ethylene Glycol Mono Butyl Ether	50 ppm	25 ppm		0.4%
Methanol Methyl Alcohol	200 ppm	200 ppm		1.2%
Dimethyl Amino Ethanol DMAE	None Estab.	None Estab.		0.1%
Phenyl Mecuric Acetate PMA	100 mg/L	100 mg/L		0.02%

Section III — Physical/Chemical Characteristics

Boiling Point	212°F.	Specific Gravity (H_2O = 1)	1.34
Vapor Pressure (mm Hg.)	17mm@20°C	Melting Point	24°F.
Vapor Density (AIR = 1)	0.62	Evaporation Rate (Butyl Acetate = 1)	N/A

Solubility in Water: Soluble.

Appearance and Odor: White, viscous liquid, slight odor.

Section IV — Fire and Explosion Hazard Data

Flash Point (Method Used)	Flammable Limits	LEL	UEL
N/A	N/A	N/A	N/A

Extinguishing Media: Water, fog, or foam.

Special Fire Fighting Procedures: Latex is non-flammable - Dry film will burn with external source of ignition - Extinguish with fog or foam.

Unusual Fire and Explosion Hazards: None.

FIELD APPLIED TOP COAT SEALANT

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE

EFFECTS OF OVEREXPOSURE

N/A

EMERGENCY AND FIRST AID PROCEDURES

Material is a solid

SECTION VI - REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID: Fire
	STABLE	X	

INCOMPATABILITY *(Materials to avoid)*

HAZARDOUS DECOMPOSITION PRODUCTS

Unknown decomposition products when burned-consider as toxic

HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Material is a solid

WASTE DISPOSAL METHOD

Dumping

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION *(Specify type)*

In its manufactured state - none

VENTILATION	LOCAL EXHAUST: N/A	SPECIAL
	MECHANICAL *(General)*	OTHER

PROTECTIVE GLOVES: Not required unless heating foam	EYE PROTECTION: Normally not required

OTHER PROTECTIVE EQUIPMENT

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

OTHER PRECAUTIONS

Form OSHA-20
Rev. May 72

FOAM CLOSURE STRIPS

Material Safety Data Sheet
May be used to comply with
OSHA's Hazard Communication Standard.
29 CFR 1910.1200. Standard must be
consulted for specific requirements.

U.S. Department of Labor
Occupational Safety and Health Administration
(Non-Mandatory Form)
Form Approved
OMB No. 1218-0072

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IDENTITY (As Used on Label and List) ACRYLINK

Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

Section I

Manufacturer's Name Isothermal Protective Coatings, Inc.	Emergency Telephone Number (713) 485-4440
Address (Number, Street, City, State, and ZIP Code) 13800 O'Day Rd., Rt. 3, Box 3800	Telephone Number for Information (713) 485-4440
Pearland, Texas 77581	Date Prepared 10/15/87
	Signature of Preparer (optional)

Section II — Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity; Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
Ethylene Glycol Mono Butyl Ether	50 ppm	25 ppm		0.4%
Methanol Methyl Alcohol	200 ppm	200 ppm		1.2%
Dimethyl Amino Ethanol DMAE	None Estab.	None Estab.		0.1%
Phenyl Mecuric Acetate PMA	100 mg/L	100 mg/L		0.02%

Section III — Physical/Chemical Characteristics

Boiling Point	212°F.	Specific Gravity (H_2O = 1)	1.34
Vapor Pressure (mm Hg.)	17mm@20°C	Melting Point	24°F.
Vapor Density (AIR = 1)	0.62	Evaporation Rate (Butyl Acetate = 1)	N/A

Solubility in Water
Soluble.

Appearance and Odor
White, viscous liquid, slight odor.

Section IV — Fire and Explosion Hazard Data

Flash Point (Method Used)	Flammable Limits	LEL	UEL
N/A	N/A	N/A	N/A

Extinguishing Media
Water, fog, or foam.

Special Fire Fighting Procedures
Latex is non-flammable - Dry film will burn with external source of ignition - Extinguish with fog or foam.

Unusual Fire and Explosion Hazards
None.

FIELD APPLIED TOP COAT SEALANT

Section V — Reactivity Data

Stability	Unstable		Conditions to Avoid: Freezing could damage product.
	Stable	X	

Incompatibility (*Materials to Avoid*): None.

Hazardous Decomposition or Byproducts: Burning of dry film could yield CO, CO_2, water.

Hazardous Polymerization	May Occur		Conditions to Avoid
	Will Not Occur	X	

Section VI — Health Hazard Data

Route(s) of Entry: Inhalation? Yes Skin? No Ingestion? No

Health Hazards (*Acute and Chronic*): None expected.

Carcinogenicity: NTP? None of the ingredients is considered to be a carcinogen. IARC Monographs? OSHA Regulated?

Signs and Symptoms of Exposure: None

Medical Conditions Generally Aggravated by Exposure: None expected

Emergency and First Aid Procedures: Eyes: Flush with water.

Skin: Flush with water.

Section VII — Precautions for Safe Handling and Use

Steps to Be Taken In Case Material Is Released or Spilled: Scoop up large quantities into suitable containers. Mop up with wet rags. Flush with water.

Waste Disposal Method: Dispose of waste in approved site in accordance with Federal and/or State regulations covering solid waste disposal.

Precautions to Be Taken in Handling and Storing: Store at room temperatures. Excessive heat or freezing could damage product.

Other Precautions: None.

Section VIII — Control Measures

Respiratory Protection (*Specify Type*): Not normally required.

Ventilation	Local Exhaust: Not normally required.	Special: N/A	
	Mechanical (*General*): Recommended.	Other: N/A	

Protective Gloves: Not normally required. Eye Protection: Goggles to avoid splashes.

Other Protective Clothing or Equipment: Not normally required.

Work/Hygienic Practices: Wash hands before eating.

* USGPO 1994-491-529/45775

INSULATION PRODUCTS

1. Fiberglass Blanket
2. Laminated Facings (3)
3. Bonding Adhesive to laminate facing to blanket
4. Thermal Spacers

MATERIAL SAFETY DATA SHEET

KNAUF

Product: KNAUF FIBER GLASS INSULATION

Knauf Fiber Glass GmbH
240 Elizabeth Street
Shelbyville, IN 46176-1496
USA

Revision Date: 05/12/98

Emergency Contact: Kevin Donohue
Emergency Phone: 317-398-4434

Technical Services: John Coombs
Phone: 317-398-4434

SECTION I: MATERIAL IDENTIFICATION

Description: Phenolic resin bonded fibrous glass insulation

Chemical Name: N/A

Common Name: Fiber Glass Insulation

Chemical Formula: N/A

Chemical Family: N/A

OTHER DESIGNATIONS (Synonyms):

THIS DATA IS APPLICABLE TO ALL KNAUF BONDED AND CURED FIBROUS GLASS PRODUCTS INCLUDING:

Pipe Insulation*	Acoustical Board
Pipe & Tank Insulation*	Black Blanket Insulation
Insulation Board*	Rigid Duct Liner
Elevated Temperature Board, Panel, Blanket*	Metal Building Insulation
Fabrication Board*	OEM Blanket
Hullboard*	Flexible Duct Material
Amber Blanket Insulation	Water Heater Insulation
Wall Insulation	Manufactured Housing
Air Duct Board	Commercial Building Insulation
Duct Wrap	Unfaced Residential Insulation
Duct Liner E•M	Kraft Faced Residential Insulation
Equipment Liner M	Foil Faced Residential Insulation
Linear Ceiling Diffuser Blanket	FSK Foil Faced Residential Insulation
KN Series	Sill Sealer
*See "Heat-up Precautions" in Section IX	KFR Range Insulation*

While the information and recommendations set forth herein are believed to be accurate as of the date of preparation, THE MANUFACTURER MAKES NO WARRANTY WITH RESPECT THERETO AND DISCLAIMS ALL LIABILITY FROM RELIANCE THEREON. For additional information contact: John Coombs, (317) 398-4434.

SECTION II: INGREDIENTS AND EXPOSURE LIMITS

Ingredient Name:	CAS Number:	%	Exposure Limits:
Fibrous Glass	65997-17-3	83-97	TLV: 1f/cc** PEL: 15 mg/m³ Total Nuisance Particulate 5 mg/m³ Respirable Nuisance Particulate
Urea Extended Phenolic Resin (cured)	25104-55-6	3-17	PEL: N/A TLV: N/A

**Based on prudence and not significant risk, ACGIH and Knauf recommends a maximum exposure level of 1 fiber/cc (8 hour TWA, NIOSH 7400 B method) for fibrous glass.

SECTION III: PHYSICAL DATA

SECTION III - PHYSICAL DATA

Product Uses: Thermal Insulation

Appearance and Odor: Yellow or black fibrous product, no appreciable odor. Some products have vinyl, kraft paper, foil or glass cloth facing.

Boiling Point: N/A
Evaporation Rate: N/A
Vapor Density: N/A
Water Solubility: Insoluble
Specific Gravity: Variable

Melting Point: N/A
Vapor Pressure: N/A
Pure/Mixture: Mixture
Physical State: Solid

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flash Point [method]: N/A

LEL: N/A
UEL: N/A

Auto Ignition Temp.: Not Determined

Fire and Explosion Hazards: Resin, paper or plastic facings will burn causing dense acrid smoke. Vinyl faced products in fire conditions give off hydrogen chloride, a highly irritating gas.

Extinguishing Method: Use water, foam, dry chemical or carbon dioxide.

Fire Fighting Procedures: Wear self contained breathing apparatus and protective clothing. Dense smoke may limit visibility in enclosed areas.

Combustion Products: CO, CO_2, Hydrocarbon particulate.

SECTION V - HAZARDS IDENTIFICATION

Hazard Summary: The International Agency for Research on Cancer (IARC) has classified fiber glass wool as a possible cancer causing agent to humans when inhaled in the lungs. This classification was substantially based on experiments in which fiber glass wool was injected or implanted in animals. However, large scale human mortality studies of U.S. and European fiber glass wool factory workers did not provide conclusive evidence that fiber glass wool caused cancer in humans. However, IARC does regard it prudent to treat any material for which there is sufficient evidence of carcinogenicity in animals as if it were a possible human carcinogen. Therefore, IARC has classified respirable dust from this product in Group 2B (possibly carcinogenic).

Even though the present epidemiological data is not conclusive, OSHA's interpretation of it requires that a warning label be placed on the product. This warning identifies a possible hazard while not identifying the degree of risk. OSHA believes the risk is not a threat to your health as long as the exposure to fiber glass wool is less than 1 fiber/cubic centimeter (cc) TWA (8 hour time weighted average). Fiber glass wool exposure in the home, commercial buildings, and manufacturing facilities are generally found to be well below 1 fiber/cc. Installers and fabricators should be aware of their exposure levels and take appropriate actions if needed per recommended work practices. Knauf STRONGLY recommends following all safe work practices while working with and/or installing fiber glass wool products.

Medical Conditions Aggravated: Pre-existing upper respiratory and lung diseases may be aggravated by dust. The product is a mechanical irritant for skin, eyes and upper respiratory system.

Effects of Overexposure: Itching and irritation of the upper respiratory tract.

Acute Health Effects: Mechanical irritation of the skin, eyes, and upper respiratory system.

SECTION V: HAZARDS IDENTIFICATION (Continued)

Chronic Health Effects: There are confirmed reports of contact dermatitis. A 1987 epidemiological study of more than sixteen thousand U.S. man-made vitreous fiber manufacturing workers has shown no statistically significant increased risks of malignant or nonmalignant diseases. A 1990 update of this study reported a small, statistically significant increase in respiratory cancer among workers when compared with populations in their communities. Confounding factors (such as smoking, exposure to other hazardous materials etc.) are thought to be responsible for this small apparent increase, and an expanded study is currently underway to investigate other possible contributing factors.

Primary Entry Route: Inhalation, skin and eye contact.

Target Organs: Skin, eyes and respiratory system including the lungs.

Irritancy: Product can be a mechanical irritant.

Sensitization: There have been reports of reactions among persons with extreme chemical hypersensitivity.

HMIS and NFPA Hazard Rating:

Category	HMIS	NFPA
Acute Health	1	1
Flammability	0	NA/1 (facing, packaging)
Reactivity	0	0

SECTION VI: REACTIVITY DATA

Stability: Material is stable.

Hazardous Polymerization: Will not occur.

Incompatible Chemicals: Hydrofluoric acid will dissolve glass.

Conditions to Avoid: None in designed use.

Decomposition Products: Facing and binder burns or decomposes in a fire. Decomposition products are carbon monoxide, carbon dioxide, carbon particulate and traces of hydrogen cyanide from pyrolysis of the resin. The vinyl faced products will emit hydrogen chloride in a fire.

SECTION VII: SPILL, LEAK & DISPOSAL PROCEDURES

Special Handling: Keep material dry and minimize the generation of dust.

Spill or Leak Procedures: Pick up and discard large pieces. Vacuum clean dust. Use a dust suppressant if sweeping is necessary.

Waste Disposal: This material is not regulated under "RCRA" hazardous waste regulations. May be disposed in landfill. Comply with federal, state and local regulations.

SECTION VIII: FIRST AID/PERSONAL PROTECTION

Signs and Symptoms of Overexposure: Itching, irritation and soreness of the upper respiratory system.

FIRST AID---

EYES: Flush eyes with flowing water for at least 15 minutes. If irritation persists consult a physician.

SECTION IX: [illegible]

SECTION VIII - FIRST AID/PERSONAL PROTECTION continued from page 3

SKIN: Frequent rinsing of skin surface with water to remove accumulated fibers will minimize irritation. If irritation persists consult a physician. Treat as a mechanical irritant.

INHALATION: Remove to fresh air. Drink water to clear throat and blow nose to evacuate fibers.

INGESTION: Non hazardous when ingested. May cause discomfort or irritation of the GI tract.

PERSONAL PROTECTION---

EYE PROTECTION: Safety glasses, goggles or faceshields should be worn when materials are being handled or applied.

GLOVES: Gloves are recommended.

SPECIAL CLOTHING: Long-sleeved, long-legged, loose fitting clothing and head covering are recommended. Wash work clothes separately from other clothing to prevent glass fiber migration. Rinse washer thoroughly.

RESPIRATOR: A NIOSH-certified disposable or reusable particulate respirator with an efficiency rating of N95 or higher (under 42 CFR 84) is recommended for the following applications:

- Enclosed or poorly ventilated spaces
- When working with power tools
- When working in very high dust environments

WORKPLACE VENTILATION: If sufficient natural ventilation is not available, use mechanical ventilation to assure exposures to airborne dust remain below the recommended levels.

SECTION IX - SPECIAL PRECAUTIONS

HEAT-UP PRECAUTIONS: During initial heat-up of high temperature insulation products to temperatures above 350°F, an acrid odor and smoke may be given off. Adequate ventilation should be provided to protect against harmful fumes. In confined spaces, occupants should wear self-contained breathing apparatus during this period.

SECTION X - OTHER REGULATIONS

California Prop. 65 Statement: Warning. This product contains the following substance(s) known to the State to cause cancer: Fiber glass (glass wool, airborne particles of respirable size).

ABBREVIATIONS:	
ACGIH (U.S.)	American Conference of Governmental Industrial Hygienists
CAS (U.S.)	Chemical Abstract Service
EPA (U.S.)	Environmental Protection Agency
IARC (Int'l)	International Agency for Research on Cancer
LEL	Lower Exposure Limit
N/A	Not Applicable
NFPA (U.S.)	National Fire Protection Association
NIOSH	National Institute of Occupational Safety and Health
NTP (U.S.)	National Toxicology Program
OSHA (U.S.)	Occupational Safety and Health Administration
PEL (U.S.)	Permissible Exposure Limit
RCRA (U.S.)	Resource Conservation and Recovery Act
TLV	Threshold Limit Value
UEL	Upper Exposure Limit

SECTION XI - [illegible]

Atlas VAPOR RETARDERS

MADE IN AMERICA
AN AMERICAN OWNED COMPANY

ATLAS 96®

Vinyl Film

This Product Safety Information Sheet is principally directed to managerial, safety, hygiene and medical personnel. The description of physical, chemical and toxicological properties and handling advice is based on experimental results and past experience. It is intended as a starting point for the development of health and safety procedures.

This Product Safety Information Sheet meets the material safety data sheet (MSDS) requirements of the federal OSHA Hazard Communication standard (29 CFR 1910.1200).

New Issue 6/94
Supersedes Issue Dated 7/86
ULT.559.P

I. PHYSICAL/CHEMICAL PROPERTIES

CHEMICAL COMPOSITION:

Polyvinyl chloride pigmented film

PHYSICAL STATE:

This material is an article supplied in roll form. As such, the material itself does not pose physical or health hazards under normal use.

COLOR:

White. Custom colors available.

MELTING POINT:

300°F (149°C) (softens)

DECOMPOSITION TEMPERATURE:

500°F (260°C)

BULK DENSITY OF SOLID:

87 - 94 lbs/ft

SOLUBILITY:

Product may be softened by various organic solvents such as ketones, xylenes, benzene, etc.

IN CASE OF SUSPECTED POISONING, REFER TO THE INFORMATION IN SECTION VI:HUMAN HEALTH AND THE PROCEDURE AND EMERGENCY CONTACTS IN SECTION VII:FIRST AID.

II. CHEMICAL REACTIVITY

The product is relatively inert. It will not react with air or water.

III. STABILITY

The product has an indefinite shelf life under ambient handling and storage conditions. It may become brittle at temperatures below 10°F (-12°C).

VyTech Industries Incorporated • P.O. Box 5288
Pearman Dairy Road • Anderson, South Carolina 29623
Phone (864) 225-1459 • FAX (864) 224-8410
E MAIL: atlas@vytech.com

IV. FIRE HAZARD

Under fire conditions, the product will decompose to give off hydrogen chloride.
The product has an Underwriters Laboratory Fire Hazard rating of 15 flame spread and 105 smoke generation. It is self-extinguishing once the source of ignition is removed.

V. FIREFIGHTING TECHNIQUE

Vapors are irritating to the respiratory tract and will cause breathing difficulty. Symptoms may be delayed several hours or longer depending upon exposure.

As in any fire, prevent human exposure to fire, smoke, fumes or products of combustion. Evacuate nonessential personnel from the fire area.

Wear full-face, self-contained breathing apparatus and impervious protective clothing (such as gloves, hoods, suits, and rubber boots).

Use standard firefighting techniques to extinguish fires involving this product – use water spray, dry chemical foam, carbon dioxide or halogenated extinguishing agents.

VI. HUMAN HEALTH

The material poses no health hazards and no medical conditions are generally recognized as being aggravated by handling the product.

VII. FIRST AID

If an adverse reaction occurs after exposure, promptly start the recommended procedures below. Seek medical attention if further treatment is required.

INGESTION

These materials are rolls of plastic intended for use in the manufacture of industrial insulated facing. Should accidental ingestion occur, seek medical advice.

INHALATION

Under normal handling conditions, inhalation exposure is unlikely. However, under fire conditions or conditions of extreme heat, remove the victim to fresh air. Seek medical attention if respiratory irritation occurs.

VIII. CORROSIVITY TO MATERIALS OF CONSTRUCTION

Noncorrosive to materials commonly used in the construction of process equipment, storage and shipping containers.

XI. STORAGE REQUIREMENTS

Containers should be stored in a cool, dry, well ventilated area away from flammable materials and sources of heat or flame. Protect from temperatures below 10°F (-12°C), the product may become brittle at lower temperatures.

X. DISPOSAL OF MATERIAL

Material that cannot be used or chemically reprocessed should be disposed of by methods recommended for solid waste disposal in accordance with any applicable regulations under the Resource Conservation and Recovery Act.
NOTE: State and local regulations may be more stringent than federal.

MADE IN AMERICA
AN AMERICAN OWNED COMPANY

ATLAS VRV™

(Vinyl Reinforced Vinyl)

This Product Safety Information Sheet is principally directed to managerial, safety, hygiene and medical personnel. The description of physical, chemical and toxicological properties and handling advice is based on experimental results and past experience. It is intended as a starting point for the development of health and safety procedures.

This Product Safety Information Sheet meets the material safety data sheet (MSDS) requirements of the Federal OSHA Hazard Communication standard (29 CFR 1910.1200).

New Issue 7/91
ULT.559.P

I. PHYSICAL/CHEMICAL PROPERTIES

CHEMICAL COMPOSITION:

Polyvinyl chloride pigmented films laminated to fiberglass scrim.

PHYSICAL STATE:

This material is an article supplied in roll form. As such, the material itself does not pose physical or health hazards under normal use.

COLOR:

White currently. Could be extended to any number of colors except transparent.

MELTING POINT:

300°F (149°C) (softens)

DECOMPOSITION TEMPERATURE:

500°F (260°C)

BULK DENSITY OF SOLID:

87 - 94 lbs/ft³

SOLUBILITY:

Product may be softened by various organic solvents such as ketones, xylenes, benzene, etc.

IN CASE OF SUSPECTED POISONING, REFER TO THE INFORMATION IN SECTION VI:HUMAN HEALTH AND THE PROCEDURE AND EMERGENCY CONTACTS IN SECTION VII:FIRST AID.

II. CHEMICAL REACTIVITY

The product is relatively inert. It will not react with air or water.

III. STABILITY

The product has an indefinite shelf life under ambient handling and storage conditions.

VyTech Industries Incorporated • P.O. Box 5288
Pearman Dairy Road • Anderson, South Carolina 29623
Phone (803) 225-1459 • FAX (803) 224-8410

ATLAS VRV™

IV. FIRE HAZARD

Under fire conditions, the product will decompose to give off hydrogen chloride. The product has an Underwriters Laboratory Fire Hazard rating of 5 flame spread and 25 smoke generation. It is self-extinguishing once the source of ignition is removed.

V. FIREFIGHTING TECHNIQUE

Vapors are irritating to the respiratory tract and will cause breathing difficulty. Symptoms may be delayed several hours or longer depending upon exposure.

As in any fire, prevent human exposure to fire, smoke, fumes or products of combustion. Evacuate nonessential personnel from the fire area.

Wear full-face, self-contained breathing apparatus and impervious protective clothing (such as gloves, hoods, suits, and rubber boots).

Use standard firefighting techniques to extinguish fires involving this product -- Use water spray, dry chemical foam, carbon dioxide or halogenated extinguishing agents.

VI. HUMAN HEALTH

The material poses no health hazards and no medical conditions are generally recognized as being aggravated by handling the product.

VII. FIRST AID

If an adverse reaction occurs after exposure, promptly start the recommended procedures below. Seek medical attention if further treatment is required.

INGESTION

These materials are rolls of plastic intended for use in the manufacture of industrial insulated facing. Should accidental ingestion occur, seek medical advice.

INHALATION

Under normal handling conditions, inhalation exposure is unlikely. However, under fire conditions or conditions of extreme heat, remove the victim to fresh air. Seek medical attention if respiratory irritation occurs.

VIII. CORROSIVITY TO MATERIALS OF CONSTRUCTION

Noncorrosive to materials commonly used in the construction of process equipment, storage and shipping containers.

IX. STORAGE REQUIREMENTS

Containers should be stored in a cool, dry, well ventilated area away from flammable materials and sources of heat or flame. Protect from temperatures below 10°F (-12°C); the product may become brittle at low temperatures.

X. DISPOSAL OF MATERIAL

Material that cannot be used or chemically reprocessed should be disposed of by methods recommended for solid waste disposal in accordance with any applicable regulations under the Resource Conservation and Recovery Act. NOTE: State and local regulations may be more stringent than federal.

LAMTEC CORPORATION

MATERIAL SAFETY DATA SHEET

SECTION 1- PRODUCT IDENTIFICATION

MANUFACTURER: Lamtec Corporation

ADDRESS: Bartley-Chester Road, P.O. Box 37, Flanders, NJ 07836-0037

TELEPHONE: 201-584-5500

DATE OF PREPARATION: 01/28/97

PRODUCT NAME: WMP-VR, WMP-10, WMP-30, WMP-30 XF (White or Black)
Polypropylene Film-Scrim-Kraft Lamination

SECTION 2- HAZARDOUS INGREDIENTS / IDENTITY INFORMATION

PRODUCT INGREDIENTS:	CAS NUMBER	TLV/PEL
Polypropylene Film	-	-
Fiberglass Yarn Reinforcing	65997-17-3	5.0 mg/M³
Kraft Paper	-	-
Polymeric Adhesive Mixture of vinylidene chloride/butadiene copolymer with both organic and inorganic fillers	7732-18-5 (PVDC/BUTADIENE)	

* HAZARDOUS INGREDIENTS	CAS Number	OSHA PEL	ACGIH TLV	OTHER LIMITS RECOMMENDED
Antimony Oxide	1309-64-4	0.5 mg/M³	0.5 mg/M³	
Fiberglass Yarn	65997-17-3	5.0 mg/M³	10.0 mg/M³	
Hydrated Alumina	21645-51-2	15.0 mg/M³	10.0 mg/M³	20 mg/³ (STEL)
Decabromodiphenyl Oxide	1163-19-5	5.0 mg/M³	5.0 mg/M³	5.0 mg/M³ TWA 8hr. AIHA WEEL

* Substances listed in the hazardous Ingredients section are those that have been determined to be health hazards and are present at a concentration of 1% or greater, or 0.1% if the substance is on the list of potential carcinogens cited in the OSHA Hazard Communication Standard.

SECTION 6- HEALTH HAZARD DATA

EYE CONTACT: Direct contact will cause mechanical irritation. Irrigate immediately with water for at least 15 minutes. Seek medical attention.

SKIN CONTACT: Direct contact can cause mechanical irritation.

SKIN ABSORPTION: Not likely to be absorbed through skin.

INGESTION: Not likely to occur under normal conditions.

INHALATION: Product cannot be inhaled in its normal form. If abnormal use creates dust, wear a NIOSH/OSHA approved respirator.

SIGNS AND SYMPTOMS OF EXPOSURE: None known.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: None known.

SECTION 7- PRECAUTIONS FOR SAFE HANDLING AND USE

SPILL PROCEDURES: Not Applicable

DISPOSAL METHOD: In accordance with applicable, local, state and federal regulations. When incinerating, use a unit with acid scrubber to remove hydrogen chloride and bromide.

SECTION 8- CONTROL MEASURES

VENTILATION: Not required for normal use.

RESPIRATORY PROTECTION: Not required for normal use. If abnormal use creates dust, wear a NIOSH/OSHA approved respirator.

SKIN PROTECTION: Not normally required.

EYE PROTECTION: Not normally required.

SECTION 9- SPECIAL PRECAUTIONS / ADDITIONAL INFORMATION

DOT INFORMATION: Not regulated by DOT

HAZARD CLASS: Non hazardous.

HMIS HAZARD RATING: HEALTH - 0, FLAMMABILITY - 1, REACTIVITY - 0

NFPA HAZARD RATING: HEALTH - 1, FLAMMABILITY - 1, REACTIVITY - 0

While the information and recommendations set forth herein are believed to be accurate, Lamtec Corporation makes no warranty with respect thereto and disclaims all liability from reliance thereon.

FOR NSC USE ONLY

40-0852

October 8, 1999

*** MATERIAL SAFETY DATA SHEET ***

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NUMBER..... 40-0852
PRODUCT NAME..... BONDMASTER
SYNONYM NAME(S)..... adhesive

National Starch & Chemical Company
P.O. Box 6500, Finderne Avenue
Bridgewater, NJ 08807
USA
Emergency Telephone:
908-685-5100 (24 hours)

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT	CAS NUMBER	CONCENTRATION RANGES (%)
Formaldehyde	50-00-0	0-0.06

3. HAZARDS IDENTIFICATION

Not considered as hazardous.

EYE..... No hazard in normal industrial use.
SKIN CONTACT..... No hazard in normal industrial use.
INHALATION..... No hazard in normal industrial use.
INGESTION..... No hazard in normal industrial use.

4. FIRST-AID MEASURES

EYE..... Flush eyes with large amounts of water until irritation subsides. If irritation persists, get medical attention.
SKIN CONTACT..... None required.
INHALATION..... First aid is not normally required.
INGESTION..... None required.

*** MATERIAL SAFETY DATA SHEET ***

5. FIREFIGHTING MEASURES

AUTOIGNITION.....	Unknown
FLASH POINT.....	Not Applicable
EXTINGUISHING MEDIA.....	CO2; Dry chemical; Foam
SPECIAL FIREFIGHTING PROCEDURES....	Not Applicable
FIRE & EXPLOSION HAZARDS.....	Not applicable.
UPPER EXPLOSION LIMIT (%).....	Not Applicable
LOWER EXPLOSION LIMIT (%).....	Not Applicable
NFPA FLAMMABILITY HAZARD CLASS.....	0 = Insignificant

6. ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK PROCEDURES.....	Spills should be taken up with suitable absorbent and placed in containers. Spill area can be washed with water; collect wash water for approved disposal. Do not flush to storm sewer or waterway.

For safety and environmental precautions, please review entire Material Safety Data Sheet for necessary information.

7. HANDLING AND STORAGE

STORAGE TEMPERATURE.....	40-100 F
HANDLING/STORAGE.....	Product contains small amount of formaldehyde which could accumulate in the unvented headspace of drums or bulk storage vessels. Open drum in ventilated area. Avoid breathing vapors.
VENTILATION REQUIREMENTS.....	General

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

COMPONENT	EXPOSURE LIMITS
Formaldehyde	0.3 ppm (ACGIH-Ceiling) 0.75 ppm (OSHA-PEL)

*** MATERIAL SAFETY DATA SHEET ***

8. EXPOSURE CONTROLS/PERSONAL PROTECTION (Continued)

	2 ppm (OSHA-STEL)
VENTILATION REQUIREMENTS.....	General
EYE PROTECTION REQUIREMENTS.....	Wear safety glasses with side shields.
GLOVE REQUIREMENTS.....	Gloves are not normally required for forseeable conditions of use.
CLOTHING REQUIREMENTS.....	Protective clothing is normally not necessary for forseeable conditions of use.
CHANGE/REMOVAL OF CLOTHING.....	none required
WASH REQUIREMENTS.....	None.
RESPIRATOR REQUIREMENTS.....	None required under normal handling conditions.

9. PHYSICAL AND CHEMICAL PROPERTIES

PURE SUBSTANCE OR MIXTURE.....	Mixture
PHYSICAL FORM.....	Liquid
APPEARANCE/ODOR.....	White; Pungent odor
ODOR THRESHOLD.....	Not available.
PH AS IS.....	4.5
BOILING POINT.....	>212 F
MELTING/FREEZING POINT.....	<40 F
SOLUBILITY IN WATER.....	Miscible
PARTITION COEFFICIENT (n-octanol/water).....	Not Applicable
SPECIFIC GRAVITY (WATER=1).....	1.070
BULK DENSITY.....	8.9 lb/gal
EVAPORATION RATE.....	1 (Water)
VAPOR PRESSURE (mmHg).....	17.5 (20 c)
VAPOR DENSITY (air = 1).....	0.62
VOLATILES.....	55%/wt (water)
VOLATILE ORGANIC COMPOUNDS.....	0.3%/wt
AUTOIGNITION.....	Unknown
FLASH POINT.....	Not Applicable
OXIDIZING PROPERTIES.....	Not Applicable

10. STABILITY AND REACTIVITY

STABILITY.....	Stable
MATERIALS TO AVOID.....	materials that react with water
NFPA REACTIVITY HAZARD CLASS.....	0 = Insignificant

*** MATERIAL SAFETY DATA SHEET ***

10. STABILITY AND REACTIVITY (Continued)

HAZARDOUS DECOMPOSITION PRODUCTS... Carbon monoxide, carbon dioxide.

11. TOXICOLOGICAL INFORMATION

CHRONIC (LONG TERM) EFFECTS OF EXPOSURE

ROUTE OF ENTRY.....	Eye contact
EFFECTS OF CHRONIC EXPOSURE.....	Product contains residual vinyl acetate, an IARC 2B possible human carcinogen. Vinyl acetate vapors have been shown to cause tumors in the respiratory tract of laboratory animals exposed to 600ppm over a lifetime; 200ppm causes irritation; 50ppm produces no observable effect. There is no evidence of adverse effects to humans exposed to levels at or below the ACGIH TLV. Given varying climatic conditions this product can release between 0.1 and 0.5ppm formaldehyde. The ACGIH TWA for formaldehyde is 0.3(ceiling)ppm. In highly sensitive people eye, respiratory, and/or skin irritation as well as skin allergic responses are possible at levels below the TWA.
TARGET ORGANS.....	Not Applicable
CARCINOGEN.....	No.

12. ECOLOGICAL INFORMATION

Not available.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHODS..... Waste disposal should be in accordance with existing federal, state and local environmental

13. DISPOSAL CONSIDERATIONS (Continued)

EMPTY CONTAINER WARNINGS.....	regulations. Empty containers may contain product residue; follow MSDS and label warnings even after they have been emptied.

14. TRANSPORTATION INFORMATION

DOT INFORMATION.....	Not Applicable

UNITED NATIONS INFORMATION

U.N. NUMBER.....	None.
U.N. CLASS.....	None.

15. REGULATORY INFORMATION

TSCA.....	All components are on the TSCA inventory.
STATE LAWS.....	California Proposition 65: WARNING: This product contains a chemical known to the state of California to cause cancer: formaldehyde.

SARA/TITLE III, THIS PRODUCT CONTAINS (OR IS) A TOXIC CHEMICAL FOR ROUTINE ANNUAL CHEMICAL RELEASE REPORTING UNDER SECTION 313:

Vinyl acetate CAS# 108-05-4 0.3% wt

The information given and the recommendations made herein apply to our product(s) alone and are not combined with other product(s). Such are based on our research and on data from other reliable sources and are believed to be accurate. No guaranty of accuracy is made. It is the purchaser's responsibility before using any product to verify this data under their own operating conditions and to determine whether the product is suitable for their purposes.

40-0852

*** MATERIAL SAFETY DATA SHEET ***

16. OTHER INFORMATION

MSDS DATE..... March 15, 1999
CHANGES SINCE PREVIOUS ISSUE..... Section 7; Section 9; Section 14

FOR REGULATORY INFORMATION, CONTACT:

Betty L. Sullivan
Regulatory Manager
Adhesives Division
National Starch & Chemical Company
Finderne Avenue, P.O. Box 6500
Bridgewater, NJ 08807
USA
Telephone: 908-685-5385

MAY 1 5 1989

M A T E R I A L S A F E T Y D A T A S H E E T PAGE: 1
DOW CHEMICAL U.S.A. MIDLAND MICHIGAN 48640 EMERGENCY PHONE: 517-636-4400

EFFECTIVE DATE: 04 FEB 82 PRODUCT CODE: 82011

PRODUCT NAME: STYROFOAM (R) SM BRAND PLASTIC FOAM
INSULATING SHEATHING MSD: 0444

INGREDIENTS (TYPICAL VALUES-NOT SPECIFICATIONS)	%
POLYSTYRENE FOAM	100

SECTION 1 PHYSICAL DATA

BOILING POINT: NOT APPLICABLE : SOL. IN WATER: NONE
VAP PRESS: NOT APPLICABLE : SP. GRAVITY: .027 TO .064
VAP DENSITY (AIR=1): NOT APPLIC. : % VOLATILE BY VOL: NOT APPLICABLE
APPEARANCE AND ORDER: RIGID CELLULAR FOAM BOARD - NO ODOR.

SECTION 2 FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: ----- : FLAMMABLE LIMITS (STP IN AIR)
METHOD USED: NOT APPLICABLE. : LFL: NOT APPLIC. UFL: NOT APPLIC.
EXTINGUISHING MEDIA: WATER FOG, CO2, DRY CHEMICAL.
SPECIAL FIRE FIGHTING EQUIPMENT AND HAZARDS: LARGE VOLUME OF WATER DIRECTLY ON FLAME OR BURNING SURFACE. EMITS BLACK DENSE SMOKE.

SECTION 3 REACTIVITY DATA

STABILITY: -----
INCOMBATIBILITY: HYDROCARBONS, ESTERS, INSECTICIDES, AMINES, ALDEHYDES.
HAZARDOUS DECOMPOSITION PRODUCTS: CARBON MONOXIDE, CARBON DIOXIDE, CARBON.
HAZARDOUS POLYMERIZATION: WILL NOT OCCUR.

SECTION 4 SPILL,LEAK,AND DISPOSAL PROCEDURES

ACTION TO TAKE FOR SPILLS (USE APPROPRIATE SAFETY EQUIPMENT): PICK UP, OR IF DUST OR IN SMALL PIECES, SWEEP UP AND PLACE IN SUITABLE CONTAINER FOR DISPOSAL.
DISPOSAL METHOD: BURY IN AN APPROVED LANDFILL, OR BURN IN AN ADEQUATE INCINERATOR WITH EXCESS OXYGEN, IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.

SECTION 5 HEALTH HAZARD DATA

(CONTINUED ON PAGE 2)

EFFECTIVE DATE: 04 FEB 82 PRODUCT CODE: 82015
PRODUCT (CONT'D): STYROFOAM (R) SM BRAND PLASTIC FOAM INSULATING SHEATHING
MSD: 0444

SECTION 5 HEALTH HAZARD DATA (CONTINUED)

INGESTION: PRESENTS NO SIGNIFICANT INGESTION HAZARD. MAY ACT AS AN OBSTRUCTION (AS WOULD ANY BULKY INERT MATERIAL) IF SWALLOWED.
EYE CONTACT: MAY CAUSE MECHANICAL IRRITATION FROM DUST IF FABRICATING.
SKIN CONTACT: PRESENTS NO SIGNIFICANT HAZARD. PROBLEM WILL BE THAT OF MECHANICAL INJURY ONLY.
SKIN ABSORPTION: NOT LIKELY TO BE ABSORBED.
INHALATION: DURING FABRICATION THE BLOWING AGENT RELEASED (METHYL CHLORIDE) SHOULD BE KEPT BELOW 50 PPM VIA VENTILATION. DOW INDUSTRIAL HYGIENE GUIDE AND ACGIH TLV FOR METHYL CHLORIDE IS 50 PPM, OSHA STANDARD IS 100 PPM.
EFFECTS OF OVEREXPOSURE: ACUTE OVEREXPOSURE TO METHYL CHLORIDE CAUSES DIZZINESS AND NAUSEA. CHRONIC OVEREXPOSURE CAUSES SEVERE ILLNESS.

SECTION 6 FIRST AID--NOTE TO PHYSICIAN

FIRST AID PROCEDURES:

EYES: IRRIGATE WITH FLOWING WATER IMMEDIATELY. REMOVE PARTICLES USING CLEAN LINT-FREE CLOTH. CONSULT MEDICAL PERSONNEL.
SKIN: WASH OFF IN FLOWING WATER OR SHOWER.
INHALATION: FAIREMOVE TO FRESH AIR IF EFFECTS OCCUR. CONSULT MEDICAL.
INGESTION: UNLIKLEY ROUTE OF CONTACT.
NOTE TO PHYSICIAN:
EYES: POSSIBLE MECHANICAL INJURY. STAIN FOR EVIDENCE OF CORNEAL INJURY.
SKIN: POSSIBLE MECHANICAL IRRITATION. TREAT AS ANY CONTACT DERMATITIS. NOT LIKELY TO BE ABSORBED IN ACUTELY TOXIC AMOUNTS.
RESPIRATORY: DUSTS MAY BE IRRITATING. INADEQUATELY AGED FOAM MAY RELEASE TOXIC VAPORS.
ORAL: NO EFFECT EXPECTED.
SYSTEMIC: NO EFFECT EXPECTED. TREATMENT BASED ON SOUND JUDGMENT OF PHYSICIAN AND THE INDIVIDUAL REACTIONS OF THE PATIENT.

SECTION 7 SPECIAL HANDLING INFORMATION

VENTILATION: RECOMMEND CONTROL OF METHYL CHLORIDE TO SUGGESTED GUIDE.
RESPIRATORY PROTECTION: IF REQUIRED, USE AN APPROVED DUST RESPIRATOR DURING CUTTING OPERATIONS.
PROTECTIVE CLOTHING: NONE REQUIRED.
EYE PROTECTION: SAFETY GLASSES WITHOUT SIDE SHIELDS.

(CONTINUED ON PAGE 3)
(R) INDICATES A REGISTERED OR TRADEMARK NAME OF THE DOW CHEMICAL COMPANY

M A T E R I A L S A F E T Y D A T A S H E E T PAGE: 3
DOW CHEMICAL U.S.A. MIDLAND MICHIGAN 48640 EMERGENCY PHONE: 517-636-4400

EFFECTIVE DATE: 04 FEB 82 PRODUCT CODE: 82015
PRODUCT (CONT'D): STYROFOAM (R) SM BRAND PLASTIC FOAM
INSULATING SHEATHING MSD: 0444

SECTION 8 SPECIAL PRECAUTIONS AND ADDITIONAL INFORMATION (CONTINUED)
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: STYROFOAM BRAND INSULATION IS COMBUSTIBLE AND MAY CONSTITUTE A FIRE HAZARD IF IMPROPERLY USED OR INSTALLED. IT SHOULD BE ADEQUATELY PROTECTED. USE ONLY AS DIRECTED BY THE SPECIFIC INSTRUCTIONS FOR THIS PRODUCT. STYROFOAM BRAND INSULATION CONTAINS A FLAME RETARDANT ADDITIVE TO INHIBIT ACCIDENTAL IGNITION FROM SMALL FIRE SOURCES. DURING SHIPPING, STORAGE, INSTALLATION AND USE THIS MATERIAL SHOULD NOT BE EXPOSED TO FLAME OR OTHER IGNITION SOURCES.

ADDITIONAL INFORMATION: 04 FEB 82 REVISED FROM 24 OCT 80 -- SECTIONS 5, 6 AND 7. (P.C. 81550 PREVIOUSLY ON 0848.)

LAST PAGE
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