GenFlex Roofing Systems
Material Safety Data Sheet

Material Name: TPO Coated Metal **February 5, 2008**

* * * Section 1 - Chemical Product and Company Identification * * *

Product Use: Building Material

Manufacturer Information

GenFlex Roofing Systems, LLC
250 West 96th Street
Indianapolis, IN 46260

Phone: 317-575-7190 (Non-Emergency)

Emergency # 1-800-424-9300 (CHEMTREC)
International # 1-703-527-3887 (CHEMTREC)

General Comments

NOTE: CHEMTREC telephone number is to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure, or accident involving chemicals. All non-emergency questions should be directed to customer service.

* * * Section 2 - Hazards Identification * * *

Emergency Overview

This product is an odorless, white or grey metallic solid. Under normal conditions of use, this product is not expected to create any unusual health or emergency hazards. If the product is subjected to welding, burning, grinding or machining, metal particulates or elemental oxides can be. Breathing dust from this product may cause metal fume fever. Contact of the skin with dusts from this material may result in an allergic sensitization reaction. Inhalation of dusts from this product may result in an allergic respiratory sensitization reaction. This product contains components which are cancer hazards.

Potential Health Effects: Eyes

This product may cause irritation to the eyes. Contact of molten metal causes eye burns. Vapors, fumes, or particles from this material will cause eye irritation.

Potential Health Effects: Skin

Contact with dusts or thermal processing fumes may cause irritation. Prolonged or repeated contact with processing fumes or dusts may cause an allergic skin sensitization reaction. Contact with molten metal causes skin burns.

Potential Health Effects: Ingestion

Ingestion of this product is unlikely, however, ingestion may cause nausea, vomiting and diarrhea.

Potential Health Effects: Inhalation

Dusts may cause irritation to nose, throat and respiratory system. This product may cause metal fume fever with resulting flu-like symptoms. Inhalation of dusts may cause respiratory sensitization in some individuals, resulting in allergic symptoms of the respiratory tract producing asthma-like conditions (including wheezing, shortness of breath and difficulty breathing).

HMIS Ratings: Health: 1* **Fire:** 0 **Reactivity:** 1 **Pers. Prot.:** safety glasses, gloves

(Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard)

* * * Section 3 - Composition / Information on Ingredients * * *

CAS #	Component	Approx. Percent
1309-37-1	Iron	<60
1314-13-2	Zinc oxide	<5
7439-96-5	Manganese	<0.75
7440-47-3	Chromium	<0.5
9010-79-1	Propylene/ethylene copolymer	15-40
1309-42-8	Magnesium Hydroxide	5-10
13463-67-7	Titanium Dioxide	1-2
Trade Secret	Stabilizers	<3

Component Related Regulatory Information

This product may be regulated, have exposure limits or other information identified as the following: Zinc compounds, Chromium compounds, Manganese compounds.

Component Information/Information on Non-Hazardous Components

This product has been determined to be an "article", meeting the criteria established in 29CFR1910.1200(b) (6) (v) and does not pose a physical hazard and/or health risk under normal conditions of use

* * * Section 4 - First Aid Measures * * *

First Aid: Eyes

In case of contact with eyes, rinse immediately with plenty of water for 15 minutes and seek medical advice.

First Aid: Skin

For skin contact, flush with large amounts of water. If irritation persists, get medical attention. For contact with molten product, do not remove any material or clothing adhering to the skin. Flush the burned area immediately with large amounts of cold water. If it is possible, submerge the area in cold water. Immediately seek medical attention or contact a physician.

First Aid: Ingestion

If the material is swallowed, get immediate medical attention or advice -- Do not induce vomiting unless instructed to do so by medical personnel.

First Aid: Inhalation

Remove immediately to fresh air. If symptoms develop or persist, seek immediate medical attention.

First Aid: Notes to Physician

None identified.

* * * Section 5 - Fire Fighting Measures * * *

Flash Point: Not applicable
Method Used: Not applicable
Upper Flammable Limit (UFL): Not applicable
Lower Flammable Limit (LFL): Not applicable
Auto Ignition: 930ºC (1706ºF)
Flammability Classification: Non Flammable
Rate of Burning: Not applicable

General Fire Hazards

Contact with strong acids may release flammable hydrogen gas.

Hazardous Combustion Products

Decomposition of this product may yield metallic oxides and irritating and toxic gases or fumes

Extinguishing Media

Dry chemical, foam, carbon dioxide, water fog.

Fire Fighting Equipment/Instructions

Firefighters should wear full protective clothing including self contained breathing apparatus.

NFPA Ratings: Health: 1 **Fire:** 0 **Reactivity:** 1

(Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe)

* * * Section 6 - Accidental Release Measures * * *

Containment Procedures

Containment of this material should not be necessary. If dusts are generated, eliminate ignition source.

Clean-Up Procedures

Restack, sweep, shovel or vacuum up material. Collect fine dust using a vacuum cleaner with a HEPA filter. Place in a closed container. Clean-up personnel should wear suitable protective equipment.

Evacuation Procedures

Keep unnecessary personnel away.

Special Procedures

None necessary

* * * Section 7 - Handling and Storage * * *

Handling Procedures

Avoid breathing dusts from this material. Use of high speed rotary cutting tools may create excessive dusts. Avoid dust inhalation through adequate ventilation and the use of respiratory protection.

Storage Procedures

None identified.

* * * Section 8 - Exposure Controls / Personal Protection * * *

Exposure Guidelines

A: General Product Information

Follow all applicable exposure limits.

B: Component Exposure Limits

Iron (1309-37-1)

ACGIH: 5 mg/m3 TWA (welding fumes, dust, total particulate as Fe)
OSHA: fume: 10 mg/m3 TWA
NIOSH: as Fe: 5 mg/m3 TWA

Zinc oxide (1314-13-2)

ACGIH: 5 mg/m3 TWA (fume); 10 mg/m3 TWA (dust) (The value for Zinc oxide "dust" is for total dust containing no asbestos and < 1% crystalline silica)
10 mg/m3 STEL (fume)
OSHA: fume: 5 mg/m3 TWA; total dust: 10 mg/m3 TWA; respirable fraction: 5 mg/m3 TWA
fume: 10 mg/m3 STEL
NIOSH: fume/dust: 5 mg/m3 TWA
10 mg/m3 STEL
C 15 mg/m3 (dust)

Manganese (7439-96-5)

ACGIH: 0.2 mg/m3 TWA
OSHA: fume, as Mn: 1 mg/m3 TWA
compounds, as Mn: C 5 mg/m3
NIOSH: as Mn: 1 mg/m3 TWA
3 mg/m3 STEL

Chromium (7440-47-3)

ACGIH: 0.5 mg/m3 TWA
OSHA: (as Cr): 1 mg/m3 TWA
NIOSH: as Cr: 0.5 mg/m3 TWA; see Appendix C for supplementary exposure limits

Titanium Dioxide (CAS 13463-67-7)

ACGIH: 10 mg/m^3 (total dust)
OSHA: 15 mg/m^3 (total dust)

Magnesium Hydroxide (CAS 1309-42-8)

ACGIH: 15 mg/m^3 (total dust)
OSHA: 10 mg/m^3 (total dust)

ACGIH, OSHA and NIOSH have not developed exposure limits for any other components of this product present at or greater than 0.1%.

Engineering Controls

Under normal handling and use conditions of this product, exposure to hazardous ingredients is unlikely due to product form. The exposure limits provided are for reference purposes in the event that dusts are generated. Keep formation of airborne dusts to a minimum.

PERSONAL PROTECTIVE EQUIPMENT

Personal Protective Equipment: Eyes/Face

Wear safety goggles with side shields.

Personal Protective Equipment: Skin

Use impervious gloves.

Personal Protective Equipment: Respiratory

If ventilation is not sufficient to effectively remove and prevent buildup of dusts or processing fumes, appropriate NIOSH approved respiratory protection must be provided.

Personal Protective Equipment: General

Use good industrial hygiene practices in handling this material.

* * * Section 9 - Physical & Chemical Properties * * *

Appearance:	White or Grey	**Odor:**	Odorless
Physical State:	Metallic solid	**pH:**	Not available
Vapor Pressure:	Not applicable	**Vapor Density:**	Not applicable
Boiling Point:	Not available	**Melting Point:**	2800ºC
Solubility (H2O):	Insoluble	**Specific Gravity:**	7
		Flash Point:	Not applicable

* * * Section 10 - Chemical Stability & Reactivity Information * * *

Chemical Stability

Stable under normal conditions.

Chemical Stability: Conditions to Avoid

Avoid generation of dusts.

Incompatibility

This product may react with strong acids.

Hazardous Decomposition

Metal fumes and certain noxious gases, such as CO may be produced at temperatures above the melting point or during welding or burning operations. Carbon monoxide, carbon dioxide, and other toxic fumes may be produced during welding or burning operations.

Hazardous Polymerization

Hazardous polymerization will not occur.

* * * Section 11 - Toxicological Information * * *

Acute Toxicity

A: General Product Information

This product in its usual physical form does not pose a health hazard. Prolonged, repeated exposure to fumes or dust generated during, heating, cutting, brazing or welding may cause adverse health effects associated with the following constituents:

Iron dust, in the form of metallic iron or iron oxides, can irritate the eyes and respiratory tract from mechanical action. Chronic exposure to iron inhalation (as iron oxide) leads to accumulation in the lungs and a characteristic stippled appearance on X-rays. This condition, called siderosis, is considered benign in that it does not interfere with lung function and does not predispose to other disease.

Overexposure to manganese dusts may result in pneumoconiosis, a lung disease due to permanent deposition of substantial amounts of particulate matter in the lungs. Overexposure to manganese may result in CNS effects, anemia and pneumonitis which increases the risk of pneumonia. Workers exposed to manganese dusts have been reported to develop "manganism", a disorder of the central nervous system with symptoms which may include mask-like facial expression, spastic gait, tremors, slurred speech, sometimes dystonia, fatigability, anorexia, asthenia, apathy and inability to concentrate. Inhalation of dusts containing manganese compounds can cause metal fume fever which involves a transient onset of flu-like symptoms. Exposure to manganese compounds may result in toxic accumulation in critical organs such as the liver, kidney and brain.

Zinc poisoning can cause anemia, lethargy and dizziness. Inhalation of zinc fumes may cause metal fume fever, a flu-like illness generally lasting 24 hours or less.

Chromium metals and its divalent and trivalent compounds are of low toxicity. Adverse reactions on the skin may include dermatitis for a chromium sensitive individual. Long-term excessive inhalation exposure to ferr-chromium alloys may cause lung damages in workers exposed to these alloys. Exposure to chromium metals does not give rise to pulmonary fibrosis or pneumoconiosis.

Chromium III, the naturally occurring form, has low toxicity while chromium VI is highly toxic due to strong oxidation characteristics and permeability through biological membranes. Excessive exposure to chromium VI can produce allergic skin sensitization reactions and severe nasal irritation, scarring and damage to the lungs, liver and kidney damage. Excessive exposure to chromium VI can produce allergic skin sensitization reactions and severe nasal irritation, scarring and damage to the lungs, liver and kidney damage. Industrial exposure to chromium may cause dermatitis, skin ulcers, perforation of the nasal septum, as well as cancers of the lungs, nasal cavity and paranasal sinuses.

B: Component Analysis - LD50/LC50

Zinc oxide (1314-13-2)
Inhalation LC50 Mouse : 2500 mg/m3
Oral LD50 Mouse : 7950 mg/kg

Manganese (7439-96-5)
Oral LD50 Rat : 9 gm/kg

Carcinogenicity

A: General Product Information

No carcinogenicity data available for this product.
Hexavalent chromium compounds have been reported to be carcinogenic in humans.

B: Component Carcinogenicity

Iron (1309-37-1)
ACGIH: A4 - Not Classifiable as a Human Carcinogen (dust and fume, as Fe)
IARC: Supplement 7, 1987; Monograph 1, 1972 (Group 3 (not classifiable))

Chromium (7440-47-3)
ACGIH: A4 - not classifiable as a human carcinogen
IARC: Monograph 49, 1990 (Group 3 (not classifiable))

Titanium Dioxide (CAS 13463-67-7)
ACGIH: A4 –not classifiable as a human carcinogen
IARC: Group 3 – non classifiable

No other of this product's components present at or greater than 0.1% are listed by ACGIH, IARC, OSHA, NIOSH or NTP.

Epidemiology

No data available for this product.

A number of occupational health surveys and epidemiological studies have shown an association between sustained exposure to airborne manganese compounds or fumes and chronic neurologic disorders.

Neurotoxicity

No data available for this product.

Chronic overexposure to manganese can cause "manganism". Manganism is characterized by fatigue, irritability, headaches and asthenia. Symptoms are reversible when exposure stops. Chronic overexposure to manganese compounds may result in CNS effects such as weakness, sleepiness, emotional instability and spastic gait.

Mutagenicity

No data available for this product.

Chromium VI compounds have been mutagenic in bacteria, caused chromosome aberrations in mammalian cells and have been associated with increased frequencies of chromosome aberrations in lymphocytes in chromate workers.

Teratogenicity

No information available for the product.

Other Toxicological Information

None available.

* * * Section 12 - Ecological Information * * *

Ecotoxicity

No data available for this product.

Environmental Fate

No data available for this product.

* * * Section 13 - Disposal Considerations * * *

US EPA Waste Number & Descriptions

A: General Product Information

Waste should be tested using methods described in 40 CFR Part 261 to determine if it meets applicable definitions of hazardous wastes.

B: Component Waste Numbers

Chromium (7440-47-3)

RCRA: waste number D007; regulatory level = 5.0 mg/L

Disposal Instructions

Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.

* * * Section 14 - Transportation Information * * *

US DOT Information

Shipping Name: Not regulated
Hazard Class: None
UN/NA #: None
Packing Group: None
Required Label(s): None
Additional Info.: None

International Transportation Regulations

Not regulated as dangerous goods.

* * * Section 15 - Regulatory Information * * *

US Federal Regulations

A: General Product Information

None identified.

B: Component Analysis

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

Zinc oxide (1314-13-2)

SARA 313: form R reporting required for 1.0% de minimis concentration; Chemical Category N982 (related to Zinc compounds)
CERCLA: statutory RQ = 1 pound (0.454 kg) (related to Zinc compounds)

Manganese (7439-96-5)

SARA 313: form R reporting required for 1.0% de minimis concentration

Chromium (7440-47-3)

SARA 313: form R reporting required for 1.0% de minimis concentration

CERCLA: final RQ = 5000 pounds (2270 kg) (no reporting of releases of this hazardous material is required if the diameter of the pieces of the solid metal released is equal to or exceeds 0.004 inches)

State Regulations

A: General Product Information

Other state regulations may apply. Check individual state requirements.

B: Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS #	CA	FL	MA	MN	NJ	PA
Iron	1309-37-1	Yes	Yes	Yes	Yes	Yes	Yes
Zinc oxide	1314-13-2	Yes	Yes	Yes	Yes	Yes	Yes
Manganese	7439-96-5	Yes	Yes	Yes	Yes	Yes	Yes
Chromium	7440-47-3	Yes	Yes	Yes	Yes	Yes	Yes
Titanium Dioxide	13463-67-7	No	No	Yes	Yes	No	No

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):

WARNING! This product contains a chemical known to the state of California to cause cancer.

WARNING! This product contains a chemical known to the state of California to cause reproductive/developmental effects.

Other Regulations

A: General Product Information

No additional information.

B: Component Analysis - Inventory

Component	CAS #	TSCA	DSL	EINECS
Iron	1309-37-1	Yes	Yes	Yes
Zinc oxide	1314-13-2	Yes	Yes	Yes
Manganese	7439-96-5	Yes	Yes	Yes
Chromium	7440-47-3	Yes	Yes	Yes
Titanium Dioxide	13463-67-7	Yes	Yes	Yes
Magnesium Hydroxide	1309-42-8	Yes	Yes	Yes

C: Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

Component	CAS #	
Iron	1309-37-1	1% item 762 (1327)
Zinc oxide	1314-13-2	1% item 1717 (1326)
Manganese	7439-96-5	1% item 974 (1077)
Chromium	7440-47-3	0.1% item 399 (561)

* * * Section 16 - Other Information * * *

Date of Previous MSDS: April 4, 2007

Changes Since Previous MSDS: Section 1 – Product name change and company address change.

Key/Legend

EPA = Environmental Protection Agency; TSCA = Toxic Substance Control Act; ACGIH = American Conference of Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; NFPA = National Fire Protection Association; HMIS = Hazardous Material Identification System; CERCLA = Comprehensive Environmental Response, Compensation and Liability Act; SARA = Superfund Amendments and Reauthorization Act

* * * Disclaimer * * *

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