Northern VA Cast Stone
(received August 2017)

LEHIGH WHITE CEMENT COMPANY
MATERIAL SAFETY DATA SHEET
FOR
WHITE PORTLAND CEMENT

REVISED DATE: Jan 2014

1. PRODUCT/COMPANY IDENTIFICATION

Supplier:
Lehigh White Cement Company
7660 Imperial Way – Allentown, PA 18195
Contact our nearest Sales office for further information (SEE PAGE 7).
Sales office phone numbers and locations are also listed on our WEBSITE (www.lehighwhitecement.com).

Chemical Family: Calcium Compounds

Chemical Name and Synonyms:
Portland Cement (CAS # 65997-15-1), Hydraulic Cement Types I, I (WRA), II, III, V
Trade Name and Synonyms:
Lehigh White Portland Cement

2. EMERGENCY AND FIRST AID

EMERGENCY INFORMATION: Portland cement is a light gray or white powder. When in contact with moisture in eyes or on skin, or when mixed with water, portland cement becomes highly caustic (pH > 12) and will damage or burn (as severely as third-degree) the eyes or skin. Inhalation may cause irritation to the moist mucous membranes of the nose, throat and upper respiratory system or may cause or may aggravate certain lung diseases or conditions. Use exposure controls or personal protection methods described in Section 10.

EYES: Immediately flush eye thoroughly with water. Continue flushing eye for at least 15 minutes, including under lids, to remove all particles. Call physician immediately.

SKIN: Wash skin with cool water and pH-neutral soap or a mild detergent. Seek medical treatment if irritation or inflammation develops or persists. Seek immediate medical treatment in the event of burns.

INHALATION: Remove person to fresh air. If breathing is difficult, administer oxygen. If not breathing, give artificial respiration. Seek medical help if coughing and other symptoms do not subside. Inhalation of large amounts of portland cement require immediate medical attention.

INGESTION: Do not induce vomiting. If conscious, have the victim drink plenty of water and call a physician immediately.

ACCIDENTIAL RELEASE MEASURES Clean up spilled material without causing it to become airborne or mixed with water to limit potential harm. Wear appropriate personal protective equipment. Dispose of waste material according to local, state or federal regulations.

3. COMPOSITION INFORMATION

DESCRIPTION:

This product consists of finely ground portland cement clinker mixed with a small amount of gypsum (calcium sulfate dihydrate). The portland cement clinker is made by heating to a high temperature a mixture of substances such as limestone, sand, clay and shale. Portland cement is essentially hydraulic calcium silicates contained in a crystalline mass, not separable into individual components. Major compounds are:

$3CaO \cdot SiO_2$	Tricalcium Silicate	CAS #12168-85-3
$2CaO \cdot SiO_2$	Dicalcium Silicate	CAS #10034-77-2
$3CaO \cdot Al_2O_3$	Tricalcium Aluminate	CAS #12042-78-3
$4CaO \cdot Al_2O_3 \cdot Fe_2O_3$	Tetracalcium aluminoferrite	CAS #12068-35-8
$CaSO_4 \cdot 2H_2O$	Calcium Sulfate dihydrate (Gypsum)	CAS #7778-18-9 (CAS #13397-24-5)
$CaCO_3$	Calcium Carbonate	CAS #1317-65-3

4. HAZARDOUS INGREDIENTS

COMPONENT	OSHA PEL (8-Hour TWA)	ACGIH TLV-TWA (1995-1996)	NIOSH REL (8-Hour TWA)
Portland Cement (CAS #65997-15-1) 50 to 95% by weight	5 mg respirable dust/m^3 15 mg total dust/m^3	10 mg total dust/m^3	
Calcium sulfate (CAS #7778-18-9) [Gypsum (CAS #13397-24-5)] 0 to 10% by weight	5 mg respirable dust/m^3 15 mg total dust/m^3	10 mg total dust/m^3	
Iron oxide (CAS #1309-37-1) 0 to 15% by weight	10 mg/m^3	5 mg/m^3	
Calcium carbonate (CAS #1317-65-3) 0 to 5% by weight	5 mg respirable dust/m^3 15 mg total dust/m^3	10 mg total dust/m^3	
Magnesium oxide (CAS #1309-48-4) 0 to 5% by weight	15 mg total dust/m^3	10 mg total dust/m^3	
Calcium oxide (CAS #1305-78-8) 0 to 5% by weight[1]	5 mg/m^3	2 mg/m^3	
Crystalline silica (CAS #14808-60-7) 0 to 5% by weight	10 mg of respirable dust/m^3 % SiO_2 + 2 30 mg of total dust/m^3 % SiO_2 + 2 250 million particles/ft^3 % SiO_2 + 5	0.05 mg respirable quartz/m^3	0.05 mg respirable quartz dust/m^3

TRACE INGREDIENTS:

Due to the use of substances mined from the earth's crust, trace amounts of naturally occurring, potentially harmful constituents may be detected during chemical analysis. Portland cement may contain up to 0.75% insoluble residue. A small amount of this residue includes free crystalline silica. Portland cement also may contain trace (<0.05%) amounts of chromium salts or compounds (including hexavalent chromium) or other metals (including nickel compounds) found to be hazardous or toxic in some chemical forms. These metals are present mostly as trace substitutions within the principal minerals. Other trace constituents may include potassium and sodium sulfate compounds.

[1] If Portland/Lime blended product "0 to 25%" values.

5. HAZARD IDENTIFICATION

POTENTIAL HEALTH EFFECTS:

NOTE: Potential health effects may vary depending upon the duration and degree of exposure. To reduce or eliminate health hazards associated with this product, use exposure controls or personal protection methods as described in Section 10.

EYE CONTACT:

(Acute/Chronic) Exposure to airborne dust may cause immediate or delayed irritation or inflammation of the cornea. Eye contact by larger amounts of dry powder or splashes of wet portland cement may cause effects ranging from moderate eye irritation to chemical burns and blindness.

SKIN CONTACT:

(Acute) Exposure to dry portland cement may cause drying of the skin with consequent mild irritation or more significant effects attributable to aggravation of other conditions. Discomfort or pain cannot be relied upon to alert a person to a hazardous skin exposure.

(Chronic) Dry portland cement coming in contact with wet skin or exposure to wet portland cement may cause more severe skin effects, including thickening, cracking or fissuring of the skin. Prolonged exposure can cause severe skin damage in the form of chemical (caustic) burns.

(Acute/Chronic) Some individuals may exhibit an allergic response upon exposure to portland cement. The response may appear in a variety of forms ranging from a mild rash to severe skin ulcers.

INHALATION:

(Acute) Exposure to portland cement may cause irritation to the moist mucous membranes of the nose, throat and upper respiratory system. Pre-existing upper respiratory and lung diseases may be aggravated by inhalation of portland cement.

(Chronic) Inhalation exposure to free crystalline silica may cause delayed lung injury including silicosis, a disabling and potentially fatal lung disease, and/or cause or aggravate other lung diseases or conditions.

INGESTION:

(Acute/Chronic) Internal discomfort or ill effects are possible if large quantities are swallowed.

CARCINOGENIC POTENTIAL:

Portland cement is not recognized as a carcinogen by NTP, OSHA, or IARC. However, it may contain trace amounts of heavy metals recognized as carcinogens by these organizations. In addition, IARC classifies crystalline silica, a trace constituent, as a known human carcinogen (Group I). NTP has characterized respirable silica as "reasonably anticipated to be a carcinogen." (See also Section 13.)

6. PHYSICAL/CHEMICAL DATA

APPEARANCE/ODOR:	Gray, white or colored powder, odorless	PHYSICAL STATE:	Solid (Powder)
BOILING POINT:	> 1000°C	MELTING POINT:	Not applicable
VAPOR PRESSURE:	Not applicable	VAPOR DENSITY:	Not applicable
pH (IN WATER) (ASTM D 1293-95)	12 to 13	SOLUBILITY IN WATER:	Slightly soluble (0.1% to 1.0%)
SPECIFIC GRAVITY (H_2O = 1.0):	3.15	EVAPORATION RATE:	Not applicable

7. FIRE AND EXPLOSION

FLASH POINT:	None	LOWER EXPLOSIVE LIMIT:	None
AUTO IGNITION TEMPERATURE:	Not combustible	UPPER EXPLOSIVE LIMIT:	None
FLAMMABLE LIMITS	Not applicable	SPECIAL FIRE FIGHTING PROCEDURES:	None
EXTINGUISHING MEDIA:	Not combustible	UNUSUAL FIRE AND EXPLOSION HAZARDS:	None
HAZARDOUS COMBUSTION PRODUCTS:	None		

8. STABILITY AND REACTIVITY DATA

STABILITY: Product is stable. Keep dry until used.

CONDITIONS TO AVOID: Unintentional contact with water. Contact with water will result in hydration and produces (caustic) calcium hydroxide.

INCOMPATIBILITY: Wet portland cement is alkaline. As such, it is incompatible with acids, ammonium salts and aluminum metal.

HAZARDOUS DECOMPOSITION: Will not occur.

HAZARDOUS POLYMERIZATION: Will not occur.

9. PRECAUTIONS FOR HANDLING, STORAGE AND DISPOSAL

HANDLING AND STORAGE Keep dry until used. Handle and store in a manner so that airborne dust does not exceed applicable exposure limits. Use adequate ventilation and dust collection. Use exposure control and personal protection methods as described in Section 10.

SPILL: Use dry clean-up methods that do not disperse dust into the air or entry into surface water. Material can be used if not contaminated. Place in an appropriate container for disposal or use. Avoid inhalation of dust and contact with skin and eyes. Use exposure control and personal protection methods as described in Section 10.

DISPOSAL: Comply with all applicable local, state and federal regulations for disposal of unusable or contaminated materials. Dispose of packaging/containers according to local, state and federal regulations.

10. EXPOSURE CONTROLS/PERSONAL PROTECTION

RESPIRATORY PROTECTION:	Use local exhaust or general dilution ventilation to control dust levels below applicable exposure limits. Minimize dispersal of dust into the air. If local or general ventilation is not adequate to control dust levels below applicable exposure limits or when dust causes irritation or discomfort, use MSHA/NIOSH approved respirators.
EYE PROTECTION:	Wear safety glasses with side shields or goggles to avoid contact with the eyes. In extremely dusty environments and unpredictable environments, wear tight-fitting unvented or indirectly vented goggles to avoid eye irritation or injury. Contact lenses should not be worn when handling cement or cement containing products.
SKIN PROTECTION:	Wear impervious abrasion- and alkali-resistant gloves, boots, long-sleeved shirt, long pants or other protective clothing to prevent skin contact. Promptly remove clothing dusty with dry portland cement or clothing dampened with moisture mixed with portland cement, and launder before re-use. If contact occurs, wash areas contacted by material with pH neutral soap and water.

11. TRANSPORTATION DATA

Portland cement is not hazardous under U.S. DOT regulations.

12. TOXICOLOGICAL AND ECOLOGICAL INFORMATION

For a description of available, more detailed toxicological and ecological information, contact Lehigh White Cement Company.

13. OTHER REGULATORY INFORMATION

Status under US OSHA Hazard Communication Rule 29 CFR 1910.1200:	Portland cement is considered a hazardous chemical under this regulation and should be included in the employer's hazard communication program.
Status under CERCLA/Superfund, 40 CFR 117 and 302:	Not listed.
Hazard Category under SARA (Title III), Sections 311 and 312:	Portland cement qualifies as a hazardous substance with delayed health effects.
Status under SARA (Title III), Section 313:	May be subject to reporting requirements under Section 313. Contact sales office for further information.
Status under TSCA (as of May 1997):	Some substances in portland cement are on the TSCA inventory list.
Status under the Federal Hazardous Substances Act:	Portland cement is a hazardous substance subject to statutes promulgated under the subject act.

Status under California Proposition 65:	This product contains crystalline silica, a substance known to the State of California to cause cancer. This product also may contain trace amounts of heavy metals known to the State of California to cause cancer, birth defects or other reproductive harm.

14. OTHER INFORMATION

This MSDS provides information on various types of portland cement products. A particular product's composition may vary from sample to sample. The information provided herein is believed by Lehigh White Cement Company to be accurate at the time of preparation or prepared from sources believed to be reliable. Health and safety precautions in this data sheet may not be adequate for all individuals or situations. Users have the responsibility to comply with all laws and procedures applicable to the safe handling and use of the product, to determine the suitability of the product for its intended use, and to understand possible hazards associated with mixing portland cement with other materials. This product neither contains nor is directly manufactured with any controlled ozone depleting substances, Class I and II. SELLER MAKES NO WARRANTY, EXPRESS OR IMPLIED, CONCERNING THE PRODUCT OR THE MERCHANTABILITY OR FITNESS THEREOF FOR ANY PURPOSE OR CONCERNING THE ACCURACY OF ANY INFORMATION PROVIDED BY LEHIGH WHITE CEMENT COMPANY.

ABBREVIATIONS

ACGIH	American Conference of Governmental Industrial Hygienists
ASTM	American Society for Testing and Materials
CAS	Chemical Abstract Service
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
ft^3	Cubic foot
IARC	International Agency for Research on Cancer
m^3	Cubic meter
mg	Milligram
MSHA	Mine Safety and Health Administration
NIOSH	National Institute for Occupational Safety and Health
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
REL	Recommended Exposure Limit
SARA	Superfund Amendments and Reauthorization Act
TLV	Threshold Limit Value
TSCA	Toxic Substance Control Act
TWA	Time Weighted Average

LEHIGH WHITE CEMENT COMPANY SALES OFFICES & TECHNICAL SERVICES:

NORTH REGION

Lehigh White Cement Company
7660 Imperial Way
Allentown, PA 18195
Toll Free: 800-961-5932
Tel: 610-366-4600
Fax: 610-366-4888

infonorth@lehighwhitecement.com

CENTRAL REGION

Lehigh White Cement Company
100 S. Wickson Road
Waco, Texas 76712
Toll Free: 800-331-7062
Tel: 254-772-9350
Fax: 254-776-1799

infocentral@lehighwhitecement.com

SOUTHEAST REGION

Lehigh White Cement Company
3920 Pendola Point Rd.
Tampa, FL 33619
Toll Free: 866-305-2427
Tel: 813-248-4000
Fax: 813-248-4005

infosoutheast@lehighwhitecement.com

WESTERN REGION

Lehigh White Cement Company
1980 Atlanta Avenue
Riverside, CA 92507
Toll Free: 800-368-7557
Tel: 951-683-7796
Fax: 951-683-7798

infowestern@lehighwhitecement.com

HEADQUARTERS

Lehigh White Cement Company • 7660 Imperial Way • Allentown, PA 18195
Toll Free: 800-523-5488 • Tel: 610-366-4600 • Fax: 610-366-4638

info@lehighwhitecement.com

MATERIAL SAFETY
DATA SHEET
Concentrated Mortar Color
A, H, X, J, P, G, Series

PO Box 8288 Springfield, IL 62791
1-800-624-0261

MATERIAL SAFETY DATA SHEET

SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME . . . . . SGS Concentrated Mortar Color

CHEMICAL FAMILY/ALTERNATE IDENTIFIERS . . . . . Inorganic Metal Oxides, Iron (III) Oxide, Ferric Oxide, Carbon Blend
FORMULA . . . . . .Blends of Fe_2O_3, Fe_3O_4, FeOOH, H_2O and C
COMPANY IDENTIFICATION: . . Solomon Colors, Inc.
4050 Color Plant Road
Springfield, IL 62702 USA

FOR INFORMATION CALL: 217-522-3112

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	WT.%	OSHA PEL	ACGIH TLV
Iron (III) Oxide (Fe_2O_3, Fe_3O_4, FeOOH H_2O)	1309-37-1	99+%	None est.	None est.
No. 80, 85, 97 have Carbon (C)	1333-86-4	Proprietary	3.5 mg/m^3	3.5 mg/m^3

SECTION 3. HAZARDS IDENTIFICATION

EYES: May cause eye irritation.
SKIN: May cause skin irritation.
INGESTION: Large oral dosages may cause irritation of the digestive tract.
INHALATION: May cause irritation to the respiratory tract. Symptoms may include coughing and shortness of breath.
CHRONIC EXPOSURE: No chronic health effects are known from repeated exposure to iron oxide pigments.

SECTION 4. FIRST AID MEASURES

EYES: Flush eyes with generous amounts of water for at least 15 minutes lifting lids occasionally. Call a physician if irritation persists.
SKIN: Wash with mild soap and water. Remove contaminated clothing. If irritation develops, consult a physician.
INGESTION: Immediately contact a physician.
INHALATION: Remove to fresh air. If there is difficulty breathing, call a physician.

SECTION 5. FIRE FIGHTING MEASURES

FLASH POINT . . . . . 597 °F

Extinguishing media: Use foam, carbon dioxide (CO_2), dry chemical, or water fog. Do not use high pressure water stream as this may spread burning powder (burning powder will float)
Special Fire Fighting Procedures: May not be obvious that Carbon black is burning unless the material is stirred and sparks are apparent. Carbon black that has been on fire should be observed closely for at least 48 hours. to ensure no smoldering material is present. Firefighters should use self-contained breathing apparatus.
Unusual Fire & Explosive Hazards: Products of combustion include carbon monoxide (CO), carbon dioxide (CO_2), and oxides of sulfur.

SECTION 6. ACCIDENTAL RELEASE MEASURES

ACCIDENTAL RELEASE OR SPILLS: Common housekeeping, vacuum, or scoop material into a container for reclamation or disposal.

SECTION 7. HANDLING AND STORAGE

STORAGE: Keep container dry and tightly closed in cool and well-ventilated place.

SECTION 8. EXPOSURE CONTROLS, PERSONAL PROTECTION

RESPIRATORY PROTECTION. . . . . NIOSH approved respirators for dust when required.
VENTILATION REQUIREMENTS. . . . . Local exhaust for dust when required.
PROTECTIVE GLOVES. . . . . Rubber, plastic, or cloth if appropriate for job conditions.
EYE PROTECTION. . . . . Safety glasses if appropriate for job conditions.
OTHER. . . . . Wash thoroughly after handling and before eating. Keep dust away from food and beverages.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE . . . . . Fine, Dry Powder
COLOR . . . . . Red, Buff, Brown, or Black
ODOR . . . . . Odorless
MELTING POINT . . . . . Not Applicable
BOILING POINT (DEG F) . . . . . Not Applicable
DENSITY . . . . . Not Available
pH . . . . . …Not Available
VAPOR PRESSURE . . . . . .4 to 5
BULK DENSITY . . . . . .55-80 lbs per cubic ft.
SOLUBILITY IN WATER . . . . . Insoluble

SECTION 10. STABILITY AND REACTIVITY

STABILITY . . . . Stable under ordinary conditions. At temperatures above 300°C the product may become unstable and oxidize. This generates additional heat which, under unfavorable conditions, may result in combustion of flammable materials. This product should not be stored near heat sources.
INCOMPATIBILITY. . . . . None Known
HAZARDOUS DECOMPOSITION OR BY-PRODUCTS . . . . . Non Known

HAZARDOUS POLYMERIZATION . . . . Will not occur

SECTION 11. TOXICOLOGICAL INFORMATION

Toxicological studies of a comparable product indicate acute toxicity:
LD50 oral, rat: >5000 mg/kg
Skin and mucous membrane compatibility, rabbit: skin 24 hours exposure – non-irritant
Eyes – non-irritant.

Under extreme conditions mechanical action arising from eye contact (action of dust) may cause slight temporary irritation of mucosa.

SECTION 12. ECOLOGICAL INFORMATION

Toxicological studies of a comparable product indicate:

Acute fish toxicity: LCO = > 1000 mg/l Test species: Golden Orfe (Leuciscus idus)
Acute bacterial toxicity: no harmful effect on Pseudomonas flourescens: > 1000 mg/l
As the product is practically insoluble in water, it is separated in almost any filtration and sedimentation process.

SECTION 13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL: Material which cannot be reclaimed should be disposed of in accordance with local, state, and federal regulations.

SECTION 14. TRANSPORT INFORMATION

DOT: Non-regulated
Hazard Class: Non-regulated
Label: Not required

SECTION 15. REGULATORY INFORMATION

No labeling is required for this material, in accordance with EC Directives.

SECTION 16. ADDITIONAL INFORMATION

Special Precautions
Precautions to be taken in handling and storage: Store in dry place away from ignition sources and strong oxidizers. If hot torch work (welding, torch cutting, etc.) is required, the immediate work area must be cleared of carbon black product. Fine dust may cause electrical shorts and may penetrate electrical equipment unless tightly sealed.

THE INFORMATION AND RECOMMENDATIONS CONTAINED HEREIN ARE BASED UPON DATA BELIEVED TO BE CORRECT. HOWEVER, NO GUARANTEE OR WARRANTY OF ANY KIND EXPRESSED OR IMPLIED IS MADE WITH RESPECT TO THE INFORMATION CONTAINED HEREIN.
(REVISION 3/2012)

Conforms to OSHA HazCom 2012

SAFETY DATA SHEET

Section 1: IDENTIFICATION

Product Name:	Natural Sand or Gravel - Belvedere Facility
Generic ID:	Sand, gravel, aggregate
Usage and Restrictions:	Sand or gravel may be used in the manufacture of concrete blocks and bricks, mortar, cement, concrete, paving materials, and other construction materials. Sand or gravel may be distributed in bags, totes, and bulk shipments. No known recommended restrictions.
Supplier Details:	York Building Products 950 Smile Way York, PA 17404
Emergency Phone #:	717.848.2831

Section 2: HAZARD(S) IDENTIFICATION

GHS Classification:

Carcinogenicity:	1A
Eye Irritation:	2A
Repeated Exposure Skin Irritation:	2
Specific Target Organ Toxicity:	2

GHS Label Elements:

Signal Word:	Danger
Hazard Statements:	Causes skin irritation. Causes serious eye irritation. May cause an allergic skin reaction. Respirable dust may contain crystalline silica, known to cause cancer. May cause respiratory irritation. Causes damage to lungs through prolonged or repeated exposure.
Prevention:	Wash hands thoroughly after handling. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/ protective clothing/eye protection/face protection. Use only outdoors or in a well-ventilated area. Do not breathe dust.
Response:	If exposed or concerned: Get medical advice/attention. If on skin: Wash with plenty of water. Take off contaminated clothing and wash it before reuse. If in eyes: Rinse continuously with water for several minutes. Remove contact lenses, if present and easy to do.
Storage:	Restrict or control access to stockpile areas. Engulfment hazard: To prevent burial or suffocation, do not enter a confined space, such as a silo, bulk truck or other storage container or vessel that stores or contains aggregates without an effective procedure for assuring safety.
Disposal:	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazards Not Otherwise Classified:	None known.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient(s)	CAS Number	% (by weight)	OSHA/MSHA PEL (mg/M³)	ACGIH TLV (mg/M³)
Natural Sand or Gravel		100.0		
QUARTZ (Crystalline Silica)	14808-60-7	<1.0	10/(%SiO_2+2)(R)*	0.1(1997)(R)*
* Respirable fraction				

Section 4: FIRST AID MEASURES

Description of Necessary First Aid Measures:

Eye Contact: Immediately flush with plenty of water for at least 15 minutes. Hold eyelids apart. Remove contacts if present and easy to do. Beyond flushing, do not attempt to remove material from the eye(s). Get medical attention if irritation develops or persists.

Inhalation: Move to fresh air. Call a physician if symptoms develop or persist.

Skin Contact: Wash off with soap and water. Get medical attention if irritation develops and persists.

Ingestion: Rinse mouth and drink plenty of water. Never give anything by mouth to an unconscious person. Get medical attention.

Most Important Symptoms & Effects, Both Acute and Delayed:

Inhaling dust may cause discomfort in the chest, shortness of breath, and coughing. Prolonged inhalation may cause chronic health effects. This product contains crystalline silica. Prolonged or repeated inhalation of respirable crystalline silica liberated from this product can cause silicosis, and may cause cancer.

Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary:

Eye Contact: Causes serious eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.

Inhalation: Dust may cause respiratory tract irritation.

Skin Contact: Causes skin irritation. Wear gloves when handling product to avoid drying and mechanical abrasion of the skin. May cause sensitization by skin contact.

Ingestion: Not a normal route of exposure. May result in obstruction and temporary irritation of the digestive tract.

Section 5: FIRE-FIGHTING MEASURES

Extinguishing Media:

Suitable Extinguishing Media:	Treat for surrounding material.
Unsuitable Extinguishing Media:	Not available.
Special Protective Equipment For Fire-Fighters:	Use protective equipment appropriate for surrounding materials. No specific precautions.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures:

Wear appropriate protective equipment and clothing during clean-up of materials that contain or may release dust.

Methods and Materials For Containment and Cleaning-Up

Spilled material, where dust is generated, may overexpose cleanup personnel to respirable crystalline silica-containing dust. Do not dry sweep or use compressed air for clean-up. Wetting of spilled material and/or use of respiratory protective equipment may be necessary. Avoid discharge of fine particulate matter into drains.

Section 7: HANDLING AND STORAGE

Precautions for Safe Handling:

Handling:	Avoid contact with skin and eyes. Good housekeeping is key to prevent accumulation of dust. Avoid generating and breathing dust. Use wet methods, if appropriate, to reduce the generation of dust. The use of compressed air for cleaning clothing, equipment, etc, is not recommended. Handle with care. When using do not eat or drink. (See section 8)
General Hygiene Advice:	Launder contaminated clothing before reuse. Wash hands before eating or drinking.
Conditions For Safe Storage, Including Any Incompatibilities:	Avoid dust buildup by frequent cleaning and suitable construction of the storage area.

Section 8: EXPOSURE CONTROLS AND PERSONAL MEASURES

Control Parameters

Occupational exposure limits:
1 – Value equivalent to OSHA formulas (29 CFR 1910.1000; 29 CFR 1917; 29 CFR 1918)
2 – Value also applies to MSHA metal/Non-Metal (1973 TLVs at 30 CFR 56/57.5001)
3 – OSHA enforces 0.250 mg/m³ in construction and shipyards (CPL-03-00-007)
4 – Value also applies to OSHA construction (29 CRF 1926.55 Appendix A) and shipyards (29 CFR 1915.1000 Table Z)
5 – MSHA limit = 10 mg/m³

Ingredient	Exposure Limits
Particulates not otherwise classified (CAS SEQ250)	ACGIH TLV (United States, 3/2012) TWA: 3 mg/m³. Form: Respirable particles (2) TWA: 10 mg/m³. Form: Inhalable particles (2) OSHA PEL (United States, 6/2010) PEL: 5 mg/m³. Form: Respirable fraction PEL: 15 mg/m³. Form: Total dust (4) TWA: 5 mg/m³. Form: Respirable fraction (1) TWA: 15 mg/m³. Form: Total dust (1, 4, 5)
Crystalline Silica (Quartz) (CAS 14808-60-7)	OSHA PEL (United States, 6/2010) TWA: 0.3 mg/m. Form: Total dust (1,2) TWA: 0.1 mg/m³. Form: Respirable (1,2,3)
Crystalline Silica (all forms; CAS mixture)	ACGIH TLV (United States, 3/2012) TWA: 0.025 mg/m³. Form: Respirable fraction NIOSH REL (United States, 6/2009) TWA: 0.05 mg/m³. Form: Respirable dust

Engineering Controls: When using product, provide local and general exhaust ventilation to keep airborne dust concentrations below exposure limits. Use wet methods, if appropriate, to reduce the generation of dust.

Exposure Guidelines: OSHA PELs, MSHA PELs, and ACGIH TLVs are 8-hr TWA values. NIOSH RELs are for TWA exposures up to 10-hr/day and 40-hr/wk. Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled.

Individual Protection Measures:

Hygiene Measures: Observe good hygiene, such as washing after handling the material and before eating and drinking. Routinely wash work clothing and protective equipment.

Eye/Face Protection: Wear safety glasses with side shields (or goggles).

Hand/Body Protection: Use personal protective equipment as required.

Hand/Body Protection: When performing work that produces dust or respirable crystalline silica in excess of applicable exposure limits, wear a NIOSH-approved respirator that is properly fitted and is in good condition. Respirators must be used in accordance with all applicable workplace regulations.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:

Appearance:	White or tan sand, granular, crushed, or ground to fine mesh sizes.
Color:	Not applicable.
Odor:	Odorless.
Odor Threshold:	Not applicable.
Physical State:	Solid.
pH:	Not applicable.
Melting/Freezing Point:	Not applicable.
Boiling Point:	Not applicable.
Flash Point:	Not applicable.
Evaporation Rate:	Not applicable.
Flammability:	Not flammable.
Lower Flammability/Explosive Limit:	Not applicable.
Upper Flammability/Explosive Limit:	Not applicable.
Vapor Pressure:	Not applicable.
Vapor Density:	Not applicable.
Relative Density/Specific Gravity:	2.5-2.7
Solubility in water:	Slight.
Partition coefficient: n-octanol/water:	Not applicable.
Auto-ignition Temperature:	Not applicable.
Decomposition Temperature:	Not applicable.
Viscosity:	Not applicable.
SADT:	Not applicable.
Oxidizing Properties:	Not applicable.
Explosive Properties:	Not applicable.

Section 10: STABILITY AND REACTIVITY

Reactivity:	Product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical Stability:	Material is stable under normal conditions.
Hazardous Reaction Possibility:	No dangerous reaction known under conditions of normal use.
Conditions to avoid:	Avoid contact with strong oxidizing agents.
Incompatible materials:	Crystalline silica may react violently with strong oxidizing agents, causing fire and explosions.
Hazardous decomposition:	Silica dissolves in hydrofluoric acid producing a corrosive gas-silicon tetrafluoride.

Section 11: TOXICOLOGICAL INFORMATION

Information On Toxicological Effects:

Acute Toxicity: Not expected to be acutely toxic.

Irritation/Corrosion: Skin: Dust: May cause irritation through mechanical abrasion. This product is not expected to be a skin hazard.
Eyes: Direct contact with eyes may cause temporary irritation through mechanical abrasion.
Inhalation: Repeated inhalation of respirable crystalline silica (quartz) may cause silicosis, a fibrosis (scarring) of the lungs. Silicosis is irreversible and may be fatal. Silicosis increases the risk of contracting pulmonary tuberculosis. Some studies suggest that repeated inhalation of respirable crystalline silica may cause adverse health effects including lung and kidney cancer.

Ingestion: Not likely due to product form. However accidental ingestion may cause discomfort.

Sensitization: Respiratory sensitization: No respiratory sensitizing effects known.
Skin sensitization: Not known to be a dermal irritant or sensitizer.

Mutagenicity: No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Aspiration Hazard: Not expected to be an aspiration hazard.

Reproductive Toxicity: Not expected to be a reproductive hazard.

Symptoms related to physical, chemical, toxicological characteristics: Dust: discomfort in the chest. Shortness of breath. Coughing.

Carcinogenicity: Respirable crystalline silica has been classified by IARC and NTP as a known human carcinogen, and classified by ACGIH as a suspected human carcinogen.

Ingredient(s)	OSHA	IARC	ACGIH	NTP
Crystalline Silica (Quartz) CAS 14808-60-7)	Not Listed	1 Carcinogenic to humans	A2	Known to be a human Carcinogen

Specific Target Organ Toxicity (Acute Exposure):

Ingredient(s)	Route of Exposure	Target Organs
Crystalline Silica (Quartz) CAS 14808-60-7)	Inhalation	Not reported to have effects.

Specific Target Organ Toxicity (Chronic Exposure):

Ingredient(s)	Route of Exposure	Target Organs
Crystalline Silica (Quartz) CAS 14808-60-7)	Inhalation	May cause damage to organs (lung through prolonged or repeated exposure.

Potential chronic health effects: General: Prolonged inhalation of respirable crystalline silica may be harmful. May cause damage to organs (lungs) through prolonged or repeated exposure. There are reports in the literature suggesting that excessive crystalline silica exposure may be associated with autoimmune disorders and other adverse health effects involving the kidney. In particular, the incidence of scleroderma (thickening of the skin caused by swelling and the thickening of fibrous tissue) appears to be higher in silicotic individuals. To date, the evidence does not conclusively determine a causal relationship between silica exposure and these adverse health effects.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity:

Not expected to be harmful to aquatic organisms. Discharging aggregate, sand and gravel dust and fines into waters may increase total suspended particulate (TSP) levels that can be harmful to certain aquatic organisms.

Persistence and degradability:	Not applicable.
Bioaccumulative potential:	Not applicable.
Mobility in soil:	Not applicable.
Other adverse effects:	No other adverse environmental effects (e.g., ozone depletion, photochemical ozone creation potential, global warming potential) are expected from this component.

Section 13: DISPOSAL CONSIDERATIONS

Disposal Methods:	Do not allow fine particulate matter to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with fine particulates. Dispose of contents in accordance with local/regional/national/international regulations.
Hazardous Waste Code:	Not regulated.
Waste From Residues/Unused Products:	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.
Contaminated Packaging:	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty packaging materials should be recycled or disposed of in accordance with applicable regulations and practices.

Section 14: TRANSPORTATION INFORMATION

	DOT Classification	IMDG	IATA
UN Number	Not regulated.	Not regulated.	Not regulated.
UN Proper Shipping Name	----	----	----
Transport Hazard Class(es)	----	----	----
Packing Group	----	----	----
Environmental Hazards	----	----	----

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code.

Section 15: REGULATORY INFORMATION

Safety, Health and Environmental Regulations/ Legislations Specific For The Chemical:

US: SDS prepared pursuant to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

OSHA Hazard Communication Standard, 29 CFR 1910.1200 TSCA Section 12(b) Export Notification (40 CFR 707, Subpart. D):	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200 Not regulated
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):	Not listed.
CERCLA Hazardous Substance List (40 CFR 302.4):	Not listed.
Clean Air Act Section 112 (b); Hazardous Air Pollutants (HAPs):	Not regulated
Clean Air Act Section 112 (r) Accidental Release Prevention (40 CFR 68.130):	Not regulated.
Safe Drinking Water Act (SDWA):	Not regulated.

Section 16: OTHER INFORMATION

Date of Preparation:	05-30-16
Expiration Date:	None
Version:	1.0
Revision Date:	N/A

Disclaimer: We believe the statements, technical information and recommendations contained herein are reliable, but are given without warranty or guarantee of any kind. In particular, the data furnished in this sheet do not address hazards that may be posed by other materials mixed with limestone to produce limestone products. Users should review other relevant material safety data sheets before working with this limestone or working on limestone products. Inexperienced product users should obtain proper training before using this product. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for the user's own particular use.

- END -

GERDAU

Material Safety Data Sheet

Material Name: Carbon Steel

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

Manufacturer Information

Gerdau Long Steel North America
4221 West Boy Scout Blvd.
Suite 600
Tampa, FL 33607

Phone: (800) 876-3626

Emergency # 800-424-9300 CHEMTREC

* * * Section 2 - Hazards Identification * * *

Emergency Overview

Fumes may cause irritation of the eyes and respiratory tract.

Potential Health Effects: Eyes

May cause irritation.

Potential Health Effects: Skin

Not considered to cause skin effects. Sensitive individuals may experience skin irritation.

Potential Health Effects: Ingestion

Not considered a route of exposure under anticipated product use conditions.

Potential Health Effects: Inhalation

Inhalation of fumes may cause irritation of the nose, throat and lungs. Chronic irritation may cause bronchitis, pneumonitis, siderosis, upper respiratory tract irritation, headaches, lack of coordination, metal fume fever.

Medical Conditions Aggravated by Exposure

Respiratory conditions may be aggravated by exposure to metal fumes or dusts.

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

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

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

CAS #	Component	Percent
1309-37-1	Iron oxide	97
7439-96-5	Manganese	2
7440-50-8	Copper	1.5
124-38-9	Carbon dioxide	0.9
7440-02-0	Nickel	0.5
7440-21-3	Silicon	0.4
7440-31-5	Tin	0.08
7446-09-5	Sulfur dioxide	0.08
7723-14-0	Phosphorus	0.06
1314-62-1	Vanadium pentoxide	0.05

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

First Aid: Eyes

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

First Aid: Skin

For skin contact, flush with large amounts of water. If irritation persists, get medical attention.

First Aid: Ingestion

If the material is swallowed, get immediate medical attention or advice.

First Aid: Inhalation

Move person to non-contaminated air. Seek medical attention.

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

General Fire Hazards

See Section 9 for Flammability Properties.

Concentrations of metallic fines in the air could present an explosion hazard.

Material Safety Data Sheet

Material Name: Carbon Steel

Hazardous Combustion Products

Above the melting point, iron oxide fumes may be present.

Extinguishing Media

For molten metal, use Class D chemical or sand.

Fire Fighting Equipment/Instructions

Firefighters should wear full protective gear.

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

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

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

Containment Procedures

None necessary.

Clean-Up Procedures

Fine particles and small chips should be swept up and disposed of properly.

Evacuation Procedures

Isolate area. Keep unnecessary personnel away.

Special Procedures

User should consult applicable standards for specific process employed to determine any special precautions needed to insure the health and safety of its employees.

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

Handling Procedures

Avoid contact with skin and eyes. Wash thoroughly after handling.

Storage Procedures

No special storage procedures necessary.

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

A: Component Exposure Limits

Iron oxide (1309-37-1)

ACGIH: 5 mg/m3 TWA (respirable fraction)
OSHA: 10 mg/m3 TWA (fume)
NIOSH: 5 mg/m3 TWA (dust and fume, as Fe)

Manganese (7439-96-5)

ACGIH: 0.2 mg/m3 TWA
OSHA: 1 mg/m3 TWA (fume)
3 mg/m3 STEL (fume)
5 mg/m3 Ceiling
NIOSH: 1 mg/m3 TWA (fume)
3 mg/m3 STEL

Copper (7440-50-8)

ACGIH: 0.2 mg/m3 TWA (fume); 1 mg/m3 TWA (dust and mist, as Cu)
OSHA: 0.1 mg/m3 TWA (dust, fume, mists, as Cu)
NIOSH: 1 mg/m3 TWA (dust and mist)

Carbon dioxide (124-38-9)

ACGIH: 5000 ppm TWA
30000 ppm STEL
OSHA: 10000 ppm TWA; 18000 mg/m3 TWA
30000 ppm STEL; 54000 mg/m3 STEL
NIOSH: 5000 ppm TWA; 9000 mg/m3 TWA
30000 ppm STEL; 54000 mg/m3 STEL

Material Safety Data Sheet

Material Name: Carbon Steel

Nickel (7440-02-0)
ACGIH: 1.5 mg/m3 TWA (inhalable fraction)
OSHA: 1 mg/m3 TWA
NIOSH: 0.015 mg/m3 TWA

Silicon (7440-21-3)
OSHA: 10 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)
NIOSH: 10 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable dust)

Tin (7440-31-5)
ACGIH: 2 mg/m3 TWA
OSHA: 2 mg/m3 TWA
NIOSH: 2 mg/m3 TWA

Sulfur dioxide (7446-09-5)
ACGIH: 2 ppm TWA
5 ppm STEL
OSHA: 2 ppm TWA; 5 mg/m3 TWA
5 ppm STEL; 15 mg/m3 STEL
NIOSH: 2 ppm TWA; 5 mg/m3 TWA
5 ppm STEL; 13 mg/m3 STEL

Phosphorus (7723-14-0)
OSHA: 0.1 mg/m3 TWA
NIOSH: 0.1 mg/m3 TWA

Vanadium pentoxide (1314-62-1)
ACGIH: 0.05 mg/m3 TWA (dust or fume, respirable fraction)
NIOSH: 0.05 mg/m3 Ceiling (15 min, dust and fume, as V)

Engineering Controls
Use general ventilation and use local exhaust, where possible, in confined or enclosed spaces.

PERSONAL PROTECTIVE EQUIPMENT

Personal Protective Equipment: Eyes/Face
Wear safety glasses; chemical goggles for fumes which may arise from thermal processing.

Personal Protective Equipment: Skin
Use impervious gloves.

Personal Protective Equipment: Respiratory
If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection.

Personal Protective Equipment: General
Eye wash fountain and emergency showers are recommended.

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

Appearance:	Grey metallic	**Odor:**	Metallic or odorless
Physical State:	Solid	**pH:**	NA
Vapor Pressure:	NA	**Vapor Density:**	NA
Boiling Point:	3000°C (5432°F)	**Melting Point:**	1535°C (2795°F)
Solubility (H2O):	NA	**Specific Gravity:**	7.0
Evaporation Rate:	NA	**VOC:**	NA
Octanol/H2O Coeff.:		**Flash Point:**	NA
Flash Point Method:	NA	**Upper Flammability Limit (UFL):**	NA
Lower Flammability Limit (LFL):	NA	**Burning Rate:**	NA
Auto Ignition:	NA		

Material Safety Data Sheet

Material Name: Carbon Steel

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

Chemical Stability

This is a stable material.

Chemical Stability: Conditions to Avoid

None

Incompatibility

Strong Acids

Hazardous Decomposition

Metal fumes if heated. Above the melting point, iron oxide fumes may be present

Possibility of Hazardous Reactions

Will not occur.

* * * Section 11 - Toxicological Information * * *

Acute Dose Effects

A: General Product Information

Operations or fire which supply sufficient energy to the product (i.e. welding, high speed grinding or melting) can release dust or fumes which may make components of the product biologically available. Exposure to dusts or fumes from some metals including iron, zinc, manganese, chromium, cobalt and copper can produce a condition known as metal fume fever. Iron dust can irritate the eyes and respiratory tract by mechanical action. Acute iron poisoning may involve hemorrhagic vomiting and diarrhea, abdominal pain, acidosis, coagulaopathy, shock, coma and convulsions followed by hepatic and renal failure and perhaps cardiovascular collapse. Chronic inhalation of iron has resulted in mottling of the lungs, a condition referred to as siderosis.

Systemic effects from ingestion of nickel include capillary damage, kidney damage, myocardial weakness and central nervous system depression. Allergic skin sensitization reactions are the most frequent effect of exposure to nickel compounds. Exposure to nickel compounds may also result in allergic lung sensitization. Exposure to copper fume or dust can cause respiratory tract irritation, hemolytic anemia and allergic contact dermatitis.

B: Component Analysis - LD50/LC50

Iron oxide (1309-37-1)
Oral LD50 Rat: >10000 mg/kg

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

Nickel (7440-02-0)
Oral LD50 Rat: >9000 mg/kg

Silicon (7440-21-3)
Oral LD50 Rat: 3160 mg/kg

Sulfur dioxide (7446-09-5)
Inhalation LC50 Rat: 2500 ppm/1H

Phosphorus (7723-14-0)
Inhalation LC50 Rat: 4.3 mg/L/1H; Oral LD50 Rat:3.03 mg/kg; Dermal LD50 Rat:100 mg/kg

Vanadium pentoxide (1314-62-1)
Inhalation LC50 Rat: 2.21 mg/L/4H; Oral LD50 Rat:10 mg/kg; Dermal LD50 Rat:>2500 mg/kg

Carcinogenicity

A: General Product Information

The carcinogenic effect of nickel has been well documented in occupationally exposed nickel refinery workers. Lung and nasal cancers were the predominant forms of cancer in the exposed workers.

Material Safety Data Sheet

Material Name: Carbon Steel

B: Component Carcinogenicity

Iron oxide (1309-37-1)

ACGIH: A4 - Not Classifiable as a Human Carcinogen
IARC: Supplement 7 [1987], Monograph 1 [1972] (Group 3 (not classifiable))

Nickel (7440-02-0)

ACGIH: A5 - Not Suspected as a Human Carcinogen
NIOSH: potential occupational carcinogen
NTP: Reasonably Anticipated To Be A Human Carcinogen (Possible Select Carcinogen)
IARC: Monograph 49 [1990], Supplement 7 [1987] (Group 2B (possibly carcinogenic to humans))

Sulfur dioxide (7446-09-5)

ACGIH: A4 - Not Classifiable as a Human Carcinogen
IARC: Monograph 54 [1992] (Group 3 (not classifiable))

Vanadium pentoxide (1314-62-1)

ACGIH: A4 - Not Classifiable as a Human Carcinogen
IARC: Monograph 86 [2006] (Group 2B (possibly carcinogenic to humans))

Teratogenicity

Manganese, copper and nickel have been reported to have adverse reproductive effects in experimental animals. Copper and nickel have been shown to be fetotoxic in experimental animals.

Neurological Effects

Chronic overexposure to manganese compounds may result in CNS effects such as weakness, sleepiness, emotional instability and spastic gait. These effects can be permanent.

Other Toxicological Information

Under normal conditions of handling, the likelihood of inhaling or ingesting amounts necessary for these effects to occur is very small.

* * * Section 12 - Ecological Information * * *

Ecotoxicity

A: General Product Information

No information available for the product.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

Copper (7440-50-8)

Test & Species		Conditions
96 Hr LC50 Pimephales promelas	23 µg/L	
96 Hr LC50 Oncorhynchus mykiss	13.8 µg/L	
96 Hr LC50 Lepomis macrochirus	236 µg/L	
72 Hr EC50 Scenedesmus subspicatus	120 µg/L	
96 Hr EC50 water flea	10 µg/L	
96 Hr EC50 water flea	200 µg/L	

Nickel (7440-02-0)

Test & Species		Conditions
96 Hr LC50 Oncorhynchus mykiss	31.7 mg/L	adult
96 Hr LC50 Pimephales promelas	3.1 mg/L	
96 Hr LC50 Brachydanio rerio	>100 mg/L	
72 Hr EC50 freshwater algae (4 species)	0.1 mg/L	
72 Hr EC50 Selenastrum capricornutum	0.18 mg/L	
96 Hr EC50 water flea	510 µg/L	

Material Safety Data Sheet

Material Name: Carbon Steel

Phosphorus (7723-14-0)

Test & Species		Conditions
96 Hr LC50 Lepomis macrochirus	0.0024 mg/L [flow-through]	
96 Hr LC50 Brachydanio rerio	>100 mg/L [static]	
48 Hr EC50 Daphnia magna	0.111 mg/L	

* * * Section 13 - Disposal Considerations * * *

US EPA Waste Number & Descriptions

Component Waste Numbers

Vanadium pentoxide (1314-62-1)

RCRA: waste number P120

Disposal Instructions

Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations. See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations.

* * * Section 14 - Transportation Information * * *

US DOT Information

Shipping Name: Not Regulated

TDG Information

Shipping Name: Not Regulated

* * * Section 15 - Regulatory Information * * *

US Federal Regulations

A: 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).

Manganese (7439-96-5)

SARA 313: 1.0 % de minimis concentration

Copper (7440-50-8)

SARA 313: 1.0 % de minimis concentration

CERCLA: 5000 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is larger than 100 micrometers); 2270 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is larger than 100 micrometers)

Nickel (7440-02-0)

SARA 313: 0.1 % de minimis concentration

CERCLA: 100 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is larger than 100 micrometers); 45.4 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is larger than 100 micrometers)

Sulfur dioxide (7446-09-5)

SARA 302: 500 lb TPQ

Material Safety Data Sheet

Material Name: Carbon Steel

Phosphorus (7723-14-0)
SARA 302: 100 lb TPQ (This material is a reactive solid. The TPQ does not default to 10000 pounds for non-powder, non-molten, non-solvent form)
CERCLA: 1 lb final RQ; 0.454 kg final RQ

Vanadium pentoxide (1314-62-1)
SARA 302: 100 lb lower threshold TPQ; 10000 lb upper threshold TPQ
CERCLA: 1000 lb final RQ; 454 kg final RQ

B: Component Marine Pollutants

This material contains one or more of the following chemicals required by US DOT to be identified as marine pollutants.

Component	CAS #	
Copper	7440-50-8	DOT regulated severe marine pollutant

State Regulations

A: General Product Information

Product may be subject to reporting in states other than those listed for individual components.

B: Component Analysis - State

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

Component	CAS	CA	MA	MN	NJ	PA	RI
Iron oxide	1309-37-1	Yes	Yes	Yes	Yes	Yes	Yes
Manganese	7439-96-5	Yes	Yes	Yes	Yes	Yes	Yes
Copper	7440-50-8	Yes	Yes	Yes	Yes	Yes	Yes
Carbon dioxide	124-38-9	Yes	Yes	Yes	Yes	Yes	Yes
Nickel	7440-02-0	Yes	Yes	Yes	Yes	Yes	Yes
Silicon	7440-21-3	No	Yes	Yes	Yes	Yes	Yes
Tin	7440-31-5	Yes	Yes	Yes	Yes	Yes	Yes
Sulfur dioxide	7446-09-5	Yes	Yes	Yes	Yes	Yes	Yes
Phosphorus	7723-14-0	Yes	Yes	Yes	Yes	Yes	Yes
Vanadium pentoxide	1314-62-1	Yes	Yes	Yes	Yes	Yes	Yes

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.

Component Analysis - WHMIS IDL

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

Component	CAS #	Minimum Concentration
Iron oxide	1309-37-1	1 %
Manganese	7439-96-5	1 %
Copper	7440-50-8	1 %
Nickel	7440-02-0	0.1 %

Additional Regulatory Information

Material Safety Data Sheet

Material Name: Carbon Steel

Component Analysis - Inventory

Component	CAS #	TSCA	CAN	EEC
Iron oxide	1309-37-1	Yes	DSL	EINECS
Manganese	7439-96-5	Yes	DSL	EINECS
Copper	7440-50-8	Yes	DSL	EINECS
Carbon dioxide	124-38-9	Yes	DSL	EINECS
Nickel	7440-02-0	Yes	DSL	EINECS
Silicon	7440-21-3	Yes	DSL	EINECS
Tin	7440-31-5	Yes	DSL	EINECS
Sulfur dioxide	7446-09-5	Yes	DSL	EINECS
Phosphorus	7723-14-0	Yes	DSL	EINECS
Vanadium pentoxide	1314-62-1	Yes	DSL	EINECS

* * * Section 16 - Other Information * * *

Other Information

Reasonable care has been taken in the preparation of this information, but the manufacturer makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. The manufacturer makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use.

Key/Legend

ACGIH = American Conference of Governmental Industrial Hygienists; ADG = Australian Code for the Transport of Dangerous Goods by Road and Rail; ADR/RID = European Agreement of Dangerous Goods by Road/Rail; AS = Standards Australia; DFG = Deutsche Forschungsgemeinschaft; DOT = Department of Transportation; DSL = Domestic Substances List; EEC = European Economic Community; EINECS = European Inventory of Existing Commercial Chemical Substances; ELINCS = European List of Notified Chemical Substances; EU = European Union; HMIS = Hazardous Materials Identification System; IARC = International Agency for Research on Cancer; IMO = International Maritime Organization; IATA = International Air Transport Association; MAK = Maximum Concentration Value in the Workplace; NDSL = Non-Domestic Substances List; NFPA = National Fire Protection Association; NOHSC = National Occupational Health & Safety Commission; NTP = National Toxicology Program; STEL = Short-term Exposure Limit; TDG = Transportation of Dangerous Goods; TLV = Threshold Limit Value; TSCA = Toxic Substances Control Act; TWA = Time Weighted Average

End of Sheet

GERDAU

Material Safety Data Sheet

Material Name: Alloy Steels

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

Manufacturer Information

Gerdau Long Steel North America
4221 West Boy Scout Blvd.
Suite 600
Tampa, FL 33607

Phone: (800) 876-3626

Emergency # 800-424-9300 CHEMTREC

* * * Section 2 - Hazards Identification * * *

Emergency Overview

This is generally a non-combustible, non-reactive solid material. Certain residues, coating, and hydrocarbon components may render this mixture combustible. Processing of the product for some final uses can include formation of dusts, particulates or fumes which may present certain health hazards. Generation of large quantities of airborne dusts and particulates may produce a fire hazard. Molten metal may react violently with water. Exposure to powder or dusts may be irritating to eyes and skin.

Potential Health Effects: Eyes

Dust or powder may cause irritation and/or inflammation to the eye tissue. Rubbing may cause abrasion of cornea.

Potential Health Effects: Skin

Product may contain levels of components that may cause allergic skin reactions. Dust or powder may irritate the skin. This product may produce skin abrasions, lesions, or cuts.

Potential Health Effects: Ingestion

Ingestion of this product is unlikely; however if ingested may cause gastrointestinal disturbances, abdominal pain, fever, vomiting, and diarrhea. Ingestion of large amounts of product may produce more serious toxicities including: shock, metabolic acidosis, decreased white blood cell count, neurological damage, cardiovascular shock, anemia, liver damage, renal failure, lethargy and coma.

Potential Health Effects: Inhalation

Product may contain levels of components that may cause allergic respiratory sensitization and cancer. Normal use of this product should not generate fumes. Dusts, vapors, and fumes generated during processing may irritate the respiratory system. Severe acute overexposure or chronic overexposure to dusts or processing fumes may produce more serious toxicities including: siderosis, lung damage, weakness, anorexia, impairment of sleep and vision, personality changes, blood formation effects, nervous and circulatory system damage, kidney damage, and may pose a reproductive hazard.

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

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

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

CAS #	Component	Percent
7439-89-6	Iron	93.55-97.73
7440-21-3	Silicon	0.16-2.4
7440-47-3	Chromium	1.2
7439-96-5	Manganese	0.06-2.0
7440-02-0	Nickel	0.7
7440-62-2	Vanadium	0.15

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

First Aid: Eyes

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. In case of mechanical abrasions and cuts, seek medical attention.

Material Safety Data Sheet

Material Name: Alloy Steels

First Aid: Skin

For skin contact, wash immediately with soap and water. Cuts or abrasions should be treated promptly with thorough cleansing of the affected area.

First Aid: Ingestion

Seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

First Aid: Inhalation

Remove the affected person to fresh air. If the affected person is not breathing, apply artificial respiration. Seek medical attention immediately.

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

General Fire Hazards

See Section 9 for Flammability Properties.
Dust accumulation from this product may present an explosion hazard in the presence of an ignition source.
Coatings and oil residue on the product may enhance flammability. Keep product damp to minimize fire hazards.
Avoid welding near product.

Hazardous Combustion Products

Fire or thermal processing may release products of hydrocarbon decomposition and metal fumes.

Extinguishing Media

Dry chemical, soda ash, sand. Molten metal may react violently with water.

Fire Fighting Equipment/Instructions

Fire fighters should wear full-face, self contained breathing apparatus and impervious protective clothing. Fire fighters should avoid inhaling any combustion products.

NFPA Ratings: Health: 1 **Fire:** 0 **Reactivity:** 0
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

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

Containment Procedures

If significant concentrations of dusts or particulates are generated, eliminate sources of ignition.

Clean-Up Procedures

Any excess product can be recycled for further use, disposal in a licensed landfill, or disposed of by other methods in compliance with local, provincial and federal regulations.

Evacuation Procedures

None necessary.

Special Procedures

None

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

Handling Procedures

Avoid inhaling dusts or vapors produced during thermal processing. Avoid eye and excessive skin contact. Use only with adequate ventilation. As with all chemicals, good industrial hygiene practices should be followed when handling this material. Special care must be taken to avoid buildup of dusts.

Storage Procedures

Keep this material in a well-ventilated area. Keep this material slightly damp to avoid fire hazards.

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

A: Component Exposure Limits

Silicon (7440-21-3)

OSHA: 10 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)
NIOSH: 10 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable dust)

Chromium (7440-47-3)

ACGIH: 0.5 mg/m3 TWA
OSHA: 1 mg/m3 TWA
NIOSH: 0.5 mg/m3 TWA

Material Safety Data Sheet

Material Name: Alloy Steels

Manganese (7439-96-5)

ACGIH: 0.2 mg/m3 TWA
OSHA: 1 mg/m3 TWA (fume)
3 mg/m3 STEL (fume)
5 mg/m3 Ceiling
NIOSH: 1 mg/m3 TWA (fume)
3 mg/m3 STEL

Nickel (7440-02-0)

ACGIH: 1.5 mg/m3 TWA (inhalable fraction)
OSHA: 1 mg/m3 TWA
NIOSH: 0.015 mg/m3 TWA

Vanadium (7440-62-2)

OSHA: 0.05 mg/m3 TWA (respirable dust, as V2O5); 0.05 mg/m3 TWA (fume, as V2O5)
NIOSH: 1 mg/m3 TWA (dust, listed under Ferrovanadium dust)
3 mg/m3 STEL (dust, listed under Ferrovanadium dust)

Engineering Controls

Ventilation should be sufficient to effectively remove and prevent buildup of any dusts or fumes that may be generated during handling or thermal processing.

PERSONAL PROTECTIVE EQUIPMENT

Personal Protective Equipment: Eyes/Face

Wear safety glasses with side shields.

Personal Protective Equipment: Skin

Use impervious gloves.

Personal Protective Equipment: Respiratory

When dusts or thermal processing fumes are generated and ventilation is not sufficient to effectively remove them, appropriate NIOSH/MSHA 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:	Metallic Grey	**Odor:**	None
Physical State:	Solid	**pH:**	NA
Vapor Pressure:	NA	**Vapor Density:**	NA
Boiling Point:	NA	**Melting Point:**	2800°F
Solubility (H2O):	Insoluble	**Specific Gravity:**	7.6-7.8
Evaporation Rate:	NA	**VOC:**	NA
Octanol/H2O Coeff.:		**Flash Point:**	NA
Flash Point Method:	NA	**Upper Flammability Limit (UFL):**	NA
Lower Flammability Limit (LFL):	NA	**Burning Rate:**	NA
Auto Ignition:	NA		

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

Chemical Stability

This is a stable material.

Chemical Stability: Conditions to Avoid

None

Incompatibility

Acids.

Hazardous Decomposition

Decomposition of this product may yield metallic oxides.

Material Safety Data Sheet

Material Name: Alloy Steels

Possibility of Hazardous Reactions

Will not occur.

* * * Section 11 - Toxicological Information * * *

Acute Dose Effects

A: General Product Information

Operations or fire which supply sufficient energy to the product (i.e. welding, high speed grinding or melting) can release dust or fumes which may make components of the product biologically available. Exposure to dusts or fumes from some metals including iron, manganese, chromium, and copper can produce a condition known as metal fume fever. Iron dust can irritate the eyes and respiratory tract by mechanical action. Acute iron poisoning may involve hemorrhagic vomiting and diarrhea, abdominal pain, acidosis, coagulaopathy, shock, coma and convulsions followed by hepatic and renal failure and perhaps cardiovascular collapse. Chronic inhalation of iron has resulted in mottling of the lungs, a condition referred to as siderosis. Zinc poisoning can cause anemia, lethargy and dizziness. Early signs of manganese poisoning are sluggishness, loss of appetite, sleepiness, weakness in the legs, uncontrollable laughter, hallucinations, delusions, spastic or slow gait, speech impairment, aggressiveness, tremor, mask-like faces, and clumsy movements. May also result in CNS effects, anemia and lung damage.

Systemic effects from ingestion of nickel include capillary damage, kidney damage, myocardial weakness and central nervous system depression. Allergic skin sensitization reactions are the most frequent effect of exposure to nickel compounds. Exposure to nickel compounds may also result in allergic lung sensitization. Dusts and fumes from this product may cause cancer, reproductive and/or birth defects. Cadmium is a cancer suspect agent. May cause lung, kidney and liver damage. Causes digestive and respiratory tract irritation. May cause reproductive and fetal effect.

B: Component Analysis - LD50/LC50

Iron (7439-89-6)
Oral LD50 Rat: 984 mg/kg

Silicon (7440-21-3)
Oral LD50 Rat: 3160 mg/kg

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

Nickel (7440-02-0)
Oral LD50 Rat: >9000 mg/kg

Carcinogenicity

A: General Product Information

No information available for the product.

B: Component Carcinogenicity

Chromium (7440-47-3)

ACGIH: A4 - Not Classifiable as a Human Carcinogen
IARC: Monograph 49 [1990] (listed under Chromium and Chromium compounds), Supplement 7 [1987] (Group 3 (not classifiable))

Nickel (7440-02-0)

ACGIH: A5 - Not Suspected as a Human Carcinogen
NIOSH: potential occupational carcinogen
NTP: Reasonably Anticipated To Be A Human Carcinogen (Possible Select Carcinogen)
IARC: Monograph 49 [1990], Supplement 7 [1987] (Group 2B (possibly carcinogenic to humans))

Material Safety Data Sheet

Material Name: Alloy Steels

Teratogenicity

Manganese has been shown to have teratogenic effects. Manganese and nickel have been reported to have adverse reproductive effects in experimental animals. Nickel has been shown to be fetotoxic in experimental animals.

Neurological Effects

Chronic overexposure to manganese compounds may result in CNS effects such as weakness, sleepiness, emotional instability and spastic gait. These effects can be permanent. Symptoms of lead toxicity include behavioral disturbances including irritability, restlessness, insomnia, and other sleep disturbances, fatigue, vertigo, headache, poor memory, tremor, depression, and apathy. In acute lead encephalopathy, neurological damage can be permanent. Inhalation of fine aluminum particles has produced progressive encephalopathy, followed by dementia and convulsions.

Other Toxicological Information

Under normal conditions of handling, the likelihood of inhaling or ingesting amounts necessary for these effects to occur is very small.

* * * Section 12 - Ecological Information * * *

Ecotoxicity

A: General Product Information

No information available for the product.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

Iron (7439-89-6)

Test & Species		Conditions
96 Hr LC50 Morone saxatilis	13.6 mg/L [static]	

Nickel (7440-02-0)

Test & Species		Conditions
96 Hr LC50 Oncorhynchus mykiss	31.7 mg/L	adult
96 Hr LC50 Pimephales promelas	3.1 mg/L	
96 Hr LC50 Brachydanio rerio	>100 mg/L	
72 Hr EC50 freshwater algae (4 species)	0.1 mg/L	
72 Hr EC50 Selenastrum capricornutum	0.18 mg/L	
96 Hr EC50 water flea	510 µg/L	

* * * Section 13 - Disposal Considerations * * *

US EPA Waste Number & Descriptions

Component Waste Numbers

Chromium (7440-47-3)

RCRA: 5.0 mg/L regulatory level

Disposal Instructions

Byproducts and residues from this product may be reprocessed or recycled. Whatever cannot be recycled should be managed in an appropriate and approved waste disposal facility. Dispose in accordance to local, state, and federal regulations.

See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations.

* * * Section 14 - Transportation Information * * *

US DOT Information

Shipping Name: Not Regulated

TDG Information

Shipping Name: Not Regulated

Material Safety Data Sheet

Material Name: Alloy Steels

* * * Section 15 - Regulatory Information * * *

US Federal Regulations

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).

Chromium (7440-47-3)

SARA 313: 1.0 % de minimis concentration

CERCLA: 5000 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is larger than 100 micrometers); 2270 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is larger than 100 micrometers)

Manganese (7439-96-5)

SARA 313: 1.0 % de minimis concentration

Nickel (7440-02-0)

SARA 313: 0.1 % de minimis concentration

CERCLA: 100 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is larger than 100 micrometers); 45.4 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is larger than 100 micrometers)

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	MA	MN	NJ	PA	RI
Iron	7439-89-6	Yes	No	No	No	No	No
Silicon	7440-21-3	No	Yes	Yes	Yes	Yes	Yes
Chromium	7440-47-3	Yes	Yes	Yes	Yes	Yes	Yes
Manganese	7439-96-5	Yes	Yes	Yes	Yes	Yes	Yes
Nickel	7440-02-0	Yes	Yes	Yes	Yes	Yes	Yes
Vanadium	7440-62-2	Yes	Yes	No	Yes	Yes	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.

Component Analysis - WHMIS IDL

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

Component	CAS #	Minimum Concentration
Chromium	7440-47-3	0.1 %
Manganese	7439-96-5	1 %
Nickel	7440-02-0	0.1 %

Additional Regulatory Information

A: General Product Information

No information available for the product.

Material Safety Data Sheet

Material Name: Alloy Steels

B: Component Analysis - Inventory

Component	CAS #	TSCA	CAN	EEC
Iron	7439-89-6	Yes	DSL	EINECS
Silicon	7440-21-3	Yes	DSL	EINECS
Chromium	7440-47-3	Yes	DSL	EINECS
Manganese	7439-96-5	Yes	DSL	EINECS
Nickel	7440-02-0	Yes	DSL	EINECS
Vanadium	7440-62-2	Yes	DSL	EINECS

* * * Section 16 - Other Information * * *

Other Information

Reasonable care has been taken in the preparation of this information, but the manufacturer makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. The manufacturer makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use.

Key/Legend

ACGIH = American Conference of Governmental Industrial Hygienists; ADG = Australian Code for the Transport of Dangerous Goods by Road and Rail; ADR/RID = European Agreement of Dangerous Goods by Road/Rail; AS = Standards Australia; DFG = Deutsche Forschungsgemeinschaft; DOT = Department of Transportation; DSL = Domestic Substances List; EEC = European Economic Community; EINECS = European Inventory of Existing Commercial Chemical Substances; ELINCS = European List of Notified Chemical Substances; EU = European Union; HMIS = Hazardous Materials Identification System; IARC = International Agency for Research on Cancer; IMO = International Maritime Organization; IATA = International Air Transport Association; MAK = Maximum Concentration Value in the Workplace; NDSL = Non-Domestic Substances List; NFPA = National Fire Protection Association; NOHSC = National Occupational Health & Safety Commission; NTP = National Toxicology Program; STEL = Short-term Exposure Limit; TDG = Transportation of Dangerous Goods; TLV = Threshold Limit Value; TSCA = Toxic Substances Control Act; TWA = Time Weighted Average

End of Sheet

BETON-CHEMIE USA CORP.
P,O. BOX 549
CASSVILLE, OA 30123
PHONE: (770) 336-9391
FAX: (770) 336-9394
EMAIL: betonchemie@bellsouth.net

To all valued customers:
We would like to point out that ASTM 1364 Standard Specification for Architectural Cast Stone, refers to admixtures under Section 4.1.5.2 to comply with ASTM C494. Color Guard 2 LV, the chemical that most producers are using in semi-dry cast stone product, does not meet this specification. Many other chemicals being used in semi-dry concrete products also do not meet this specification. This type of chemical can be tested under ASTM C494, because this specification is for wet cast admixtures. These special chemicals do not have a specification because they cannot be laboratory tested under the conditions that they are used in the field. ASTM allows this type of material and it is referred to in Section 4.1.5.3 *Other Constituents* — Integral water repellents and other chemicals for which no ASTM standard exists shall be previously established as suitable for use in concrete by proven field performance or through laboratory testing. This type chemical has been used worldwide for over 25 years; no agency has been able to develop a test that can duplicate field use of this product.

Based on this background information, we are requesting that you refer to Color Guard 2LV as a waterproofing admixture. *ASTM* C494 *does not have a classification for this type of chemical.* We also state in our literature that it is a waterproofing admixture. By referring to Color Guard 2LV, as we are requesting, you will qualify it when submitting it for approval.

Respectfully yours

Michael Black
General Manager

MATERIAL SAFETY DATA SHEET

COMPLIES WITH OSHA HAZARD COMMUNICATION STANDARD 29 CFR 1910.1200

Date of preparation January 1 2007

SECTION 1

BETON CHEMIE USA CORP. P.O. BOX 541CASSVILLE. GEORGIA 30123

EMERGENCY TELEPHONE:	(800)-520-1995	BETON CHEMIE **USA** CORP.
	(800) 424 9300	CHEM TREC

TRADE NAME	COLOR GUARD **2LV**	NPCA HMIS RATINGS:
		Health: 1
PRODUCT CLASS:	Concrete (Cast Stone) Admixture	Flammability: 0 Reactivity: 0
PRODUCT APPEARANCE & ODOR:	Milky, opaque solution, low viscosity, bland odor.	Personal Protective Equipment — C

SECTION 2 HAZARDOUS INGREDIENTS

OCCUPATIONAL EXPOSURE LIMITS

INGREDIENT	CAS#	%	ACGIH TLV (TVVA)	ACG1H TLV (STEL)	OSHA PEL (TWA)	OSHA PEL (STEL)	VAPOR PRESSURE
Proprietary components-non hazardous	N.A.	N.A.	N.E.	N.E	N.E.	N.E.	N.A.
Nuosept 95 Preservative	50-00-0	<0.2	1 ppm	2 ppm	1 ppm	2 ppm	1.3 mm Hg @68 F
Dowcil 75 (2% solution)	004080-31-3	<0.8	1 mg/m3	1mg/m3	1mg/m3	1mg/m3	Less than 1 mm Hg © 68 F (very low)

SECTION 3 EMERGENCY AND FIRST AID PROCEDURES

EYE CONTACT:	Wash eyes under flowing water for at least 5 minutes. No adverse effects expected.
SKIN CONTACT:	No adverse effects anticipated by this route of exposure.
INHALATION:	No adverse effects anticipated by this route of exposure.
INGESTION	No adverse effect5 anticipated by this route of exposure.

SECTION 4 PHYSICAL DATA

The following data represents approximate or typical values. They do not constitute product specifications

BOILING RANGE:	Approx. 220 F	pH:	10.0 +/- 0.5
EVAPORATION RATE:	Slower than ether	% VOLATILE BY VOLUME:	Approx. 78%
WEIGHT PER GALLON	8.34	SOLUBILITY IN WATER:	Complete

SECTION 5 FIRE AND EXPLOSION DATA

FLAMMABILITY CLASS:	Water-base - Non Flammable
FLASH POINT:	N.A.
AUTOIGNITION TEMPERATURE:	N.A.
LOWER EXPLOSIVE LIMIT:	N.A.
EXTINGUISHING MEDIA:	Water Fog
UNUSUAL FIRE AND EXPLOSION HAZARDS	None
SPECIAL FIRE FIGHTING PROCEDURES:	Use positive-pressure, self contained breathing apparatus.

TRADE NAME: COLOR GUARD 2LV

SECTION 6 HEALTH HAZARD DATA

EFFECTS OF OVEREXPOSURE	
EYE CONTACT:	No effect expected
SKIN CONTACT:	Essentially non irritating to skin
INHALATION:	No effect expected .
. INGESTION:	Single dose oral toxicity is low. No hazards anticipated from ingestion. The oral LD50 for rats is greater than 10,000 mg/kg.
CHRONIC:	Based on available data, repeated exposures are not anticipated to cause any significant adverse effects.
CARCINOGENICITY:	This product'!. biocide (Nuosept 95) contains trace amounts of Formaldehyde which has been identified as a carcinogen by NTP, IARC, and OSHA - Section 11

SECTION 7 REACTIVITY DATA

STABILITY*	Stable
CONDITIONS TO AVOID:	Extreme temperatures, (high heat/freezing condtions)
INCOMPATIBILITY (MATERIALS TO AVOID):	Oxidizing Agents
HAZARDOUS DECOMPOSITION PRODUCTS:	Same as for wood or paper
HAZARDOUS POLYMERIZATION:	Will not occur

SECTION 8 SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS SPILLED OR RELEASED. Use absorbent material to contain wit.
WASTE DISPOSAL METHOD: Preferable method is to bury. Incinerate under safe conditions. Dispose of in accordance with local, state and federal regulations.

SECTION 9 SAFE HANDLING AND USE INFORMATION:

RESPIRATORY PROTECTION:	Use an approved respirator if needed.
VENTILATION:	Provide general and/or local exhaust ventilation to control airborne levels.
PROTECTIVE GLOVES:	Rubber or neoprene
EYE PROTECTION:	Chemical safety gogg/es.
OTHER PROTECTIVE EQUIPMENT:	Impervious clothing or boots, if needed.

SECTION 10 SPECIAL PRECAUTIONS

DEPT OF LABOR STORAGE CATEGORY:	N.A.
HYGIENIC PRACTICES:	Use reasonable caution and personal cleanliness.
ADDITIONAL PRECAUTIONS.	None

SECTION 11 ADDITIONAL INFORMATION

This product contains the following toxic chemical(s) which are 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.

TOXIC CHEMICAL	CAS#	APPROXIMATE % BY WEIGHT
•NUOSEPT 95 contains trace Formaldehyde	50-00-0	<0.1%
SARA Title III Hazard categories:	Immediate (acute) health delayeid (chronic) health	
Common Names:	Same	
Chronic exposure testing:	Exposure to this material has been found to cause the following effects in laboratory animals. Liver abnormalities, kidney damage,	

SECTION 11 ADDITIONAL INFORMATION

This product contains the following toxic chemical(s) which are 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.

TOXIC CHEMICAL	CAS#	APPROXIMATE % BY WEIGHT
*NUOSEPT 95 contains trace Formaldehyde	50-00-0	<0.1%
SARA Title III Hazard categories:	Immediate (acute) health delayeid (chronic) health	
Common Names:	Same	
Chronic exposure testing:	Exposure to this material has been found to cause the following effects in laboratory animals. Liver abnormalities, kidney damage,	
	eye damage, lung damage, spleen damage, brain damage, nervous system damage	

TRADE NAME: COLOR GUARD 2LV

U.S. D.O.T. PROPER SHIPPING NAME	CONCRETE ADMIXTURE-WATERBASED
U.S. D.O.T. HAZARD CLASS	NON HAZARDOUS
U.S. D.O.T. I.D. NUMBER	N.A.
U.S. D.O.T. CLASSIFICATION	ITEM 33880 SUB 3 LTL55

Note; This material safety data sheet attempts to describe as accurately as possible the potential exposures associated with normal cement/sand use. Health and safety precautions in this data sheet may not be adequate for all individuals and/or situations. The information and recommendations contained herein are based upon data believed to be correct. Beton Chemie USA Corp. makes no warranties, expressed or implied, and assumes liability in connection with any use of this information. Refer to 49 CFR (Code of Federal Regulations) for possible exceptions and exemptions Abbreviations *0SHI Occupational Safety and Health Administration NIOSH = National Institute of Occupational Safety and Health. ACGIH = American Conference of Governmental Industrial Hygienists. TLV= Threshold Limit Value (8-hr. TWA. TWA= Time weighted average. STEL= Short Term Exposure Limit (15 min. TWA). N.A.= Not Applicable. PEL = Permissible Exposure Limit (8-hr. TWA) All statements, information, and data provided in this material data safety sheet are believed to be accurate and reliable, but are presented without any guarantee. Users should make their own investigations to determine the suitability of the information or products for their particular purposes.