SAFETY DATA SHEET

ZIRCON SAND; ZIRCON FLOUR; SPECTRALUX

Continental Mineral Processing

Continental Mineral Proc. Corp.
P.O. Box No. 62005
Cincinnati, Ohio 45262-0005
☎ (513) 771-7190
Fax No. (513) 771-9153

SECTION 1: PRODUCT AND COMPANY INFORMATION

PRODUCT IDENTIFIER AS USED ON THE LABEL: Zircon Sand; Zircon Flour; Spectralux

PRODUCT GRADE / TYPES: Zircon Sand (Unground); Premium Zircon Sand; Zircon Flour 200, 325, 400, 600; Z-Std.; Z-Coarse; Spectralux 1500, 3500, 4500, 5500, 6000, 7000.

CHEMICAL NAME: Zirconium silicate.

MSDS NUMBER: CMP 01

PRODUCT USE: Source of zirconium oxide, elemental zirconium and hafnium; abrasives, refractories, enamels refractory porcelain, catalysts, silicone rubbers; foundry mould; ceramic manufacture.

RESTRICTIONS ON USE: This product is not intended to be used as:
Abrasive blasting media; or
Any product regulated by the U.S. Food and Drug Administration (FDA), including, but not limited to, human or animal food, drugs, medical devices, or cosmetics.

MANUFACTURER: Continental Mineral Processing Corp., P.O. Box 62005, Cincinnati, Ohio 45262-0005. 1-513-771-7190 (Voice); 1-513-771-9153 (Fax).

EMERGENCY INFORMATION (USA): 1-513-771-7190 (Voice); 1-513-771-9153 (Fax).

SECTION 2: HAZARD IDENTIFICATION

DANGER! May cause cancer by inhalation. May cause damage to lungs through prolonged or repeated inhalation. Dust irritating to skin and eyes.

GHS Classification

Health	Environmental	Physical
Carcinogen : Category 1A STOT Chronic : (respiratory) Category 2 Eye Irritation : Category 2B Skin Irritation : Category 2	None	None

Hazards not otherwise classified: This product contains trace amounts of the Naturally Occurring Radioactive Materials (NORMs) uranium at 0.003% and thorium at 0.008%. Chronic inhalation exposure to uranium and thorium may cause lung cancer.

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GHS Label:

Continental Mineral Processing Zircon Sand / Zircon Flour / Spectralux

DANGER! Causes damage to organs (lungs) through prolonged or repeated inhalation exposure. May cause lung cancer. Causes eye and skin irritation. SEE SDS FOR FURTHER INFORMATION

Precautions
Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust. Do not eat, drink or smoke when using this product. Wear protective gloves and eye protection. Wash thoroughly after handling.
If exposed or concerned: Get medical attention.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Get medical attention if pain or irritation persists.
IF ON SKIN: Wash with soap and water to remove particles. Get medical attention if irritation develops or persists. Remove contaminated clothing and wash before reuse.
IF INHALED: Move to fresh air and get medical attention if cough or other symptoms develop.
Store in a dry, well ventilated secure location.
Disposal: Waste product shall be disposed of in accordance with applicable State and local regulations.

CALIFORNIA PROPOSITION 65 WARNING: THIS PRODUCT CONTAINS SUBSTANCES (QUARTZ, RADIONUCLIDES, AND TITANIUM DIOXIDE IN THE FORM OF UNBOUND PARTICLES OF RESPIRABLE SIZE) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER.

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SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS Registry Number	Concentration
Zircon	14940-68-2	97 – 99 %
Aluminum Silicate (Kyanite)	1302-76-7	0.1 – 2 %
Aluminum Oxide (Non-Fibrous)	1344-28-1	0.1 – 2 %
Titanium Dioxide	13463-67-7	Trace (<0.3%)
Crystalline Silica (Quartz)	14808-60-7	Trace (<0.3%)
Natural uranium (NORMs)	7440-61-1	Trace (0.0028- 0.03%)
Natural thorium (NORMs)	7440-29-1	Trace (0.0085-0.0165%)

SECTION 4: FIRST AID MEASURES

FIRSTAID PROCEDURES:

EyeContact: Flush eyes with clean, flowing (low pressure) water for at least 15 minutes. Get medical attention if pain or irritation persists.

Skin Contact: The compound is not hazardous by skin contact, however removal of particles and cleansing of the skin after use is advisable. Get medical attention if irritation develops or persists.

Inhalation: Move to fresh air and get medical attention if cough or other symptoms develop. If not breathing, give artificial respiration or give oxygen by trained personnel, and get immediate medical attention.

Ingestion: No specific intervention is indicated. Consult a physician if necessary.

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SECTION 5: FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES: This product will not burn. No unusual fire or explosion hazards.

EXTINGUISHING MEDIA: This product is compatible with all extinguishing media. Use extinguishing media appropriate local circumstances and the surrounding environment.

PROTECTION FOR FIREFIGHTERS: Use firefighting methods appropriate to local circumstances and the surrounding environment.

SECTION 6: ACCIDENTAL RELEASE MEASURES

NOTE: Review SECTION 5 FIRE FIGHTING MEASURES and SECTION 7 HANDLING (PERSONNEL) sections before proceeding with clean- up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT recommended in SECTION 8 during clean-up.

If spilled product is uncontaminated, collect using dustless method (HEPA vacuum or wet method) and place in appropriate container for use. If spilled product is contaminated: (a) use appropriate method for the nature of contamination; and (b) consider possible toxic or fire hazards associated with the contaminating substances. Do not use compressed air. Collect spilled product in appropriate containers for recycling or disposal. See SECTION 12 for waste disposal.

SECTION 7: HANDLING AND STORAGE

HANDLING (PERSONNEL) Do not breathe dust. Avoid dust formation and accumulation in work area. Avoid contact with skin and eyes. Use normal precautions against bag breakage and spills. Use gloves and wash hands before eating, drinking, applying cosmetics or smoking to minimize dust inhalation or ingestion of residue from hands. Wash hands before breaks and at the end of workday. Use engineering controls to maintain dust levels below exposure limits of SECTION 8.

HANDLING (PHYSICAL ASPECTS) This is a fully oxidized mineral product. As such it cannot support combustion or participate in a dust explosion.

STORAGE Use good housekeeping in storage areas to prevent accumulation of dust. Keep container(s) tightly closed. Store in a dry and well-ventilated place.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS: Use sufficient ventilation to keep exposure to airborne contaminants below the exposure limits listed in this Section. Identify points of dust generation such as conveyor and hopper discharges and equip with effective dust extraction system to control dust at its source. Maintain good housekeeping procedures to prevent dust accumulation on exposed surfaces. See: ACGIH "*Industrial Ventilation, A Manual of Recommended Practice (latest edition).*"

PERSONAL PROTECTIVE EQUIPMENT:

Eye Protection: Wear protective safety goggles, face shield or safety glasses with side shields.

Skin Protection: Wear clothing sufficient to cover the skin, safety shoes, and impervious gloves for hand protection against dry material. Cleanse exposed skin with soap and water. Launder clothing after use.

Respiratory Protection: Use NIOSH/MSHA approved respiratory protection (air purifying or air supplying) with a type 100 (high efficiency) particulate cartridge or canister) where concentrations are above exposure limit values (see table below). A respiratory protection program that meets OSHA 29 CFR part 1910.134 and ANSI Z88.2 (recent version) requirements must be followed whenever workplace

conditions warrant the use of a respirator.

Protection provided by air-purifying respirators is limited. Use a positive pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.

NORMs Protection Dust inhalation is the principal exposure pathway to NORMs. Dosimetry calculations (ICRP 68) conclude that maintaining total dust exposure below the following limiting values will not cause NORM exposure to exceed 1 mSv/yr, the public dose limit for exposure to radioactivity:

Aerodynamic Diameter, µm	Total Dust mg/m^3
1µm	20.0
5 µm	29.3
10 µm	45.2

Meeting the exposure limits for respirable crystalline silica (quartz) and respirable particulates shown below is protective against inhalation exposure to NORMs.

		Exposure Limits mg/m^3		
		OSHA PEL	ACGIH TLV	NIOSH REL
Chemical	Percent	5 mg/m^3 (as Zr), TWA	5 mg/m^3 (as Zr), TWA	5 mg/m^3 (as Zr), TWA
Zircon	97 - 99			
Aluminum silicate	0.1 - 2	15 mg/m^3 (50 MMPCF)(Total Dust); 5 mg/m^3 (15 MMPCF) (Respirable Fraction), TWA	1 mg/m^3 (Respirable Fraction)	Not established
Aluminum Oxide (non-fibrous)	0.1 - 2	15 mg/m^3 (50 MMPCF)(Total Dust); 5 mg/m^3 (15 MMPCF) (Respirable Fraction), TWA	1 mg/m^3 (Respirable Fraction)	Not established
Titanium Dioxide	<0.3%	15 mg/m^3 (50 MMPCF)(Total Dust);	10 mg/m^3 (Total Dust) TWA	2.4 mg/m^3 (Respirable) TWA
U - natural	0.0028 – 0.030	0.25 mg/m^3 insoluble as U, TWA	0.2 mg/m^3 as insoluble U, TWA	0.2 mg/m^3 as insoluble U, TWA
Th – natural	0.0085 – 0.016	Not established	Not established	Not established
Crystalline Silica (Quartz)	0.1 - 1	10 / (%SiO2)+2 mg/m^3 (Respirable fraction) 250 / (%SiO2)+2 MMPCF (Respirable fraction) 30 / (%SiO2)+2 mg/m^3 (Total dust)	0.05 mg/m^3 (Respirable fraction)	0.025 mg/m^3 (Respirable fraction)

NOTES:
OSHA Permissible Exposure Limits (PEL) and ACGIH Threshold Limit Values (TLVs) are an 8-hour time-weighted average (TWA) concentration during a 40-hour work week. NIOSH Recommended Exposure Limit (REL) is a time-weighted average concentration for up to a 10-hour workday during a 40-hour work week.
MMPCF = Millions of particles per cubic foot of air, based on impinger samples counted by light-field techniques.
(%SiO2) = The percentage of crystalline silica determined from airborne samples, except in those instances in which other methods have been shown to be applicable. Both concentration and percent quartz determined from fraction passing size-selector impactor having characteristics set forth in 29 C.F.R. 1910.1000 Table Z-3 footnote (e).

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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Sand- like crystalline solid (Unground form) to fine powder that can vary from gray/white to red / brown.
Odor :odorless
Odor threshold: Not applicable
pH: 6 -7.5 (Aqueous slurry)
Melting point/range: >2100℃ (>3812℉)
Boiling point: 6500 ℃ (11732 ℉)
Flash point: Not applicable; does not flash.
Evaporation rate: No data.
Flammability: Non-flammable.
Vapor pressure: No data.
Vapor density: No data.
Specific gravity: 4.6 – 4.7 g/cc (Bulk density = 100 – 175 lb/ft^3)
Water solubility: insoluble
Partition coefficient: n-octanol / water: No data.
Auto-ignition temperature: Not applicable.
Decomposition temperature: No data.
Viscosity: Not applicable.

SECTION 10: STABILITY AND REACTIVITY

REACTIVITY: Silicate minerals in this product will react with hydrofluoric acid (HF).
STABILITY: Stable.
INCOMPATIBILE MATERIALS: None.
HAZARDOUS DECOMPOSITION PRODUCTS: None.

SECTION 11: TOXICOLOGICAL PROPERTIES

INHALATION EXPOSURE to respirable crystalline silica (quartz) may result in silicosis, a serious adverse health effect.

Silicosis is a lung disease (pneumoconiosis) that can occur after chronic exposure to airborne respirable crystalline silica (quartz). Silicosis may be progressive and cause lung lesions, changes in lung function, including wheezing, shortness of breath, cough and sputum production that may be disabling. Advanced silicosis may be fatal.

The International Agency for Research on Cancer (IARC) concluded that crystalline silica inhaled in the form of quartz from occupational sources is carcinogenic to humans (Group 1). See: IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Vo. 68, “Silica, Some Silicates…” (1997).

The National Toxicology Program (NTP) in its Ninth Annual Report on Carcinogens, classified respirable crystalline silica as a known human carcinogen.

There is evidence that exposure to respirable crystalline silica is associated with autoimmune diseases; increased risk of tuberculosis and kidney disease.

INHALATION EXPOSURE to zircon (zirconium silicate): Pulmonary granuloma in zirconium workers has been reported.

INHALATION EXPOSURE to aluminum silicate and aluminum oxide (non-fibrous): Inhalation exposure to respirable dust particles not otherwise regulated (PNOR) can result in pneumoconiosis.

INHALATION EXPOSURE to NORMs may cause cancer.

INGESTION EXPOSURE: No adverse effects expected for incidental ingestion of this product.

INHALATION EXPOSURE to titanium dioxide in the form of unbound particles of respirable size has been listed as known to the State of California to cause cancer based on IARC classification 2B "possible human carcinogen." NIOSH determined ultrafine particulate 0.1µm to be a potential occupational carcinogen but found insufficient data to classify respirable size titanium dioxide particulate. ACGIH classifies titanium dioxide as A4 not classifiable as a human carcinogen.

SKIN AND EYE CONTACT: Contact may cause irritation by mechanical (abrasive) action.

CHRONIC HEALTH EFFECTS: See "INHALATION" subsection above with respect to silicosis, cancer status and other information relevant to human health.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Individuals with respiratory disease, including but not limited to asthma and chronic obstructive lung disease, should not be exposed to respirable mineral dusts.

SIGNS AND SYMPTOMS OF EXPOSURE: Exposure to mineral dusts may cause mucous membrane and respiratory irritation, cough, sore throat, nasal congestion, sneezing and shortness of breath. IMPORTANT: there may be no immediate symptoms of exposure to hazardous concentrations of respirable crystalline silica (quartz) and elevated levels of airborne crystalline silica (quartz) may not be visible to the unaided eye..

NUMERICAL ESTIMATES OF TOXICITY

Crystalline Silica (Quartz): Oral approximate lethal dose (ALD): >11,000 mg/kg, rat.
Crystalline Silica (Quartz): Aquatic toxicity (LC_{50}) carp >10,000mg/L/72 hr.
Aluminum silicate: Oral toxicity (LD_{50}): 16000 mg/kg,rat.
Aluminum oxide: Oral toxicity (LD_{50}): > 2000 mg/kg (rat); no deaths reported following an acute 4-hour exposure to up to 1,000 mg Al/m^3 as aluminum oxide in groups of 12–18 male Fischer 344 rats (Thomson et al. 1986).
Zircon: Oral toxicity (LD_{50}): > 200 mg/kg, mice.
Titanium dioxide : Oral toxicity (LD_{50}): > 10000 mg/kg, rat

MUTAGENICITY

Quartz: Did not cause genetic damage in cultured bacterial cells; Did not cause genetic damage in animals; Genetic damage was observed in some laboratory tests on cultured mammalian cells, but not others.
Zircon: Ceramic dusts containing zirconium (zirconium oxide/yttrium oxide) proved not to be cytotoxic in 3T3-Balb/c cell lines (Dion *et al.* 1994).
Aluminum silicate: No data.
Aluminum oxide: No data.

REPRODUCTIVE TOXICITY: No data.

Additional Toxicological Information: RTECS TOXICITY DATA FOR PRODUCT COMPONENTS:

COMPONENT	CAS #	NIOSH (RTECS) #
Zircon ($Zr{\cdot}SiO_4$)	14940-68-2	ZH9000000
Aluminum Silicate	12141-46-7	VV8880000
Aluminum Oxide (Al_2O_3)	1344-28-1	BD1200000
Crystalline Silica (SiO_2)	14808-60-7	VV7330000
Titanium Dioxide (TiO_2)	13643-67-7	XR2275000
Uranium – natural (U)	7440-61-1	YR3490000
Thorium – natural (Th)	7440-29-1	XO6400000

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SECTION 12: ECOLOGICAL INFORMATION

No data available on any adverse effects of this material on the environment; insoluble in water.

SECTION 13: DISPOSAL CONSIDERATIONS

RCRA: This product, in its manufactured composition, is neither a "characteristic" nor "listed" hazardous

waste when disposed of, as those terms are defined under the federal Resource Conservation and Recovery Act (42 U.S.C. 6901, et seq.).

DISPOSAL METHOD: This product is generally suitable for landfill disposal. Follow all applicable Federal, State, and local laws, rules, and regulations regarding the proper disposal of this material. If this product has been altered or contaminated with other hazardous substances, appropriate waste analysis may be necessary to determine proper method for disposal. A qualified environmental professional should determine waste characterization, disposal, and treatment methods for this material in accordance with applicable Federal, State and local requirements.

"NORM" Disposal: The presence of trace amounts of naturally occurring radioactive material (NORM) (See SECTION15) may require special disposal consideration in some jurisdictions. Because NORM disposal regulations vary from state to state, please check with the relevant NORM disposal rules in your jurisdiction.

SECTION 14: TRANSPORTATION INFORMATION

U.S.DOT INFORMATION: This product is not regulated by U.S. DOT as a hazardous material (49 CFR part 172.101). OUTSIDE USA: This product is not classified as "dangerous goods" under IAEA SSR 6, IMDG, IATA, Transport Canada and EU transport regulations.

SECTION 15: REGULATORY INFORMATION

COMPONENTS LISTED IN U.S. FEDERAL REGULATIONS AND STATE "RIGHT-TO-KNOW" LAWS:

COMPONENT	CAS #	FEDERAL					STATE (Right-to-Know)			
		RCRA	CERCLA RQ?	SARA 313	SARA EHS	TSCA Listed	PA	NJ	MA	CA
Zircon ($ZrO_2 \cdot SiO_2$) (14940-68-2)	14940-68-2	NO	NO	NO	NO	YES	NO	NO	NO	NO
Crystalline Silica (SiO_2)	14808-60-7	NO	NO	NO	NO	YES	YES	YES	YES	YES
Titanium Dioxide (TiO_2)	13463-67-7	NO	NO	NO	NO	YES	YES	YES	YES	NO
Aluminum Oxide (Al_2O_3)	1344-28-1	NO	NO	NO	NO	YES	YES	YES	YES	NO
Aluminum Silicate (Al_2SiO_5)	1302-76-7	NO	NO	NO	NO	YES	YES	NO	NO	NO
Uranium – natural (U)	7440-61-1	NO	YES*	NO	NO	YES	YES	YES	YES	YES
Thorium – natural (Th)	7440-29-1	NO	YES*	NO	NO	YES	YES	YES	YES	YES

Notes: (*) CERCLA Reportable Quantity (RQ) for radionuclides at 40 C.F.R. 302.4 Appendix B lists RQ for U (natural) at 1 E11 pCi (3.7E9 Bq) and Th (natural) at 1 E 10 pCi (3.7 E7 Bq). RQ eporting for these constituents would be triggered by the "release" of 18,000 pounds of zircon in a 24-hour period.

COMPONENTS LISTED IN GLOBAL INVENTORIES

COMPONENT	CAS #	AUSTRALIA	CANADA	CHINA	EU	JAPAN[1]	JAPAN[2]	KOREA	NEW ZEALAND	PHILIPPINES
Zircon ($ZrO_2 \cdot SiO_2$) (14940-68-2)	14940-68-2	YES	YES	YES	YES	YES	YES	YES	YES	YES
Crystalline Silica (SiO_2)	14808-60-7	YES	YES	YES	YES	YES	YES	YES	YES	YES
Titanium Dioxide (TiO_2)	13463-67-7	YES	YES	YES	YES	YES	YES	YES	YES	YES
Aluminum Oxide (Al_2O_3)	1344-28-1	YES	YES	YES	YES	YES	YES	YES	YES	YES
Aluminum Silicate (Al_2SiO_5)	1302-76-7	YES	YES	YES	YES	NO	NO	YES	YES	NO
U (natural)	7440-61-1	YES	YES	NO	YES	NO	NO	YES	YES	YES
Th (natural)	7440-29-1	YES	YES	NO	YES	NO	NO	NO	YES	YES

AUSTRALIA – Inventory of Chemical Substances (AICS) as amended through January 5, 2010
CANADA – Domestic Substances List (DSL) as amended through December 23, 2009
CHINA – Inventory of Existing Chemical Substances (IECSC) as amended through December 2008
EU – European Inventory of Existing Commercial Chemical Substances (EINECS)
JAPAN1 – Inventory of Existing & New Chemical Substances (ENICS) as amended through November 10, 2006
JAPAN2 – Industrial Safety & Health Law (ISHL) Inventory as amended through September 25, 2009
KOREA – Existing Chemicals Inventory (KECI) as amended through November 4, 2009
NEW ZEALAND – New Zealand Inventory of Chemicals (NZIoC) as published by ERMA New Zealand (November 2009)
PHILIPPINES – Inventory of Chemicals and Chemical Substances (PICCS) 2008

NORM Regulations: This product contains naturally occurring radioactive materials (NORMs) at levels below U.S. Nuclear Regulatory Commission licensing requirements at 10 C.F.R 40. However, state NORM rules vary. The Conference of Radiation Control Program Directors (CRCPD) 2004 Part N Suggested State Regulations recommend exempting zircon from regulation. Some states expressly exempt zircon (Ohio, Maine) other states exempt classes of industrial materials.

CALIFORNIA PROPOSITION 65 WARNING: THIS PRODUCT CONTAINS SUBSTANCES (QUARTZ, RADIONUCLIDES, AND TITANIUM DIOXIDE IN THE FORM OF UNBOUND PARTICLES OF RESPIRABLE SIZE) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER.

SARA 313 Regulated Chemical(s): This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

CANADIAN WHMIS CLASSIFICATION: D-2A; D-2B

The OSHA Hazard Communication Standard 29 CFR §1910.1200 and state and local worker "Right-to-Know" laws and regulations should be strictly followed, which includes training employees on the content of this SDS. Warn your employees (and your customer users in case of resale) by posting or other means of the potential health risks associated with the use of this product and train them in the appropriate personal protective equipment, work and hygiene practices, and engineering controls which will reduce their risk of exposure. This SDS is limited to the product that is sold or distributed in the United States.

SECTION 16: OTHER INFORMATION

NFPA Health Hazard: 1 – Materials which on exposure would cause irritation but only minor residual injury even if no treatment is given,.

NFPA Fire Hazard: 0 – Material will not burn.

NFPA Reactivity: 0 – Normally stable, even under fire exposure conditions and not reactive with water.

HMIS Rating
Health: 2* Moderate Hazard – Temporary or minor injury may occur.
Flammability: 0 Minimal Hazard
Physical: 0 Minimal Hazard
Personal Protection: E

ACRONYMSANDABBREVIATIONSUSEDINTHISMSDS:

ACGIH American Conference of Governmental Industrial Hygienists
Bq/g Measure of specific activity equal to 1 disintegration/second/gram
CA California Right-to-Know Law; "Proposition 65, "CCR TITLE 8 – Division 1 – Chapter 3.2 – Subchapter 1– Article 5 - §339 The Hazardous Substances List
CAS# CAS Registration Number is an assigned number to identify a material
CERCLA Comprehensive Environmental Response, Compensation, and Liability Act, 40 CFR part 302.4 – Designation, Reportable Quantities, and Notification (Table 302.4)
CRCPD Conference of Radiation Control Program Directors
EPA United States Environmental Protection Agency
GHS Globally Harmonized System of Hazard Communication implemented by OSHA at 29 CFR §1910.1200
HMIS Hazardous Materials Identification System of the National Paint & Coatings Association
IARC International Agency for Research on Cancer
Inhalable dust Dust fraction that enters the nose / mouth during breathing (D_{50} of sampler = 50 µm)
ICRP International Commission on Radiological Protection

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MA Massachusetts Right-to-Know Law; MGL PART I – TITLE XVI – CHAPTER 111F Hazardous Substances Disclosure By Employers

mg/m^3 Milligrams per cubic meter

mSv Milli-seiverts

MSHA Mine Safety and Health Administration

N/A Not applicable

NFPA National Fire Protection Association

NIOSH National Institute of Occupational Safety and Health

NJ New Jersey Right-to-Know Law; NJAC 8:59 - Worker and Community Right to Know Act

NORM Naturally Occurring Radioactive Material

NRC U.S. Nuclear Regulatory Commission

NTP U.S. National Toxicology Program

OSHA Occupational Safety and Health Administration

PA Pennsylvania Right-to-Know Law; 34 PA Code § 323. Hazardous Substance List (Appendix A)

PEL Permissible Exposure Limit (OSHA)

RCRA Resource Conservation and Recovery Act (EPA), 40 CFR part 261 - Identification and Listing of Hazardous Waste

REL Recommended Exposure Limit (NIOSH)

Respirable dust The sub-fraction of inhalable dust that penetrates to the alveolar region of lung (D_{50} of sampler = 4μm)

RQ Reportable Quantity

RTECS Registry of Toxic Effects of Chemical Substances: This database contains toxic effects data on some 140,000 chemicals. It is built and maintained by NIOSH.

SARA Superfund Amendments and Reauthorization Act, 40 CFR part 372.65 - Toxic Chemical Release Reporting: Community Right-to-Know

SARA EHS (SARA Extremely Hazardous Substances) 40 CFR part 355 - Emergency Planning and Notification (Appendices A & B)

STEL Short-term exposure limit (ACGIH)

STOT Specific Target Organ Toxicity

STP Standard temperature and pressure (T = ~70^{O}F, P = 1 atm)

TCLP Toxicity Characteristic Leaching Procedure (EPA Method 1311)

TLV Threshold Limit Value (ACGIH)

TSCA Toxic Substances Control Act, 40 CFR 716.120 - Health and Safety Data Reporting

TWA Time Weighted Average

USDOT United Stated Department of Transportation

DISCLAIMER:

This Safety Data Sheet (SDS) is to be used only for this product in its present form. If this product is altered or used as a component in another material, the information on this SDS may not be applicable. This document is generated for the purpose of distributing health, safety, and environmental data to users of the product. This SDS is not a specification sheet, nor should any displayed data be construed as a specification. Some of the information presented and conclusions drawn herein are obtained from sources other than direct test data on the product.

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Date of Safety Data Sheet Preparation: April 12, 2014

END OF SDS No. CMP 01