

SAFETY DATA SHEET

SECTION 1

PRODUCT IDENTIFICATION

PRODUCT:

Product Identifier: Conducrete® DM100
Product Description: Grey Conductive Carbonaceous Concrete
Recommended Use: Earthing / Grounding and Cathodic Protection Systems

SECTION 2

HAZARDS IDENTIFICATION

CLASSIFICATION OF THE SUBSTANCE OR MIXTURE:

Skin Irritation Cat. 2; H315
Eye Damage Cat. 1; H318
Specific Target Organ Toxicity, Single Exposure, Cat. 3 H335
Carinogenicity Cat. 1; H350 (inhalation)



LABELLING:

SYMBOLS:



Signal Word: Danger

Hazard Statements:

- H315: Causes skin irritation
- H318: Causes serious eye damage
- H335: May cause respiratory irritation
- H350: May cause cancer by inhalation

Other Hazards:

- Dusts from this product, when combined with water or sweat, produce a corrosive alkaline solution.

Precautionary Statements:

- P260: Do not breathe dusts
- P264: Wash hands thoroughly after handling
- P270: Do not eat, drink, or smoke when using this product
- P271: Use only in a well-ventilated area
- P280: Wear protective gloves/clothing/eye protection/face protection.
- P302+P352: IF ON SKIN: Wash with plenty of water.
- P321: Specific treatment: Caustic burns must be treated promptly by a doctor.
- P332+P313: If skin irritation occurs: Get medical advice/attention.
- P362+P364: Take off contaminated clothing and wash it before reuse.
- P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P402: Store in a dry place.
- P501: Recycle and or dispose of contents/containers in accordance with local/regional/national/international regulations.

SECTION 3

COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Wt. %	GHS Classification
Calcined Petroleum Coke	64743-05-1	50 - 90	Not Classified
Portland Cement	65997-15-1	10 - 50	Skin Irrit. 2; H315 / Eye Dam. 1; H318 / STOT SE 3; H335
Calcium Oxide	1305-78-8	0.03 – 1.5	Skin Irrit. 2; H315 / Eye Dam. 1; H318
Crystalline Silica	14808-60-7	0.01 – 0.75	Carc. 1; H350

SECTION 4

FIRST AID MEASURES

PRECAUTIONS: First aid providers should avoid direct contact with this chemical. Wear chemical protective gloves, if necessary. Take precautions to ensure your own safety before attempting rescue, (e.g. wear appropriate protective equipment).

EYE: Immediately flush eyes with running water for a minimum of 20 minutes by the clock while forcing eyelids open during flushing. Remove contact lenses, if present and easy to do. Continue rinsing. If irritation persists or if concerned seek medical attention. Take care not to rinse contaminated water into the unaffected eye or onto face.

SKIN: Wash affected areas with pH neutral soap and lukewarm running water and remove contaminated clothing. Launder contaminated clothing before reuse. Seek medical attention for rashes, burns, irritation, dermatitis, and prolonged unprotected exposures to wet cement, cement mixtures, or liquids from wet cement. Burns should be treated promptly by a doctor.

INHALATION: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. If large amounts were inhaled immediate medical attention is required. Call a poison control center or doctor. Give artificial respiration if not breathing and supply oxygen. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If problems persist, seek medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

INGESTION: Rinse mouth. Do NOT induce vomiting. If large amounts were ingested obtain medical attention immediately or transport victim to an emergency treatment center. If conscious, give 2 glasses of water or milk. Do not give anything by mouth to an unconscious or convulsing person.

Most Important Symptoms and Effects, both Acute and Delayed:

Inhalation: High concentrations of airborne dusts are severely irritating to the upper respiratory tract with symptoms such as coughing, sneezing and shortness of breath.

Eye Contact: Severely irritating in contact with eyes. Causes eye damage which may be permanent and may cause blindness. Solid particles react with moisture in the eye to form clumps of moist compound which may be difficult to remove.

Skin Contact: Dusts from this product, when combined with water or sweat, produce a severely irritating alkaline solution and burning of the skin. Symptoms include pain, burns, skin dryness, cracking and eczema.

Ingestion: Severely irritating to the mouth, throat, and gastro-intestinal system if swallowed. Symptoms may include severe pain and burning of the mouth, throat, esophagus and gastrointestinal tract with nausea, vomiting and diarrhea. If aspiration into the lungs occurs during vomiting, severe lung damage may result.

Indication of any Immediate Medical Attention and Special Treatment Needed:

Corrosive material; get immediate medical advice/attention if inhaled, if swallowed or if in eyes.

SECTION 5

FIRE FIGHTING MEASURES

FLASH POINT:	Carbonic matter: May burn if exposed to temperatures above 1290 °F (700 °C).
EXTINGUISHING MEDIA:	Use extinguishing media appropriate to the surrounding fire conditions. Water Fog, Dry Chemical, Foam, or Carbon Dioxide.
SPECIAL HAZARDS:	Products of combustion may contain carbon monoxide, carbon dioxide and sulfur dioxide. Bulk powder of this product may heat spontaneously when damp with water. Corrosive; reacts with water releasing heat and forming an alkaline solution. Fire fighters should wear self-contained breathing apparatus and full protective clothing. Water will set up product.
EXPLOSION DATA:	Powders and dusts may cause an explosion hazard under certain conditions; these conditions are unlikely during normal use.

SECTION 6

ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES:	Avoid all personal contact. Wear protective equipment listed in Section 8. Isolate spill area, preventing entry by unauthorized persons. Do not breathe dusts.
ENVIRONMENTAL PRECAUTIONS:	Avoid waste releases to the environment and prevent material from entering sewers, natural waterways or storm water management systems. Material can be picked up by sweeping, shoveling, or vacuuming.
METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP:	Move containers from spill area. Avoid dust generation and prevent wind dispersal. Vacuum dust with equipment fitted with a HEPA filter and place in a closed labelled waste container.
REFERENCE TO OTHER SECTIONS:	See Section 8 for information on selection of personal protective equipment. See Section 13 for information on disposal of spilled product and contaminated absorbents.

SECTION 7

HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING:

Before handling, it is important that engineering controls are operating, protective equipment requirements and personal hygiene measures are being followed. People working with this should be trained regarding its hazards and its safe use. Do not breathe dusts. Wash hands and exposed skin thoroughly after handling. Use only in a well-ventilated area. Contaminated work clothing should not be allowed out of the workplace. Prevent eye contact: Wear protective gloves/protective clothing and eye protection/face protection. Do not use this product in a confined space without adequate local exhaust ventilation.

CONDITIONS FOR SAFE STORAGE:

Store in a dry, well-ventilated area, away from incompatible materials, such as strong oxidizing agents; other strong oxidants. Protect containers from damage or water. Do not store near food and beverages or smoking materials.

Conducrete® DM100 must be stored in unopened bags clear of the ground in cool, dry conditions.

Storage should be such that no dampness or moisture is allowed to reach Conducrete® DM100 either from the ground, walls or from the environment. This becomes particularly important during the humid season and in coastal regions when atmospheric air contains higher amount of moisture in it.

Do not store Conducrete® DM100 in a building where walls, roof and floor are not completely weather proof.

Do not stack against the wall. Do not store Conducrete® DM100 bags directly on the floor; place on a wooden pallet or plastic sheet.

Plastic is effective as a barrier to keep the Conducrete® DM100 from absorbing moisture.

Do not keep bags on the ground for temporary storage at work site. Pile on raised dry platform e.g. skid and cover with plastic. If no skid is available place Conducrete® DM100 on plastic sheet.

Conducrete® DM100 bags can be torn or otherwise damaged by careless or rough handling, by sharp edges, by nails sticking out of the wooden pallets, by dropping from excessive heights, by the forks of forklift trucks, etc. Conducrete® DM100 bags being transported on trucks should also be protected from rain, drizzle, sea spray, and splashes from puddles and potholes, etc.

Shelf life is limited by direct contact with moisture and/or elevated levels of humidity.

SECTION 8

EXPOSURE CONTROLS / PERSONAL PROTECTION

CONTROL PARAMETERS:

Occupational Exposure Limits:

Ingredient	ACGIH TLV (8-hr. TWA)	U.S. OSHA PEL (8-hr. TWA)	Ontario (Canada) TWA
Calcined Petroleum Coke	10 mg/m ³ (total dust) 3 mg/m ³ (respirable)	15 mg/m ³ (total dust) 5 mg/m ³ (respirable)	Refer to ACGIH TLV
Portland Cement*	1 mg/m ³	15 mg/m ³ (total dust) 5 mg/m ³ (respirable)	Refer to ACGIH TLV
Calcium oxide	2 mg/m ³	5 mg/m ³	Refer to ACGIH TLV
Crystalline silica (Quartz)	0.025 mg/m ³ (respirable)	Quartz (total dust): 30 mg/m ³ / (%SiO ₂ + 2) Quartz (respirable): 10 mg/m ³ / (%SiO ₂ + 2)	0.1 mg/m ³ (respirable) Designated Substance

*value for particulate matter containing no asbestos and less than 1% crystalline silica.

Other Exposure Limits:

NIOSH REL for Portland Cement = 10 mg/m³
IDLH (Immediately Dangerous to Life or Health) = 5000 mg/m³

EXPOSURE CONTROLS:

Engineering Controls:

Dust should be controlled at point of operation. General mechanical and local exhaust ventilation to maintain airborne concentrations below occupational exposure limits. Handle in accordance with good industrial hygiene and safety practice. Ensure regular cleaning of equipment, work area and clothing. If engineering controls and work practices are not effective in controlling exposure to this material, then wear suitable personal protective equipment including approved respiratory protection. Have equipment available for use in emergencies such as spills or fire.

Personal Protection:

Workers must comply with the Personal Protective Equipment requirements of the workplace in which this product is handled.

Eye/Face Protection:

Wear approved safety glasses with side-shields or chemical safety goggles. Wear a face-shield or full-face respirator when needed to prevent exposure to airborne dusts. The use of contact lenses is not recommended.

Skin Protection:

Wear chemical protective gloves, suit, and boots to prevent skin exposure.

Respiratory Protection:

Approved respiratory protective equipment (RPE) is required. An approved respirator, NIOSH 95 rating or higher, must be available in case of accidental releases. Proper respiratory selection should be determined by adequately trained personnel and based on the contaminant(s), the degree of potential exposure and published respirator protection factors.

A respiratory protection program that meets the regulatory requirement, such as OSHA's 29 CFR 1910.134, ANSI Z88.2 or Canadian Standards Association (CSA) Standard Z94.4, must be followed whenever workplace conditions warrant a respirator's use.

Other Protection:

Have a safety shower and eyewash station readily available in the work area.

Every attempt should be made to avoid skin and eye contact. Do not get powder inside boots, shoes, or gloves. Do not allow wet, saturated clothing to remain against the skin. Promptly remove clothing and shoes that are dusty or wet. Wash clothing and shoes thoroughly before reuse.

Do not eat, drink or smoke where this material is handled, stored and processed. Wash hands thoroughly before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas.

Environmental Exposure Controls:

Emissions from ventilation or work process equipment should be monitored to ensure they comply with the requirements of environmental protection legislation.

SECTION 9

PHYSICAL / CHEMICAL PROPERTIES

INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES:

Appearance:	Solid; grey powder
Odour:	Odourless
Odour Threshold:	Not applicable
pH:	12 – 13 (slurry); PH Neutral (solid)
Melting point/Freezing point:	Not applicable
Initial Boiling Point and boiling range:	Not applicable
Flash point:	Not applicable
Flammability:	Not flammable or combustible
Auto-ignition temperature:	>1290 °F, >700 °C
Upper/lower flammability or explosive limits:	Not applicable
Explosive properties:	Not applicable
Oxidizing properties:	Not applicable
Sensitivity to mechanical impact:	Not applicable
Sensitivity to static discharge:	Not applicable
Vapour pressure:	Not applicable
Vapour density:	Not applicable
Density:	64 lbs./ft ³ , 1021 kg/m ³ (powder) [dependent on compaction]
Solubility:	Slightly soluble in water
Partition coefficient (n-octanol/water):	Not applicable
Decomposition temperature:	>2400 °F, >1316 °C
Viscosity:	Not applicable

SECTION 10

STABILITY AND RELIABILITY

REACTIVITY:	Reacts slowly with water forming hydrated compounds, releasing heat and forming an alkaline solution. (Applies to Portland cement, Conducrete® DM100 mixture reduces this reaction).
CHEMICAL STABILITY:	This product is stable in a closed container under normal conditions of storage and use.
POSSIBILITY OF HAZARDOUS REACTIONS:	Aqueous solutions are alkaline and may corrode aluminum. (Applies to Portland cement, Conducrete® DM100 mixture reduces this reaction).
CONDITIONS TO AVOID:	Avoid unintentional contact with water/moisture and with strong acids and other incompatible materials. Avoid extreme heat and open flames. May burn if exposed to temperatures above 1290 °F (700 °C).
INCOMPATIBLE MATERIALS:	Oxidants – Incompatible with strong oxidizing acids, other strong oxidants Strong acids – Incompatible with strong acids; may react vigorously. Aluminum – May be corrosive to aluminum metal. (Portland cement) May react with Ammonium salts
HAZARDOUS DECOMPOSITION PRODUCTS:	In contact with water and moisture, may generate corrosive calcium hydroxide. (Applies to Portland cement, Conducrete® DM100 mixture reduces this reaction)

SECTION 11

TOXICOLOGICAL INFORMATION

LIKELY ROUTES OF EXPOSURE:	Eye and skin contact. Inhalation of dust.
ACUTE TOXICITY DATA:	Data not available for the mixture.
Skin corrosion/irritation:	May cause skin irritation. May cause caustic burns when in prolonged contact with the skin. May be irritating or corrosive to mouth, throat and gastro-intestinal tract.
Serious eye damage/irritation:	Causes serious eye damage and possible blindness. Damage may be permanent if treatment is not immediate.
Specific Target Organ Toxicity Single Exposure:	Breathing dusts may cause respiratory irritation. Inflammation of the respiratory passages, ulceration and perforation of the nasal septum and pneumonia has been attributed to the inhalation of dust.
Aspiration Hazard:	This material is corrosive; if aspiration into the lungs occurs during vomiting, severe lung damage may result.
CHRONIC TOXICITY:	
Specific Target Organ Toxicity Repeated Exposure:	Prolonged and repeated breathing of Portland dust, a component of Conducrete® DM100, may cause lung disease. The extent and severity of lung injury correlates with the length of exposure and dust concentration. Inflammation of the respiratory passages, ulceration and perforation of the nasal septum and pneumonia has been attributed to the inhalation of dust.
Respiratory and/or Skin Sensitization:	Not known to be a respiratory or skin sensitizer.
Germ Cell Mutagenicity:	Not available.
Reproductive Effects:	Not available.
Developmental Effects:	Not available.
Carcinogenicity:	Conducrete® DM100 is not classifiable as a human carcinogen. Portland cement, a component of Conducrete® DM100, contains crystalline silica which is considered a hazard by inhalation. IARC has classified crystalline silica as a Group 1 substance, carcinogenic to humans. This classification is based on the findings of laboratory animal studies (inhalation and implantation) and epidemiology studies that were considered sufficient for carcinogenicity.
Interactions with Other Chemicals:	Not available.

SECTION 12

ECOLOGICAL INFORMATION

TOXICITY	The environmental hazard of the product is considered to be limited.
PERSISTENCE AND DEGRADABILITY:	Non-biodegradable.
BIOACCUMULATION POTENTIAL:	Low bioaccumulation potential as negligible water solubility restricts route of exposure to the aquatic environment.
MOBILITY IN SOIL:	Mobility is insignificant due to negligible water solubility and vapour pressure. May incorporate within soil for extended periods of time.
OTHER ADVERSE EFFECTS:	Not available

SECTION 13

DISPOSAL CONSIDERATIONS

WASTE DISPOSAL:	Reuse or recycle material and containers whenever possible to minimize the generation of waste. All Federal, Provincial, and Local regulations regarding health and pollution must be followed for disposal.
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SECTION 14

TRANSPORT INFORMATION

This product is not classified as a Hazardous Material under U.S. DOT or Canadian TDG regulations. This material is not classified as dangerous under ADR, RID, ADNR, IMDG and IATA regulations.

Special Precautions for User:	<131 °F (55 °C) – No special precautions needed. Between 131 °F and 225 °F (55 °C and 107 °C) loading only under special conditions. >225 °F (>107 °C) – must not be loaded in cargo vessels.
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SECTION 15

REGULATORY INFORMATION

SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/LEGISLATION SPECIFIC FOR THE SUBSTANCE OR MIXTURE:

USA

TSCA STATUS:

Substances are listed on the TSCA inventory or are exempt.

California Proposition 65:

California Proposition 65 Information: This product contains, or may contain, trace quantities of a substance known to the state of California to cause cancer. Conducrete® may contain 0.01 – 0.75 wt% of crystalline silica (CAS No. 14808-60-7).

OSHA HazCom 2012 Hazards:

Skin Irritation – Cat. 2
Eye Damage – Cat. 1
Specific Target Organ Toxicity, Single Exposure – Cat. 3
Carcinogenicity – Cat. 1 (inhalation)

CANADA

This product has been classified in accordance with the hazard criteria of the *Controlled Products Regulations* and the SDS contains all the information required by the *Controlled Products Regulations*.

WHMIS 1988 Classification:

D2A – Other toxic effects (mixture containing low amounts of crystalline silica).
E – Corrosive – Mixture containing calcium oxide; pH > 12 (possible skin irritant in slurry form)

NSNR Status:

Substances are listed on the DSL or are exempt.

SECTION 16

OTHER INFORMATION

Revision Date:

August 2, 2019.

Additional Information:

This safety data sheet is believed to provide a useful summary of the hazards of Conducrete® DM100 as it is commonly used, but cannot anticipate and provide all of the information that might be needed in every situation.

The information provided herein was believed by Earthing Services UK Ltd. to be accurate at the time of preparation or prepared from sources believed to be reliable, but it is the responsibility of the user to investigate and understand other pertinent sources of information to comply with all laws and procedures applicable to the safe handling and use of product and to determine the suitability of the product for its intended use.