SMART CONCRETE®

Hard-Cem®

SAFETY DATA SHEET

1. IDENTIFICATION

Product Identifier:
Hard-Cem

Product Form: Powder

Other Means of Identification: Not Applicable
Recommended use: Concrete additive for abrasion and erosion resistance.
Restrictions on use: For professional use only

Manufacturer's Name: Kryton International Inc.
Address: 1645 E. Kent Avenue, Vancouver, BC, Canada, V5P 2S8
Telephone Number: 1-604-324-8280
FAX Number: 1-604-324-8899
Web Site: www.kryton.com

Emergency Telephone Number:
Kryton International Inc. 1.800.267.8280 (Business Hours, 8:00am-4:30pm Pacific Time) Call a poison center or doctor/physician in your country. BC, Canada: BC Drug and Poison Information Centre 604.682.5050 US: American Association of Poison Control Centers 1.800.222.1222

2. HAZARD IDENTIFICATION

Emergency Overview:

- A black powder material that is not flammable or combustible.
- This product is relatively non-toxic and does not pose an immediate hazard to the health of emergency response personnel or to the environment in an emergency situation.

Potential Health Effects:

- Acute exposure to very dusty conditions may result in mild respiratory irritation and possible eye and skin irritation due to abrasion of the material on tissues.
- Silica, Crystalline (CAS# 14808-60-7), one of the ingredients is listed as carcinogen by IARC and NTP.

Potential Environmental Effects:

- The product has a high degree of intrinsic chemical stability and is relatively non-toxic in the environment.
- Given its fine particle size, spilled material is readily subject to airborne transport and entrainment in runoff.

Hazard Classification

Skin Irritation, Category 2
Serious Eye Irritation, Category 2A
May Cause respiratory Irritation, Category 3
Specific Organ Toxicity – Repeated Exposure (respiratory tract), Category 2

Label Elements

GHS07

GHS08

DANGER

Hazard Statements:

H315 Causes skin irritation
H319 Causes serious eye irritation
H335 May cause respiratory irritation
H373 May cause damage to respiratory organs through prolonged or repeated exposure

Precautionary Statements

P264	Wash hands, forearms and exposed areas thoroughly after handling.
P280	Wear protective gloves, eye protection and respiratory protection.
P265	Do not touch eyes
P260	Do not breathe dust.
P271	Use only outdoors or in a well ventilated area
P403+P233 +P405	Store in a well-ventilated place. Keep container tightly closed. Store locked up.
P501	Dispose of container/material in accordance with local regulations for construction waste.
P302+P352	IF ON SKIN: wash with plenty of water.
P332+317 +P362+P364	IF SKIN irritation occurs, get emergency medical help, take off contaminated clothing and wash before reuse.
P305+	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get emergency medical help.
P304+P340 +P319	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get medical help if you feel unwell.
P321	Specific treatment – see section 4 of this SDS (First Aid Measures).

3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient	Approximate Percent by Weight	C.A.S. Number	Common Name
Ferrous Granules* (consisting of)	100	175448-53-0	N/A
Iron (as Iron Orthosilicate)	31 – 32 (as Fe)	13918-37-1	N/A
Calcium (as Calcium Silicate & Calcium Aluminate)	14 – 16 (as CaO)	12168-85-3 10034-77-2 12042-68-1	N/A

Zinc	2 – 3	7440-66-6	N/A
Silica, Crystalline	0 – 0.1	14808-60-7	N/A

*Under the Canadian Environmental Protection Act, New Substances Notification Regulations, Ferrous Granules is considered a single substance. Its associated CAS number is present on the Domestic Substances List. Under the U.S. Toxic Substances Control Act, Ferrous Granules is treated as a mixture of several components, each of which is present on the TSCA Chemical Inventory.

4. FIRST AID MEASURES

Eye Contact:
- Flush with warm, running water, including under the eyelids, to remove dust particle(s).
- If irritation persists, seek medical attention.

Skin Contact:
- Remove contaminated clothing and wash affected area with soap and warm water.
- Seek medical attention if irritation develops or persists.

Inhalation:
- Remove victim from exposure area to fresh air. If breathing has stopped, give artificial respiration.
- Medical oxygen may be administered, if available, where breathing is difficult.
- If irritation persists or cough or other symptoms develop, seek medical attention.

Ingestion:
- If swallowed, no specific intervention is indicated as material is not likely to be hazardous by ingestion. However, consult a physician if necessary.

Most Important Symptoms and Effects both Acute and Delayed:
Acute: May irritate skin, eyes and respiratory tract.
Delayed: Long term exposure to dust may result in lung damage.

5. FIREFIGHTING MEASURES

Fire and Explosion Hazards:
- This product is not considered a fire or explosion hazard. Hazardous Combustion Products: Not Applicable.

Extinguishing Media:
- Use any means of extinction appropriate for surrounding fire conditions such as water spray, carbon dioxide, dry chemical, or foam. Unsuitable Extinguishing Media – Not Applicable.

Fire Fighting:
- As with any fire, fire fighters should be fully trained and wear full protective clothing including an approved, self-contained breathing apparatus which supplies a positive air pressure within a full face piece mask.

Flashpoint and Method:
- Not Applicable

Upper and Lower Flammable Limit:
- Not Applicable

Autoignition Temperature:
- Not Applicable

6. ACCIDENTAL RELEASE MEASURES

Procedures for Cleanup:

- Control source of spillage if possible to do so safely.
- Clean up spilled material immediately, observing precautions in Section 8, Personal Protection and using methods which will minimize dust generation (e.g., vacuum solids, dampen material and shovel or wet sweep).
- Return uncontaminated spilled material to the process if possible.
- Place contaminated material in suitable labeled containers for recovery or disposal.
- Treat or dispose of waste material in accordance with all local, regional, and national requirements.

Personal Precautions:

- Persons responding to an accidental release should wear protective clothing, gloves and a dust respirator (see also Section 8).
- Close-fitting safety goggles may be necessary in some circumstances to prevent eye contact with dust.

Environmental Precautions:

- Care should be taken to prevent the spillage of this product to aquatic and terrestrial environments.
- Measures to control dust generation from product spills should be applied in dry dusty locations.

Control Parameters and Occupational Exposure Limits

Silica, Quartz, CAS#14808-60-7
ACGIH TLV: TWA: 0.025 mg/m3 8 hours. Form: Respirable fraction
NIOSH REL: TWA: 0.05 mg/m3 10 hours. Form: Respirable dust
OSHA PEL: TWA: 50 µg/m3 8 hours.
Cal/OSHA PEL: TWA: 50 µg/m3 8 hours.
WELs EH40/2005 (UK) TWA: 8 hours. 0.1 mg/m3 respirable dust

Calcium Silicates, CAS 12168-85-3, 10034-77-2

OSHA PEL	15 mg/m³ (total)/5 mg/m³ (resp)
CAL/OSHA PEL	10 mg/m³ (total)/5 mg/m³ (resp)
NIOSH REL	15 mg/m³ (total)/5 mg/m³ (resp)

NOTE: OELs for individual jurisdictions may differ from OSHA PELs. Check with local authorities for the applicable OELs in your jurisdiction. OSHA - Occupational Safety and Health Administration; ACGIH - American Conference of Governmental Industrial Hygienists; NIOSH - National Institute for Occupational Safety and Health. OEL – Occupational Exposure Limit, PEL – Permissible Exposure Limit, TLV – Threshold Limit Value, REL – Recommended Exposure Limit.

7. HANDLING AND STORAGE

Material is to be stored in a dry enclosed area. Material is generally handled in packaged form.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Protective Clothing:

- Gloves and coveralls or other work clothing are recommended to prevent prolonged or repeated direct skin contact.
- Appropriate eye protection should be worn where dust is generated.
- Safety type boots are recommended.

Ventilation:

- Use adequate local or general ventilation to maintain the concentration of dust in the work environment well below recommended occupational exposure limits.

Respirators:

- Where excessive dust is generated and cannot be controlled to within acceptable levels by engineering means, use appropriate NIOSH-approved respiratory protection equipment (a 42CFR84 Class N, R or P-95 particulate filter cartridge).

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Black Powder/Granular Material
Vapour Pressure: Not Applicable
Specific Gravity: Approximately 3.5
Solubility in Water: Insoluble
Odour: None
Vapour Density: Not Applicable
Evaporation Rate: Not Applicable
Particle Size: 50% < 100 microns
Physical State: Solid
Boiling Point/Range: No Data
Coefficient of Water/Oil Distribution: Not Applicable
pH: Not Applicable
Freezing/Melting Point/Range: 1125 – 1150 °C
Odour Threshold: Not Applicable

10. STABILITY AND REACTIVITY

Stability and Reactivity:

- This material is stable and non-reactive under normal temperatures and pressures.

Incompatibilities:

- None have been identified.

Hazardous Decomposition Products:

- Iron oxides and minor amounts of zinc oxide fume may be liberated when in the molten state.

11. TOXICOLOGICAL INFORMATION

General: In the powder form in which this material is sold it is non-toxic. Normal handling will not cause either acute or chronic health effects.

Effects of Acute Exposure:
Skin/Eye: Eye or skin contact with material may cause local irritation due to the mechanical abrasion of the particles but would not cause tissue damage.

Inhalation:

- High concentrations of airborne dust may be irritating to the nose, throat and respiratory passages.

Ingestion:

- The constituents of HARD-CEM have minimal oral toxicity.

Effects of Chronic Exposure:

- Exposure to crystalline silica may cause silicosis and serious lung disease.
- Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.

Acute Oral Toxicity: No Data
Acute Dermal Toxicity: No Data
Acute Inhalation Toxicity: No Data

Carcinogenicity: No casual association between this product exposure and cancer has been established, but Silica, Crystalline (CAS# 14808-60-7), which may be present in small amounts, is listed as a carcinogen by IARC and NTP.

12. ECOLOGICAL INFORMATION

The principle constituents of this product are chemically stable and, as such, it will be relatively inert in the environment. Its primary ecological properties are those commonly associated with fine particulates.

13. DISPOSAL CONSIDERATIONS

If material cannot be returned to process or salvage, dispose of in accordance with applicable regulations.

14. TRANSPORT INFORMATION

PROPER SHIPPING NAME .....Not regulated.
TRANSPORT CANADA CLASSIFICATION. ..... Not applicable.
US DOT HAZARD CLASSIFICATION ..... Not applicable.
TRANSPORT CANADA PRODUCT IDENTIFICATION NUMBER .....Not applicable.
US DOT PRODUCT IDENTIFICATION NUMBER. ..... Not applicable.
MARINE POLLUTANT .....No.
IMO CLASSIFICATION. ..... Not applicable.

15. REGULATORY INFORMATION

U.S.
INGREDIENTS LISTED ON TSCA INVENTORY ..... Yes
HAZARDOUS UNDER HAZARD COMMUNICATION STANDARD. .....No
CERCLA SECTION 103 HAZARDOUS SUBSTANCES.....Zinc .....Yes.....RQ: 1,000 lb.
EPCRA SECTION 302 EXTREMELY HAZARDOUS SUBSTANCE ..... No ingredients apply.
EPCRA SECTION 311/312 HAZARD CATEGORIES .....No hazard categories apply.
EPCRA SECTION 313 TOXIC RELEASE INVENTORY
CALIFORNIA PROPOSITION 65..... WARNING: This product can expose you to chemicals including silica, crystalline which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov
This product contains reportable levels of the following toxic chemicals subject to the Toxic Release Reporting Requirements ..... Zinc (as by-product Dust or Fume) Percent by Weight: 2-3% CAS No. 7440-66-6

CANADIAN:
LISTED ON THE DOMESTIC SUBSTANCES LIST ..... Yes
WHMIS CLASSIFICATION: .....Not a Controlled Product.

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all of the information required by the HPR.

16. OTHER INFORMATION

The information in this Safety Data Sheet is based on the following references:

American Conference of Governmental Industrial Hygienists, 1991, Documentation of the Threshold Limit Values and Biological Exposure Indices, Sixth Edition plus supplements.
American Conference of Governmental Industrial Hygienists, 2000, Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices.
Canadian Centre for Occupational Health and Safety (CCOHS) CHEMpendium Chemical Information Data Base, Disk A2 (2000-2).
Clayton and Clayton, 1994, Patty's Industrial Hygiene and Toxicology, Fourth Edition.
Industry Canada, SOR/88-66, Controlled Products Regulations, as amended.
Merck & Co., Inc., 1983, The Merck Index, An Encyclopedia of Chemicals, Drugs, and Biologicals, Tenth Edition.

Sax, N. Irving, 1989, Dangerous Properties of Industrial Materials, Seventh Edition.
Urben, P. G., 1995, Bretherick's Handbook of Reactive Chemical Hazards, Fifth Edition.
U.S. Department of Health and Human Services, National Institute for Occupational Safety and Health, 1990, NIOSH Pocket Guide to Chemical Hazards. CD-ROM Edition DHHS(NIOSH) Publication No 99-115, April 1999

Manufacture's notes

- The information on this data sheet reflects the currently available knowledge and is reliable provided that the product is used under the prescribed conditions and in accordance with the application specified on the packaging and/or in the technical guidance literature. Any other use of the product, including the use of the product in combination with any other product or any other process, is the responsibility of the user.
- It is implicit that the user is responsible for determining appropriate safety measures and for applying the legislation covering his own activities.

Date SDS Updated: January 31, 2023
SDS Updated by: Research Center, Kryton International Inc.

Date SDS Prepared: December 20, 2004
SDS Prepared by: Cementec Industries Inc.
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