



1. IDENTIFICATION

Product Identifier:

Hard-Cem

Recommended use: Used in the production of Portland cement based concrete materials.

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

Date SDS Updated: January 15, 2018

SDS Updated by: Research Center, Kryton International Inc.

Date SDS Prepared: December 20, 2004

SDS Prepared by: Cementec Industries Inc.

288, 200 Rivercrest Drive SE, Calgary, Alberta, T2C 2X5

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.
- No chronic health effects have been identified for this material.
- None of the reportable constituents are currently identified as carcinogens by OSHA, ACGIH, IARC, NTP or the EU. (see Toxicological Information, Section 11)

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.

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

3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient	Approximate Percent by Weight	C.A.S. Number	Occupational Exposure Limits (OELs) (also see footnote)		LD50/LC50 Species and Route
			OSHA PEL	ACGIH TLV NIOSH REL	
Ferrous Granules*	100	175448-53-0	None established	None established	No Data

Consisting of:

Iron (as Iron Orthosilicate)	31 – 32 (as Fe)	13918-37-1	OSHA PEL ACGIH TLV NIOSH REL	None established None established None established	No Data
Calcium (as Calcium Silicate & Calcium Aluminate)	14 – 16 (as CaO)	12168-85-3 10034-77-2 12042-68-1	OSHA PEL ACGIH TLV NIOSH REL	15 mg/m ³ (total)/5 mg/m ³ (resp) 10 mg/m ³ 10 mg/m ³ (total)/5 mg/m ³ (resp)	No Data
Zinc	2 – 3	7440-66-6	OSHA PEL ACGIH TLV NIOSH REL	None established None established None established	No Data
Aluminum Salt	1 – 5	10043-01-3	OSHA PEL ACGIH TLV NIOSH REL	None established 2 mg/m ³ 2 mg/m ³	No Data
Organic Modifier	1 – 5	NA	OSHA PEL ACGIH TLV NIOSH REL	None established None established None established	No Data

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.

*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.

5. FIREFIGHTING MEASURES

Fire and Explosion Hazards:

- This product is not considered a fire or explosion hazard.

Extinguishing Media:

- Use any means of extinction appropriate for surrounding fire conditions such as water spray, carbon dioxide, dry chemical, or foam.

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.

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 relatively non-toxic. Normal handling should not cause either acute or chronic health effects.

Acute:

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.
- Lead and any other heavy metals are present at very low concentrations (i.e. <0.1%) and in insoluble forms. Therefore, except under the most extreme conditions of overexposure, they are unlikely to represent a potential health risk.
- The major route of potential exposure would be through the generation and inhalation of fumes from molten material. Such fumes would contain principally iron oxides as well as some zinc oxide.
- The inhalation of iron oxide fume can lead to pulmonary siderosis, a relatively benign pneumoconiosis in which pulmonary reaction is minimal.
- If excessive quantities of zinc oxide fume are inhaled, it can result in a condition called metal fume fever.
- The symptoms of metal fume fever will occur within 3 to 10 hours, and include immediate dryness and irritation of the throat, tightness of the chest, and coughing which may later be followed by flu-like symptoms of fever, malaise, perspiration, frontal headache, muscle cramps, low back pain, occasionally blurred vision, nausea, and vomiting.
- The symptoms are temporary and generally disappear, without medical intervention, within 24 to 48 hours of onset. There are no recognized complications, after effects, or chronic effects that result from this condition.

Ingestion:

- The constituents of HARD-CEM have minimal oral toxicity.
- The lead content is sufficiently low and in an insoluble form so that acute lead poisoning would be extremely unlikely.

Chronic:

- No chronic health effects have been identified from the inhalation or ingestion of the material.
- There is no chronic form of metal fume fever but in rare instances an acute incident may be followed by complaints such as bronchitis or pneumonia.
- Chronic lead intoxication is extremely unlikely due to the very low lead content and the insoluble form of the lead present (lead silicate).
- None of the reportable constituents of HARD-CEM are listed as human carcinogens by the Occupational Safety and Health Administration (OSHA), the National Toxicology Program (NTP), the International Agency for Research on Cancer (IARC), the American Conference of Governmental Industrial Hygienists (ACGIH) or the European Union (EU).

12. ECOLOGICAL INFORMATION

The principle constituents of this product are chemically stable and, as such, it will be relatively inert in the environment . However, small quantities of metals (copper, lead and zinc) may be present in runoff or drainage from spilled material in forms which are mainly non-bioavailable. 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.....ZincYes..... 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 65WARNING: This product contains chemicals known
to the State of California to cause cancer, birth
defects or other reproductive harm.
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.

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.
Urban, 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

Manufacturer'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 of last revision of this SDS: January 15, 2018