

1. PRODUCT AND SUPPLIER IDENTIFICATION

Product name: KALMATRON® KF- $\alpha\beta\gamma$
Product identifier: "KF- $\alpha\beta\gamma$ "
Manufacturer's postal address: KALMATRON® Corporation, 236 West Portal Ave,
PMB 153, San Francisco, CA 94127, USA.
Email: kalmatronworld@aol.com

Uses: Radiation Shielding Material. For professional use only.
Trademark KALMATRON®: PATENT #2,724,832;

KALMATRON® KF- $\alpha\beta\gamma$ is a cementitious radiation shielding material for:

- attenuation of remedial and industrial radiations of the buildings and structures;
- decontamination of radioactively contaminated environment,

KF- $\alpha\beta\gamma$ is applicable by any known technique of concrete, shotcrete lining, gunite, stucco application or strewing in a powder form onto/into the source of radiation.

2. HAZARD IDENTIFICATION

Classification: Xi; irritant; R36/37/38, R43.
Human health hazards: Irritating to eyes, respiratory system and skin. May cause sensitization by skin contact.
Environmental hazards: This product is not classed as dangerous for the environment.
Other hazards: None.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name:	CAS number:	EC number:	%:	Classification:
Portland Cement [chromium (VI) of less than 0.0002%]	65997-15-1	266-043-4	>50%	Xi; irritant; R36/37/38, R43
Silica sand	14808-60-7	238-878-4	<50%	Not classified
Chemical base	See section 16 for full text of R- phrases.			

4. FIRST-AID MEASURES

General: If after receiving first aid according to the following instructions and symptoms persist, immediately seek medical attention.

Inhalation: Move exposed person to fresh air. Keep person warm and at rest.
Skin contact: Remove contaminated clothing. Wash skin thoroughly with soap and water. If irritation persists seek medical attention.
Eye contact: Check for and remove any contact lenses. Hold eye lids ajar and immediately flush eyes with water. Continue flushing eyes with water for at least 15 minutes.
Ingestion: If swallowed, rinse mouth with water and drink plenty of water. Seek immediate medical advice and show container or label.

5. FIRE FIGHTING MEASURES

This product is not flammable.

Extinguishing media:

Suitable: Use extinguishing media suitable for the surrounding fire.

Unsuitable: Water jet - may spread fire.

Special exposure hazards: No specific fire or explosion hazard.

Hazardous combustion products: Possible formation of harmful combustion products.

Do not inhale gases formed during the fire.

Advice for firefighters:

Fire-fighters should wear appropriate protective equipment resistant to chemical agents and a self-contained breathing apparatus (SCBA) with a full face piece operated in positive pressure mode. Fight fire hazard with cool water spray from safe distance.

Do not allow extinguishing water to enter sewer system.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Observe general safety rules. Put on appropriate personal protective equipment (see section 8).

Keep unnecessary and unprotected personnel from entering.

Provide adequate ventilation.

Avoid contact with eyes and skin.

Environmental precautions: Do not allow dispersal of strewn material and runoff and contact with waterways, drains and sewers.

Inform the relevant authorities if the product has caused environmental pollution (surface water and ground water).

Methods for containment and clean up:

Move containers from the spill area. Mop up material and place in suitable designated and labeled waste container.

Activated material can be removed mechanically.

Dispose of via a licensed waste disposal contractor.

See section 8 for personal protective equipment and section 13 for waste disposal.

7. HANDLING AND STORAGE

Handling:

Keep packaging sealed until ready for use. Put on appropriate protective equipment (see section 8). Comply with Health and Safety at Work laws.

Work in a well ventilated area. Avoid contact with eyes and skin. Do not ingest.

Storage:

Store in original packaging or tightly closed containers in a dry and well ventilated area. Do not store in temperatures below -22 °C.

Keep away from food, beverages and feeds. Avoid moisture - maximum humidity in storage area is 96%.

Specific applications: Admixture for concrete and mortar. Inorganic oxidant micro/macro elements of the group of metals contained in the cement binders, providing electro-chemical dissolution of cement grains by electrolysis. For professional use only.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Workplace Exposure: Limits (WEL): 8 hour Time Weighted Average (TWA):-
Portland Cement (CAS 65997-15-1) 10mg/m³ total inhalable dust and 4 mg/m³ respirable dust per EH40.

Silica crystalline (CAS 14808-60-7) 0.1mg/m³ respirable dust per EH40.

Occupational exposure controls: Do not eat, drink or smoke when working with product. Avoid contact with eyes and skin and do not breathe dust. Immediately after working wash hands thoroughly with soap and water.

Respiratory protection: In case of exposure to concentrations above WEL's, use appropriate respiratory protection (type FFP2).

Eye protection: Wear safety glasses/goggles to EN166.

Skin protection: Wear impervious, abrasion and alkali resistant gloves, suitable boots and closed long-sleeved protective clothing.

Environmental exposure controls: Prevent direct discharge in to drains or watercourses.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Solid, coarse dry powder.

Odor: Characteristic (slight).

Color: Sand grey.

pH: 12-13.

Melting point: Not applicable.

Density: 137/lb/ft³ or 2200 kg/m³

Flammability: Not flammable.

Solubility: Soluble (35%) during of mixing with the water.

Other information:

Melting point, freezing point, boiling point, flash point, evaporation rate, explosive limits, vapour pressure and density, partition coefficient, autoignition temperature, decomposition temperature, viscosity, explosive properties and oxidizing properties are all not applicable.

10. STABILITY AND REACTIVITY

Stability: Stable with any solid and finished matter in their accomplished phase, under normal conditions. Unstable with hardening reaction like cementitious product when mixed with water.

See handling and storage conditions (see section 7).

Conditions to avoid: Avoid high humid when packages opened.

Materials to avoid: Accidental contact of unpacked product with water.

Hazardous decomposition products:

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. TOXICOLOGICAL INFORMATION

Eye contact: Irritating, may cause chemical burns.

Skin contact: Irritating, may cause sensitization.

Ingestion: Swallowing large quantities may cause irritation to the gastrointestinal tract.

Inhalation: May irritate the throat and respiratory tract leading to coughing.

12. ECOLOGICAL INFORMATION

Ecotoxicity:	This product is not classified as being hazardous to the environment (LC50 aquatic toxicity not determined).
Persistence and degradability:	The dried product may cause mechanical contamination of the soil.
Bioaccumulative potential:	Not expected to bio accumulate.
Mobility:	This product is expected to be completely soluble in water.
Other adverse affects:	None known.

13. DISPOSAL CONSIDERATIONS

Methods of disposal:	Dispose of in accordance with local legislation. Prevent entry into the sewage water system. Dispose of the hardened product as concrete waste.
European Waste Catalogue (EWC):	17 01 01 (construction and demolition wastes - concrete) and 15 01 02 (plastic packaging)

14. TRANSPORT INFORMATION

Product is not covered by the international regulation on the transport of dangerous goods (IMDG, ICAO/IATA, ADR/RID) and therefore no classification is required.

15. REGULATORY INFORMATION

Regulation: According to 1999/45/EC



Classification:	Irritant
Risk phrases:	R36/37/38 Irritating to eyes, respiratory system and skin. R43 May cause sensitization by skin contact.
Safety Phrases:	S2 Keep away from children. S24/25 Avoid contact with skin and eyes. S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S36/37/39 Wear suitable protective clothing, gloves and eye/face protection. S46 If swallowed, seek medical advice immediately and show this container or label.
National legislation and requirements:	Health and Safety at Work etc Act 1974 Control of Substances Hazardous to Health Regulations COSHH 2002 Control of Substances Hazardous to Health (Amendment) Regulations COSHH 2004 Environmental Protection Act 1990 Any authorized manual on First Aid by Manual Handling Operations Regulations (as amended)

16. OTHER INFORMATION

The information on this datasheet 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 technical guidance literature.

Any other use of the product 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/her own activities.

The information on this datasheet is accurate at the time of printing but KALMATRON® Corporation reserve the right to amend details as part of product development program.

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