Material Safety Data Sheet

SKAMOL FL-06 Insulating Mortar

1. HEMICAL PRODUCT & COMPANY IDENTIFICATION

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TRADE NAME: Skamol FL-06 Mortar CHEMICAL NAMES: Part (A) Mixture of Calcined Kaolin and Fireclay with starch. Part (B) Sodium metasilicate pentahydrate	SYNONYMS: Insulating mortar
PREPARED BY: Clayton Environmental Consultants, Inc. REVISED BY: Skamol A/S	DATE OF ISSUE/REVISION: March 2008 Rev. 04

2. INGREDIENTS

Component	CAS Number(s)	Percent	ACGIH TLV	OSHA PEL	Units
Part (A) Calcined kaolin	1332-58-7	> 80	10*	15*	mg/m^3
Part (A) Fireclay	130498-21-4	<25	10*	15*	mg/m^3
Part (A) Starch	9005-84-9	< 2.5	10*	15*	mg/m^3
Part (A) Quartz	14808-60-7	5.0 – 6.5	0.1**	$\frac{10}{\%\ Quartz\ +2}$ ***	mg/m^3
Part (B) Sodium meta-silicate pentahydrate	10213-79-3	100	10*	15*	mg/m^3

* Total dust ** Respirable quartz *** Respirable dust

The ACGIH TLV and OSHA PEL listed for natural and synthetic minerals and silicates and for sodium metasilicate pentahydrate are the 1995-1996 TLV for "particulates, not otherwise classified" and the 1996 OSHA PEL for "particulates not otherwise regulated." The OSHA PEL for respirable quartz is calculated from the percentage of quartz in the respirable dust. The TLV and PELs listed are 8-hour time-weighted average exposure limits.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Part (A) is a greyish powder; Part (B) is white crystals or powder. Dusts may cause irritation of the eyes, skin, mucous membranes, and respiratory tract; Part (B) is strongly alkaline and can cause chemical burns. Part (A) contains small amounts of crystalline silica (quartz), which has been identified as a potential carcinogen. Use appropriate personal protective equipment. Keep unnecessary personnel out of the area when working with the product or during cleanups.

POTENTIAL HEALTH EFFECTS:

Eye Contact: Dusts from Part (A) may cause irritation. Part (B) is highly alkaline and can cause chemical burns to the cornea and eyelid.

Skin Contact: Dusts from Part (A) may cause irritation. Part (B) is highly alkaline and can cause chemical burns to the skin.

Skin Absorption: Not known to be absorbed through intact skin.

Inhalation: Dusts from Part (A) may cause respiratory tract and mucous membrane irritation. Inhalation of quartz contained in Part (A) can cause lung damage, silicosis and/or cancer. Part (B) is highly alkaline and can cause severe irritation of the respiratory system.

Acute silicosis can result from extremely high exposures to crystalline silica dust, particularly when the particle sizes are small. Acute silicosis is rapidly progressive with diffuse pulmonary involvement rather than the localized, nodular involvement seen in classical silicosis. Acute silicosis may develop only months after the initial exposure, and has been reported to cause death in as little as 1 to 2 years.

Ingestion: Not expected to be an important route of entry into the body. Ingestion of large amounts of Part (A) may cause irritation of the mouth, esophagus, and stomach. Ingestion of dry or liquid formulations containing more than 20% of Part (B) can result in serious injury, including burns. Additional effects of ingesting Part (B) can include nausea, vomiting, and stomach pain.

CHRONIC AND CARCINOGENIC HEALTH EFFECTS:

Part (A): The International Agency for Research on Cancer (IARC) in Monograph 68 states: *There is sufficient evidence in humans for the carcenogenicity of inhaled crystalline silica from occupational sources.*

Part (B) is strongly alkaline. Prolonged contact with the mixed product or dusts from Parts (A) and (B) may cause dermatitis.

Long-term effects of inhalation of Part (B) may include digestive disorders in addition to the respiratory irritant effects of short-term exposure. Long-term effects of ingestion of Part (B) may include frequent urination and kidney damage.

Pre-existing lung, skin, or kidney conditions possibly may be aggravated by prolonged exposure to high concentrations of Part (A) or Part (B).

4. FIRST AID MEASURES

Inhalation: Remove exposed person to fresh air. If there is a possibility that the person has inhaled Part (B), and the person is conscious, rinse mouth and nose with water. If breathing is difficult, oxygen may be administered. If breathing has stopped, artificial respiration should be started immediately. Get medical attention.

Eyes: Flush with tepid water for at least 20 minutes while holding the eyelids wide open. If there is a possibility that Part (B) has contacted the eyes, get medical attention immediately. Otherwise, seek medical attention if irritation develops.

Skin: Remove contaminated clothing and wash skin thoroughly with mild soap and water. If burns are present, get medical attention. Otherwise, seek medical attention if irritation develops. Launder contaminated clothing before reuse.

Ingestion: Not expected to be an important route of entry into the body. If large amounts of Part (A) are ingested, seek medical attention. If Part (B) is ingested, and the person is conscious, give the person large amounts of water to drink. Do not induce vomiting. If vomiting occurs, keep head lower than hips to help prevent aspiration of liquid. Get medical attention immediately.

Note to Physician: No specific antidote. Treat symptomatically and supportively.

5. FIRE FIGHTING MEASURES

FLASH POINT: None LEL: None UEL: None

AUTOIGNITION TEMPERATURE: None

Product will not burn in air. Use fire fighting methods suitable for other materials present in the surrounding fire.

A self-contained breathing apparatus operating in positive pressure mode and full fire fighting gear should be worn for combating fires.

6. ACCIDENTAL RELEASE MEASURES

Pick up released product using appropriate implements and place in original containers if reusable. If not reusable, place in appropriate containers for disposal. Part (B) should be stored in carbon steel or stainless steel containers; Part (B) and mixtures containing Part (B) should not be stored in galvanized containers or otherwise allowed to contact with light metals such as aluminum, tin, and zinc or their alloys.

Appropriate personal protective equipment cited in Section 8 should be worn during cleanup operations.

Part (B) is highly alkaline and should not be flushed into sewer systems, watercourses, or into drains that empty into watercourses. Although Part (A) is not hazardous to the environment, material collected during cleanup may be contaminated with hazardous materials. If there is a potential for contamination, material collected during cleanup should be treated as hazardous until specific testing, including TCLP, shows the material to be non-hazardous. Spills of part (B) may be reportable under CERCLA. See Section 15 for reportable quantity.

7. HANDLING AND STORAGE

Wear appropriate protective equipment cited in Section 8 during handling. Good housekeeping practices should be employed to prevent generation and accumulation of dusts.
RESPIRATORY PROTECTION: If exposures may exceed the limits cited in Section 2, use, as a minimum, a NIOSH-approved half-facepiece respirator with cartridges approved for particulates having an exposure limit of not less than 0.05 mg/m3. If exposures may exceed 10 times the limits cited in Section 2, consult respiratory protective equipment suppliers or a professional industrial hygienist for assistance in selection of proper respiratory protective equipment. The evaluation of a need for respiratory protective equipment should be made by a professional industrial hygienist. Employees who use respiratory protection must be included in a respiratory protection program that conforms to the requirements of OSHA standards or corresponding state laws and regulations. After handling product, wash face and hands before eating, drinking, or smoking.

The product should be stored in a dry place. Part (B) should be stored either in its original packaging or in carbon steel or stainless steel containers. Part (B) and mixtures containing Part (B) should not be stored in galvanized containers or allowed to contact light metals such as aluminum, tin, and zinc or their alloys.

8. EXPOSURE CONTROL - PERSONAL PROTECTION

ENGINEERING CONTROLS: Local exhaust ventilation should be provided as needed to maintain exposures below the limits cited in Section 2. Design details for local exhaust ventilation systems can be found in the most recent edition of *Industrial Ventilation – A Manual of Recommended Practice*, published by the American Conference of Governmental Industrial Hygienists, P.O. Box 16153, Lansing, MI 48910. The need for local exhaust ventilation should be evaluated by a professional industrial hygienist. Local exhaust systems should be designed by a professional engineer.

EYE PROTECTION: Chemical splash goggles or dustproof goggles and a face shield should be worn when working with this product. Do not wear contact lenses when working with this product.

SKIN PROTECTION: Protective gloves (rubber or neoprene) should be worn while mixing and working with this product. A polymer-coated apron and other protective garments such as arm covers are recommended where there is a possibility that work clothing may become contaminated by dust generated while mixing the product or by splattering or dripping of the mixed product. Soiled work clothing and personal protective equipment should be thoroughly cleaned before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND PHYSICAL STATE:
Part (A) Greyish powder
Part (B) White granules or powder

MELTING POINT:
Part (A) not determined
Part (B) 162°F (72°C)

VAPOR DENSITY: Not applicable

OCTANOL/WATER PARTITION COEFFICIENT: Not applicable

VAPOR PRESSURE: Not applicable

EVAPORATION RATE: Not applicable

ODOR: None

SPECIFIC GRAVITY/BULK DENSITY:
Bulk density 1300 kg/m3

% VOLATILES BY VOLUME: Not volatile

BOILING POINT:
Part (A) not determined
Part (B) 239.9°F (115.5°C)

% SOLUBILITY IN WATER: 15% for the prepared mixture of Parts (A) and (B)

pH: Part (A) 6.5 (in water),
Part (B) 12.5 (1% solution)

10. STABILITY AND REACTIVITY

STABILITY (CONDITIONS TO AVOID): None known

INCOMPATIBILITIES: Part (B) reacts violently with acids, and can attack aluminum and zinc. Part (B) ignites on contact with fluorine. Contact of Part (B) with certain metals, including aluminum, tin, zinc, and their alloys can generate hydrogen gas, which can form explosive mixtures with air.

HAZARDOUS DECOMPOSITION PRODUCTS: Heating the starch constituent of Part (A) can produce products of thermal decomposition and complete or partial combustion, including carbon monoxide, carbon dioxide, and smoke. Thermal decomposition of Part (B) can produce toxic and/or hazardous gases, including corrosive sodium oxide vapor.

HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION

The International Agency for Research on Cancer (IARC) in *Monograph 68* states: There is sufficient evidence in humans for the carcenogenicity of inhaled crystalline silica from occupationsl sources.

Sodium metasilicate pentahydrate is strongly irritating to the skin, eyes, and mucous membranes. Due to its alkalinity, it can cause corrosive damage on contact with mucous membranes.

Upon contact with moist skin, sodium metasilicate may cause strong irritation with erythema, pain, and blistering. Application of 250 mg to human skin for 24 hours caused severe irritation.

Contact of sodium metasilicate with the eyes by accidental splashes followed promptly by washing with water have been observed to cause damage to the corneal epithelium.

Ingestion of sodium metasilicate may cause gastrointestinal upset with painful swallowing, abdominal pain, vomiting, nausea, and burns in the oral cavity and alimentary canal. A single dose of 8 mg/kg as a 10.5% solution given to dogs by gastric intubation produced emesis in 6 minutes, which continued for 33 minutes.

Effects on the kidneys have been observed in an animal feeding study. Dogs fed sodium silicate in their diet at a dose of 2.4 g/kg/day for 4 weeks exhibited polydipsia and polyuria, and damage to renal tubules was observed in 15 of the 16 dogs tested.

12. ECOLOGICAL INFORMATION

Detailed studies on the environmental fate of the product have not been conducted. Part (A) is not expected to present a hazard to aquatic and terrestrial flora and fauna. Part (B) is a highly alkaline, corrosive material and may present a hazard to aquatic and terrestrial flora and fauna. This material should be prevented from entering the environment.

13. DISPOSAL CONSIDERATIONS

Part (A) of his product is not classified as a hazardous waste under current EPA regulations. Disposal at an EPA-approved landfill is recommended. If product may be contaminated with other materials, testing, including TCLP, should be performed to determine the hazard characteristics.

Part (B) in mixture with water is corrosive and is a RCRA Hazardous Waste (Classification D002, Unlisted hazardous wastes-characteristic of corrosivity).

It is the user's responsibility to dispose of all wastes in accordance with local, state, and federal regulations.

Empty containers may have residues from the product. Observe proper safety and handling precautions for product containers.

14. TRANSPORTATION INFORMATION

Part (A) is not regulated under current U.S. Department of Transportation rules.
The following information applies to Part (B)

ID Number: UN3253

Proper Shipping Name: Disodium trioxosilicate, pentahydrate

DOT Hazard Class: 8 (Corrosive)

DOT Packing Group: III

15. REGULATORY INFORMATION

Quartz is listed in the State of Massachusetts as an Extraordinarily Hazardous Substance and carcinogen, when present in dust-producing material, but is exempt if particulates are not present and cannot be substantially generated through use of the product. Crystalline silica whose particle size is in the respirable range has been listed by the State of California as a compound known to cause cancer.

The product's components are not regulated under SARA Title III, Section 313. The components may be reportable under SARA Title III, Sections 311 and 312.

OSHA Hazard Communication Categories:
Part (A): Irritant, Skin Hazard, Lung Hazard, Carcinogen
Part (B): Irritant, Skin Hazard, Lung Hazard, Nephrotoxin

SARA Hazard Categories:
Part (A): Acute Hazard, Chronic Hazard
Part (B): Acute Hazard. Chronic Hazard

TSCA Status: All known constituents except the following are listed in the TSCA Inventory of Chemical Substances:

Diopside (CAS No. 14483-19-3) is present in trace amounts in Part (A).

Fireclay (CAS No. 130498-21-4) is a major constituent of Part (A). As a naturally occurring substance, listing is not required.

Sodium metasilicate pentahydrate (CAS No. 10213-79-3) constitutes 100% of Part (B). Listing is not required because anydrous sodium metasilicate (CAS No. 6834-92-0) is listed in the TSCA Inventory of Chemical Substances.

RCRA Hazardous Waste Classification:
Part (A): Not classified as a Hazardous Waste
Part (B) in mixture with water: D002, Unlisted hazardous waste-characteristic of corrosivity

CERCLA Reportable Quantity:
Part (A) Not reportable under CERCLA
Part (B) in mixture with water: 100 pounds

WHMIS Classification:
Part (A) Classification D2A
Part (B) Classification E

16. OTHER INFORMATION

U.S. CONTACT:

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IMPORTANT SAFETY NOTICE: The information in the Material Safety Data Sheet relates only to the specific material described herein and does not relate to use in combination with any other material or substance or in any process. We believe that the information contained herein is current as of the date of issue of this Material Safety Data Sheet. Because the use of this information and the conditions of use of this product are not within the control of Skamol a/s and Skamol, Inc., it is the user's obligation to determine the conditions of safe use of this product.

Users of this product should study this Material Safety Data Sheet and become aware of the product hazards and safety information before using the product. Users should also notify their employees, agents, and contractors regarding information contained in this Material Safety Data Sheet and any product hazards and safety information in order to provide for safe use of this product.