

Material Safety Data Sheet

1. MATERIAL & COMPANY IDENTIFICATION

Product Name : SmartHard N
Manufacturer : S3 Technologies Sdn Bhd
Address : PT 5889, Jalan Changkat Larang, 31007 Batu Gajah, Perak
Contact : Tel: 05-3651232 Fax: 05-3651233

2. COMPOSITION / INFORMATION ON INGREDIENTS

OPC : Grey Portland Cement
Tricalcium silicate ($3\text{CaO}\cdot\text{SiO}_2$) and dicalcium silicate ($2\text{CaO}\cdot\text{SiO}_2$) are Portland cement's constituent, along with varying amount of alumina, tricalcium aluminate and iron oxide as tetracalcium aluminoferrate. Small amounts of magnesia, sodium, potassium and sulfur are also present. Chromium may be present in the finish cement since kiln's refractory lining and steel balls used in the finish-milling operations are possible sources.

CAS Reg. No. : 65997-15-1
OSHA PEL : 10 mg/m^3 TDust
ACGIH TLV : 10 mg/m^3 TDust

Silica Sand : Silica oxide (SiO_2) are essential constituent in silica sand.
CAS Reg. No. : 14808-60-7
OSHA PEL : 10 mg/m^3
ACGIH TLV : 0.1 mg/m^3 crystalline silica

Chemical additives : Proprietary additive
CAS Reg. No. : Propriety Mixture (Not Available)

3. HAZARDS IDENTIFICATION

3.1 Ingestion

Material can cause burning and alkaline poisoning.

3.2 Inhalation

Inhalation symptoms include eye, nose and upper respiratory tract irritation, cough, expectoration, shortness of breath and wheezing. Within 12 to 48 hours after 1 to 6 hours exposures, first, second and third-degree burns may occur. There may be no obvious pain at the time of exposure. Allergic reactions and changes in x-rays are also sign of exposure. Individuals with a sensitivity to hexachromium salts should avoid exposure. Individuals with chronic respiratory disorder or skin diseases should minimize exposure.

3.3 Eye Contact

Splashes into the eyes can cause corneal edema.

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3. HAZARDS IDENTIFICATION (Continued)

3.4 Skin Contact

Powder mixture contain Portland cement, the latter is a nuisance dust and an irritant to skin, eyes and mucous membranes. Its principle health hazard occurs from the formation of alkaline calcium hydroxide (forming from the addition of water to Portland cement); this material is abrasive and can burn the skin. Dry cement will not cause alkaline burns. Some individuals appear to tolerate brief skin contact with wet cement but others develop extensive skin burns. Repeated or prolong skin exposure can cause dermatitis, including skin dryness, fissures, eczematous rashes and dystrophy of the nails. Extensive burns with dermal necrosis can occur. Allergic dermatitis may result from the presence of heavy metal such as chromium in the mixture.

4. FIRST AID MEASURES

4.1 Ingestion

Never give anything by mouth to an unconscious or convulsing person. If ingested, rinse mouth with water and seek immediate medical assistance.

4.2 Inhalation

Move the victim to fresh air. If breathing is difficult, give oxygen; if victim is not breathing, give artificial breathing, and seek immediate medical assistance.

4.3 Eye Contact

Flush with plenty of water for 15 minutes and seek medical advice without delay.

4.4 Skin Contact

Remove contaminated shoes and clothing. Rinse affected area with large amounts of water followed by washing the area with soap and water. If irritation persists, seek medical assistance.

4.5 General

In all cases of doubt, or where symptoms persist, medical advice should be obtained.

5. FIRE-FIGHTING MEASURE

Specific Hazards : Non-Combustible material

Extinguishing Media : Use extinguishing media like water, spray carbon dioxide, chemical foams type applied as appropriate to the surrounding fire.

Flammability Limits : Not Applicable

Fire Fighting Advice : Non-Combustible material

6. ACCIDENTAL RELEASE MEASURES

Notify safety personnel of large leaks. Provide adequate ventilation. Wear protective equipment to prevent skin and eye contact. Sweep, vacuum or shovel spilled material whilst trying to minimize dust generation. Dispose according to local authority guidelines. Do not allow material to enter drain or waterways.

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7. HANDLING AND STORAGE

Handling : Avoid direct contact with skin and eyes. Bagged material should be stacked in a safe and stable manner.

Storage : Store in a dry place in the original bags.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Engineering Controls

Avoid generating dust. Where dust could be generated whilst handling product, use local mechanical ventilation or extraction to minimize exposure to those involved.

8.2 Personal Protection

When handling or mixing the dry product, avoid inhaling dust. Wear dust mask, safety glasses, chemical resistant apron and impervious gloves. Precaution should be taken to avoid skin or eye contact or ingesting the product. Always wash hand before eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: Grey Powder
Odour	: None
pH	: 12
Solubility	: Insoluble but undergo hydration
Specific Gravity	: Not applicable
Vapour Pressure	: Approximately 0 mm Hg
Vapour Density	: Not applicable
Viscosity	: Not applicable
Freezing Point	: Not applicable
Flammability	: Not applicable

10. STABILITY AND REACTIVITY

10.1 Stability

Stable at normal temperatures when kept dry. When wet, sets to a hard lump with evolution of small amounts of heat.

10.2 Materials and Conditions to Avoid

React with moisture and become alkaline.

10.3 Hazardous Decomposition Products

OPC is an alkaline, abrasive and hygroscopic material.

11. TOXICOLOGICAL INFORMATION

11.1 Ingestion

If small amounts are swallowed there are unlikely to cause any serious ill effects. If large quantities are ingested, this could result in irritation to the gastrointestinal tract.

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11. TOXICOLOGICAL INFORMATION (Continued)

11.2 Inhalation

Dust arising from preparation is not likely to cause significant disease or toxic effect if exposure is kept under reasonable control.

11.3 Eye Contact

May cause discomfort and irritation.

11.4 Skin Contact

Prolonged contact may cause irritation and drying to skin especially when wet.

12. ECOLOGICAL INFORMATION

This product is not biodegradable. Avoid contaminating waterways.

13. DISPOSAL CONSIDERATIONS

Product should be disposed in accordance with local regulations and legal requirements.

14. TRANSPORT INFORMATION

No special packaging requirement. Not classified as dangerous goods under the United Nations Transport Recommendations.

15. REGULATORY INFORMATION

Not classified as dangerous under current regulation.

16. OTHER INFORMATION

The information contained in this MSDS is provided for use in assessing the hazardous nature of material. Information was prepared carefully, using current references available to us. Information provided is to be the best of our knowledge and belief, accurate and reliable as of the date indicated. However, no representation, warranty or guarantee is made as to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself/ herself as to the suitability and completeness of information provided here for his own particular use. We do not accept liability for any loss or damage that may occur from the use of this information.