HEKIM YAPI ENDUSTRISI SANAYI VE TICARET A.S.
Guzelyali Mahallesi, Istasyon Caddesi, Egemen Sokak
34903 Pendik-Istanbul – TURKIYE

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Material Safety Data Sheet (MSDS)

1. CHEMICAL PRODUCT AND MANUFACTURER COMPANY IDENTIFICATION

CHEMICAL PRODUCT IDENTIFICATION :

Product/Trade Name	**: HEKIMBOARD®, TURKSIDING®**
Chemical Name	**:** Mixture
CAS NO	**:** None Assigned
Common Name	**:** Fibercement Sheet/Siding, Calcium Silicate Board, Fiber reinforced Cement Board
Product use	**:** Cladding materials for interior and exterior facades or underlayment.

MANUFACTURER INFORMATION :

HEKİM YAPI ENDUSTRISI SANAYI VE TICARET A.S.
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2. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name: Calcium silicate (hydrate) (Portland cement)
Not a hazardous material for shipping purposes.
CAS NO: 65997-15-1
Percent in Product (by weight): 30-35%

Exposure Limits:	**OSHA PEL**	**ACGIH TLV-TWA**	**NIOSH REL**
	15 mg/m³*	10 mg/m³*	10 mg/m³*
	5 mg/m³**		5 mg/m³**
	*total dust		
	** respirable dust		

Chemical Name: Crystalline silica (Quartz)
Not a hazardous material for shipping purposes.
CAS NO: 14808-60-7
Percent in Product (by weight): 45-55%

Exposure Limits:	**OSHA PEL**	**ACGIH TLV-TWA**	**NIOSH REL**
	10 mg/ m³	0.05 mg/m³	0.05 mg/ m³
	%SiO_2+2	(respirable)	(respirable)
	(respirable dust containing silica)		

NOTE: State-run OSHA programs may use 0.1 mg/m³ (respirable dust containing silica) for the state-specific OSHA PEL.

Chemical Name: Unbleached cellulose fiber
Not a hazardous material for shipping purposes.
CAS NO: 9004-34-6
Percent in Product (by weight): 5-15%

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Exposure Limits:	OSHA PEL	ACGIH TLV-TWA	NIOSH REL
	15 mg/ m³*	10 mg/m³*	10 mg/m³*
	5 mg/ m³**		5 mg/m³**
	*total dust		
	** respirable dust		

ADDITIONAL INFORMATION ON INGREDIENTS

This product does not contain any form of asbestos.

3. HAZARDS IDENTIFICATION

Emergency Information: Not explosive, not a fire hazard

	Health	Flammability	Reactivity
NFPA Rating:	2*	0	0
HMIS Rating:	2*	0	0

Degree of Hazard
0 - Minimal (Insignificant)
1 - Slight (Minor)
2 - Moderate
3 - Serious (High)
4 - Severe (Extreme)

*Denotes chronic hazard
(see section 16 for acronym definitions)

POTENTIAL HEALTH EFFECTS AND SYMPTOM OF EXPOSURE

Primary Routes of Entry:
INHALATION

Acute Inhalation: Dust may cause temporary irritation of the nose, throat, and airways, resulting in coughing and/or sneezing. Certain susceptible individuals (asthmatics) may experience wheezing (spasms of the bronchial airways) after inhalation of dust during sanding or sawing operations. Actual lung injury from acute exposure is rare but possible. Symptoms of acute silicosis are similar to chronic silicosis (below) but may also include weight loss and fever.
Acute silicosis - a sub-chronic disease associated with acute, massive silica exposure, is a rapidly progressive, incurable lung disease that is typically fatal. Symptoms include, but are not limited to, shortness of breath, cough, fever, weight loss and chest pain. Such exposure may cause pneumoconiosis and pulmonary fibrosis.
Chronic Inhalation: Repeated or prolonged overexposures to dust containing crystalline silica may cause silicosis and increases the risk of bronchitis, tuberculosis, lung cancer, renal disease and scleroderma. Cigarette smoking is likely to increase the risk of silicosis, bronchitis, and lung cancer in individuals also chronically exposed to crystalline silica. If chronic silicosis is present, individual may experience shortness of breath, wheezing, cough, and sputum production. Symptoms of scleroderma include thickening and stiffness of skin, particularly in the fingers, shortness of breath, difficulty swallowing and joint problems.
Regarding cellulose fiber, based on limited animal research, it is possible that repeated instillation (injection into the lung tissue) of cellulose fiber over time might lead to scarring and inflammation of lung tissue. Mechanical alteration of the cellulose fiber occurs when the product is machined. Therefore, **HEKIM YAPI** products have a low potential to release fibers with critical fibrous dimensions. Precautions taken for crystalline silica will provide sufficient protection against any risk associated with cellulose or cellulose fibers.
Acute & Chronic Skin Contact: Dust can act as a mechanical irritant
Acute & Chronic Eye Contact: Dust may irritate the eyes from mechanical abrasion causing watering and redness.
Ingestion: Very unlikely under normal conditions of use. If ingestion of dust did occur, irritation of mouth and gastrointestinal tract is likely due to alkalinity of dust.
Medical conditions generally aggravated by exposure: Pulmonary function may be reduced by inhalation of respirable crystalline silica and/or cellulose. If lung scarring occurs, such scarring could aggravate other lung conditions such as asthma, emphysema, pneumonia or restrictive lung diseases. Lung scarring from crystalline silica may also increase risks to pulmonary tuberculosis.

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Smoking:
Some studies suggest that cigarette smoking increases the risk of occupational respiratory diseases, including silica-related respiratory diseases.

Carcinogenicity:

NTP : Crystalline silica is classified as a human carcinogen, Group K.
IARC : Crystalline silica studies provide sufficient evidence of carcinogenicity in animals and strong evidence in humans, GROUP 1.
OSHA : OSHA does not classify crystalline silica as a carcinogen.
ACGIH : Crystalline silica is a suspected human carcinogen, A3.

Mutagenicity: Dust from this product is not expected to be mutagenic.
Teratogenicity: Dust from this product is not expected to be teratogenic.
Reproductive Toxicity: Dust from this product is not expected to cause any reproductive toxicity.
Toxicological Synergistic Products: None known.
Other Potential Health Risks: Cellulose dust may aggravate pre-existing respiratory conditions or allergies.

4. FIRST AID MEASURES

Under normal conditions of use, this product is not expected to create any unusual emergency hazards.
Signs and symptoms of over exposure: Breathlessness, wheezing, cough, sputum production
Inhalation: Remove individual to fresh air. If shortness of breath or wheezing develops, seek medical attention.
Skin Contact: Wash with mild soap and water. Contact physician if irritation persists or develops later.
Eye Contact: Flush with running water or saline for at least 15 minutes. Do not rub or scratch your eyes. Seek medical attention if redness persists or if visual changes occur.
Ingestion: This product is not intended or reasonably anticipated to be ingested.
Swallowed: If swallowed, dilute by drinking large amounts of water. Do not induce vomiting. Seek medical attention. If unconscious, loosen tight clothing and lay the person on his/her left side. Give nothing by mouth to an individual who is not alert and conscious.

5. FIRE FIGHTING MEASURES

Fibercement products will not burn (A1 class material according to EN13501-1).
Fire and Explosion Hazard:
1. Flash Point: N/A
2. Auto-ignition: N/A
3. Non-flammable and non-explosive

Extinguishing Media: This material is not combustible. Appropriate extinguishing media (carbon dioxide, foam, water, or dry chemical) for surrounding fire should be used.
Fire Fighting: Fire fighting personnel should wear normal protective equipment and positive selfcontained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

No special precautions are necessary to pick up product that has been dropped. The following applies to spills or releases of dust generated during cutting or sanding of the material.
Spills: Collect material and dispose of in an approved non-hazardous waste landfill.
Accidental Releases: Good housekeeping and engineering controls such as local exhaust ventilation, dust suppression with water and containment, enclosure or covers should be utilized either eliminate or minimize airborne dust created from the machining of fiber cement boards. Respirable dust and silica levels should be monitored regularly.

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Cleaning: A fine water spray should be used to suppress dust when sweeping (dry sweeping should not be attempted). Vacuuming with an industrial vacuum cleaner outfitted with a high-efficiency particulate filter is preferred to sweeping. Waste may be disposed of by landfill in compliance with federal, state and local requirements.
Personal Protective Equipment: Wear protective eye wear and respirators during dust clean-up as required to maintain exposure below applicable exposure limits.

7. HANDLING AND STORAGE

The fiber cement boards in their intact state do not present a health hazard. There are no special requirements for storage and transport of this product. The controls below apply to dust generated from the boards by cutting, drilling, routing, sawing, crushing, or otherwise abrading, and cleaning or moving sawdust. Respirable rystalline silica levels should not exceed those specified by OSHA and MSHA and identified in this MSDS. Exposure to respirable (fine) silica dust depends on a variety of factors, including ctivity rate (e.g. cutting rate), method of handling (e.g. electric shears), environmental conditions e.g. weather conditions, workstation orientation) and control measures used. herever possible, practices likely to generate dust should be carried out in well ventilated areas e.g. outside). The work practices and engineering controls set out in Section 8 should be followed to reduce silica exposures. Keep away from reactive products. Do not store near food, beverages or smoking materials. void spilling and creating dust. Maintain appropriate dust controls during handling. Use appropriate respiratory protection during handling.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Work Practices and Engineering Controls: Keep exposure to dust generated from cutting, drilling, routing, sawing or crushing, as low as possible. Whenever possible, perform machining of boards in a well-ventilated area (outside). Whenever possible, use wet saws or saw blades designed for fiber cement. The “score and snap” method or the use of pneumatic/electric shears are work practices which minimize dust exposure.

		TLV mg/m3	**PEL Mppcf**	**PEL mg/m3**
Crystalline Silica	(Quartz) (respirable)	0.025 mg/ m3	250 %SiO2+5	10mg/m3 %SiO2+2
Quartz	(Total Dust)			30mg/m3 %SiO2+2
Calcium Silicate	(Total Dust) (Respirable)			15 mg/m3 5 mg/m3
Nuisance Dust	(Total Dust) (Respirable)	10 mg/m3 (inhalable) 3 mg/m3	50 15	15 mg/m3 5 mg/ m3
Cellulose	(Total) (Respirable)			15 mg/m3 5 mg/m3

Other Limits Recommended: The National Institute of Occupational Safety and Health also has a Recommended Exposure Limit (REL) of 0.05 mg/m3 for respirable crystalline silica, based on a 10-hour time-weighted average.
Products may be coated. If coated, the coating will be water based acrylic paint or acrylic sealer.
PERSONAL PROTECTIVE EQUIPMENT
When cutting, drilling, routing or sanding the product, suitable personal protective equipment must be worn.
Respirators: NIOSH-approved disposable respirator (dust mask) or air-purifying cartridge respirator fitted with N (non-oil) series filters.

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Eye Protection: ANSI-approved safety glasses with side shields.
Skin: Loose comfortable clothing should be worn. Direct skin contact with dust and debris should be avoided by wearing long sleeved shirts and long trousers, a cap or hat, and gloves. Work clothes should be washed regularly.
Hearing Protection: Earplugs or earmuffs are recommended to protect against peak noise or cumulative noise (when frequent cutting is performed during an eight-hour day).

Engineering Controls

Cutting Outdoors
1. Position cutting station so that wind will blow dust away from user or others in working area and allow for ample dust dissipation.
2. Use one of the following methods based on the required cutting rate and jobsite conditions:

Best
- Score and snap using carbide-tipped scoring knife or utility knife
- Fiber Cement Shears (electric or pneumatic)

Better
- Dust reducing circular saw equipped with carbide segmented saw blade and HEPA vacuum extraction

Good *(for low to moderate cutting only)*
- Dust reducing circular saw equipped with carbide segmented saw blade

Cutting Indoors
- Cut only using score and snap method or with fibercement Shears (manual, electric or pneumatic).
- Position cutting station in well-ventilated area to allow for dust dissipation

Sanding/Rebating/Drilling/Other Machining
If sanding, rebating, drilling, or other machining is necessary, you should always wear a NIOSH-approved dust mask or respirator and warn others in the immediate area.

Clean-Up
During clean-up, dust and debris, DO NOT dry sweep as it may excite silica dust particles into the user's breathing area. Instead, wet debris down with a fine mist to suppress dust during sweeping, or use a HEPA vacuum to collect particles.

Important Notes:
1. For maximum protection (lowest respirable dust production) use "Best" cutting methods where feasible and applicable,
2. DO NOT use high speed electric saw indoors.
3. DO NOT use circular saw blades that are not recommended by **HEKIM YAPI**.
4. DO NOT dry sweep – use wet suppression methods or vacuum.
5. DO NOT use a grinder or continuous rim diamond blade for cutting.
6. ALWAYS follow tool manufacturer's safety recommendations and refer to "Application Manuel" prepared by **HEKIM YAPI**.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Solid gray boards with varying dimensions according to product specifications. Some may be coated with an acrylic primer.

Physical State	**:** Solid	**pH**	**:** N/A
Boiling Point (°F)	**:** N/A	**Vapor Density (Air=1)**	**:** N/A
Melting Point (°F)	**:** N/A	**Specific Gravity (H_2O=1)**	**:** N/A
Softening Point (°F)	**:** N/A	**Evaporative Rate (ethyl ether=1)**	**:** N/A
Freezing Point (°F)	**:** N/A	**Vapor Pressure (mmHg@20°C)**	**:** N/A
Odor	**:** none	**% Volatile by Volume**	**:** N/A
% Solubility in Water	**:** N/A	**Autoignition Temp**	: N/A
Flammability Limits	: N/A	**Personal Protection Scale**	: E

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10. STABILITY AND REACTIVITY

Stability : Stable under ordinary conditions
Conditions to Avoid : Excessive dust generation during storage and handling.
Corrosivity : Non-corrosive
Incompatibility : Hydrofluoric acid will dissolve silica and can generate silicon tetrafluoride, a corrosive gas. Contact with strong oxidizing agents such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride or oxygen difluoride may cause fires and/or explosions. Furthermore, portland cement is incompatible with lime dissolving acids and ammonium salts due to its free lime content.
Reactivity : Inert
Reactivity with water : Non-reactive.
Hazardous Decomposition Products : None expected.

11. TOXICOLOGICAL INFORMATION

This product has not been tested as a separate entity. Therefore, the hazards must be evaluated on the basis of individual components, and those hazards that affect the same organ system must be considered additive in the absence of complete information. The hazards described in this document have been evaluated from a threshold of 1.0% by weight for all hazardous ingredients and 0.1% for all carcinogenic ingredients. See Section 2 for human health hazards and symptoms of exposure.

12. ECOLOGICAL INFORMATION

This product has not been tested but is not expected to harm ecosystems through its applied use. The material is not biodegradable.

13. WASTE DISPOSAL CONSIDERATIONS

Waste fiber cement boards, cut-offs, and dust may be disposed of in a non-hazardous waste landfill in compliance with federal, state, and local requirements. RCRA, Subpart C, 40 CFR 261 does not classify fiber cement sheets or boards as a hazardous waste.

14. TRANSPORTATION INFORMATION

For domestic transportation purposes, this product is not regulated as a hazardous material by the U.S. Department of Transportation under Title 49 of the Code of Federal Regulations.
There are no special requirements for storage and transport.
Dangerous Goods Class : None Allocated
Hazchem Code : None Allocated
Poisons Schedule : None Allocated
Packing Group : Not Applicable
Label : Not a DOT hazardous material. Local regulations may apply

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15. REGULATORY INFORMATION

(PART A)
US Chemical Inventory Status:

SARA 302/303 (Extremely Hazardous Substance) – **No**
SARA 311/312 (40 CFR Part 370 – Hazardous Chemical Reporting: Community Right-To-Know):
Acute: **Yes**. Chronic: **Yes**. Fire: **No**. Pressure: **No**. Reactivity: **No**.
SARA 313 (40 CFR Part 372 – Toxic chemical Release Reporting: Community Right-To-Know) –
Not a RCRA Hazardous Waste.
TSCA – **All components are on the TSCA Inventory**
TSCA 8(d) – **No**
CERCLA Hazardous Substance (40 CFR Part 302):
Listed Substance : **No**.
Unlisted Substance : **No**.
Reportable Quantity (RQ) : **None**.
Characteristic(s) : **N/A**
RCRA Waste Number : **N/A**
California Proposition 65 – Airborne particles of respirable size of crystalline silica are known to the state of California to cause cancer.

(PART B)
Workplace Hazardous Materials Information System (WHMIS):
Fiber cement is a Class D2A material – due to the potential chronic and acute effects of crystalline silica.
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations, and the MSDS contains all the information required by the Controlled Products Regulations.

16. ADDITIONAL COMMENTS

Other information

WARNING: Fibercement products produced by **HEKIM YAPI** contain crystalline silica. Inhalation of crystalline silica can cause silicosis, a potentially disabling lung disease, which can elevate the risk of other diseases. When drilling, cutting, sawing, or sanding the product, use best work practices to reduce airborne dust concentrations. Work outdoors where feasible or use mechanical ventilation when possible. Use wet saws or diamond-tipped circular saws with dust collection for cutting. Use pneumatic or electric hand shears for fine cutting or shaping. Use carbide score and snap knives. Do not use compressed air for cleaning dust. When operating power tools to cut, saw, drill, or sand this product, wear safety glasses and a NIOSH-approved disposable dust mask or respirator equipped with N, P, or R cartridge and follow the manufacturer's instructions for use and care of the respirator. For further information, consult the MSDS or your employer. Reasonable care has been taken in the preparation of this information, but HEKIM YAPI makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. HEKIM YAPI cannot control the use of its products makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from misuse and alteration of its products.

The information contained on this MSDS was produced without independent scientific or medical studies analyzing the effects of silica upon human health. The information contained herein is based upon scientific and other data **HEKIM YAPI** believes is valid and reliable and provides the basis for this MSDS. The information contained herein relates only to specific materials listed in the document. It does not address the effects of silica when used in combination with other materials or substances, or when used in other processes. Because conditions of use are not under entire control **of HEKIM YAPI**, the company makes no representations, guarantees or warranties, either express or implied warranties as to the fitness of the product for use, and assume no liability related to the information contained above.

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Acronyms/definitions used in this MSDS:

ACGIH	American Conference of Governmental Industrial Hygienists;
ANSI	American National Standards Institute;
CAS No	Chemical Abstracts Services Number;
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act;
CFR	Code of Federal Regulations;
HMIS	Hazardous Material Identification System;
IARC	International Agency for Research on Cancer;
NFPA	National Fire Protection Association;
NIOSH	National Institute for Occupational Safety and Health;
NTP	National Toxicology Program;
OSHA	Occupational Safety and Health Administration;
ppm	Parts per million;
PEL	Permissible Exposure Limit (8 hour time weighted average);
PNOC	Particulates Not Otherwise Classified;
REL	Recommended Exposure Limit;
RCRA	Resource Conservation and Recovery Act;
SARA	Superfund Amendments and Reauthorization Act;
TDG	Transportation of Dangerous Goods (Canada);
TLV	Threshold Limit Value (8 hour time weighted average);
TWA	Time Weighted Average;
TSCA	Toxic Substance Control Act
UFL	Upper Flammable Limit.
WHMIS	Workplace Hazardous Material Identification System;