MATERIAL SAFETY DATA SHEET

PRODUCT : **SILIN HT**- Vacuum Formed Insulating Refractory Shapes
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1 Identification:

Product
Vacuum formed shapes containing Alkaline –earth silicate wools, amorphous silica, and refractory fillers

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2 Information on ingredients:

	CAS-No.	Contents	Classification	R phrases
Amorphous magnesium silicate (alkaline-earth-silicate) fibre	436 083 99 7	20-50%	None	None
Biogenic amorphous Silica	7631 86 9	10-30%	N.A.	N.A.
Starch	(EINECS 232-679-6)	0-10%	N.A.	N.A.
Inert refractory fillers	N.A.	10-50%	N.A.	N.A.

3 Hazards identification:

Mild mechanical irritation to skin, eyes and upper respiratory system may result from exposure.
These effects are usually temporary
Pre-existing skin and respiratory conditions including dermatitis, asthma and chronic lung disease might be aggravated by exposure.

4 First-aid measures:

SKIN
In case of skin irritation rinse affected areas with water and wash gently. Do not rub or scratch exposed skin.
EYES
In case of eye contact flush abundantly with water; have eye bath available. Do not rub eyes.
NOSE AND THROAT:
If these become irritated move to a dust free area, drink water and blow nose.
If symptoms persist, seek medical advice.

5 Fire-fighting measures:

Non combustible products. Packaging and surrounding materials may be combustible.
Use extinguishing agent suitable for surrounding combustible materials.

6 Accidental release measures:

No special measures required.

7 Handling and storage:

Handling:

Keep work areas clean. Dispose of scrap material and debris in suitable containers.
Spray with water before sweeping or use vacuum equipment.
Ensure good ventilation. Local exhaust ventilation may be required if the method of use produces dust levels that exceed the maximum exposure limit

Storage:

- Keep material in original packaging until it is to be used.
- Store material in dry conditions.

8 Exposure controls/personal protection.

Examples of exposure limits in January 2008 are given below:

France	1.0 f/ml	Circulaire DRT no 95-4 du 12/01/95
United Kingdom	2.0 f/ml	HSE EH40 Workplace Exposure Limit

8-hr time weighted average concentrations of airborne respirable fibres measured using the conventional membrane filter method

Normal use of these articles should not create significant dust concentrations. However if the articles are sawn or abraded, and when they are removed after use, appreciable levels of dudt may be liberated.

Respiratory protection

With heavy dust development and in confined spaces, use disposable facemasks complying with EN149 FFP1 or FFP2 [e. g. 3M model 8710 or any similar NIOSH approved dust mask]

Hand protection
Wear suitable gloves.

Eye protection
With heavy dust development, wear safety goggles.

Skin protection
Wear loose fitting, long-sleeved work clothes.
Wash overalls separately from other clothing.

9 Physical and chemical properties:

Physical State	Solid	Melting point	>1600°C
Flammability	None	Length weighted geometric mean diameter	NA
Appearance	Dak grey	Explosive properties	None
Oxidising properties	None	Odour	None

10 Stability and reactivity:

Stability: Stable

Reactivity Not reactive

When first heated above 200°C, the starch binder will start to decompose and oxidise. The decomposition products are mainly carbon dioxide, carbon monoxide, carbon particles, water, and trace gases (e.g. nitrogen dioxide, sulphur dioxide)

As with any refractory material which contains silica, product which has been in continuous use at elevated temperatures (greater than 900 C) may devitrify with possible formation of crystalline phases

However, in most foundry applications the time for which the material is exposed to high temperatures is far too short for significant amounts of crystalline silica to be formed. In applications where high temperatures >900°C may be experienced for longer periods e.g. 1 hour +, it is advisable to check for the formation of crystalline phases.

11 Toxicological information:

Irritant Properties

When tested using approved methods (Directive 67/548/EC, Annex V, Method B4), fibres contained in this material give negative results. All man made mineral fibres, like some natural fibres, can produce a mild irritation resulting in itching or rarely, in some sensitive individuals, in slight reddening. Unlike other irritant reactions this is not the result of allergy or chemical skin damage but is caused by a temporary mechanical effect.

Other Animal Studies

These materials have been designed to allow rapid clearance from tissue. And this low biopersistence has been confirmed in many studies using EU protocol ECB/TM/27(rev 7) and the German method specified in TRGS 905 (1999). When inhaled, even at very high doses, they do not accumulate to any level capable of producing a serious adverse biological effect. In lifetime chronic studies there was no exposure-related effect more than would be seen with any “inert” dust. Subchronic studies at the highest doses achievable produced, at worst, a transient mild inflammatory response. Fibres with the same ability to persist in tissue do not produce tumours when injected into the peritoneal cavity of rats.

12 Ecological information:

These products are inert materials which remain stable. No adverse effects of this material on the environment are anticipated.

13 Disposal consideration:

Waste from these products may generally be disposed of at a non hazardous landfill, which has been licensed for this purpose.

14 Transport information:

Not classified as dangerous goods under relevant international transport regulations (ADR, RID, IATA, IMDG Refer Section 16 “Definitions”).

15 Regulatory information:

Fibre type definition according to Directive 67/548/EEC

Regulatory status in the EU, comes from European Directive 67/548/EEC, on the classification, labelling and packaging of dangerous substances and preparations as modified by Directive 97/69/EEC and its implementations by the Member States.

According to Directive 67/548/EEC, the fibre contained in this product is a mineral wool belonging to the group of "man made vitreous(silicate) fibres with random orientation with alkaline oxide and alkali earth oxide (Na2O +K2O+CaO+MgO+BaO) content greater than 18% by weight".

Under Directive 67/548/EEC all types of man made vitreous(silicate) fibres are classified as "irritant " despite the fact that testing by the appropriate EU method (B4 in annex 5 of Directive 67/548/EEC) is providing no response and would not result in irritant classification.
Under criteria listed in nota Q of Directive 67/548/EEC, AES wools are exonerated from carcinogen classification because of low pulmonary biopersistence measured by the methods specified in European Union and German regulations (EU protocol ECB/TM/27(rev 7) and German method as specified in TRGS 905 (1999)).

16 Other information:

Biogenic Silica

The biogenic silica used in these products is derived from a plant source. It is produced by the controlled incineration of silica containing waste organic matter. It contains a high proportion (>90%) of microporous amorphous silica, which is very refractory and highly insulating.

USEFUL REFERENCES (the directives which are cited must be considered in their amended version)

Council Directive 89/391/EEC dated 12 June 1989 "on the introduction of measures to encourage improvements in the safety and health of workers at work" *(OJEC L 183 of 29 June 1989,p.1)*

Council Directive 67/548/EEC on the "approximation of the laws, regulations and administrative provision relating to the classification, packaging and labelling of dangerous substances as modified and adapted to the technical progress" *(OJEC L 196 of 16 August 1967,p.1 and its modifications and adaptations to technical progress)*.

Commission Directive 97/69/EC of 5 December 1997 "adapting to technical progress for the 23rd time Council Directive 67/548/EEC ,(OJEC L 343 *Official Journal of the European Communities, 13/12/97 , p.19).*

Council Directive 98/24/EC of 7th April 1998 "on the protection of the health and safety of workers from risks related to chemical agents at work" (OJEC L131 of 5th May 1998, P.11)

TRGS 521 : Faserstaube 5/2002 - Germany

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