



MATERIAL SAFETY DATA SHEET (EUROPEAN)

MSDS Number: 04/3

According to (EC) No 1907/2006 and (EC) No 1272/2008

Date of Issue: March 2000

Date of Last Revision: August 2011

SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Material/Product Name(s): Supermag* Body Soluble Boards and Special Shapes.
Chemical family: This product contains alkaline earth silicate fiber.
Index Number: 650-016-00-2 Annex VI
CAS Number: 436083-99-7
Registration Number: 01-2119457644-32-0003
General use: Application as thermal insulation, heat containment, heat shields, gaskets and expansion joints in industrial ovens, furnaces, kilns, boilers and other process equipment and in the aerospace, automotive and appliance industries, and as passive fire protection systems and firestops. At temperature up to 1200°C.

Manufacturer/Supplier: Nutec Europe, S.A. de C.V.
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Language: English
Opening hours: Only available during office hours

SECTION 2. HAZARDS IDENTIFICATION

CLASSIFICATION OF THE SUBSTANCE/MIXTURE

Not applicable

LABELLING ELEMENTS

Not applicable

OTHER HAZARDS WHICH DO NOT RESULT IN CLASSIFICATION

Mild mechanical irritation to skin, eyes and upper respiratory system may result from exposure. These effects are usually temporary.

CHRONIC RESPIRATORY HEALTH EFFECTS

These products may sometimes contain minimal amount of crystalline silica. Prolonged/Repeated inhalation of respirable crystalline silica dust may cause delayed lung injury (silicosis). IARC (International Agency for Research on Cancer) states that there is "sufficient evidence in humans for the carcinogenicity of inhaled crystalline silica in the form of quartz or cristobalite from occupational sources to classify crystalline silica as carcinogenic to humans (group 1)" (Monograph 68). In making the overall evaluation the working good noted however that carcinogenicity in humans was not detected in all industrial circumstances studied.

SECTION 3. COMPOSITION

Description: Supermag boards are made of AES wool bound with organic and inorganic materials.

Material or Component	%	CAS No.	Index Number	REACH Registration Number
Alkaline-earth silicate wools	30-90	436083-99-7*	650-016-00-2	01-2119457644-32-0003
Silica, Colloidal	5-60	7631-86-9	Not applicable	Not yet available
Starch	2-10	EINECS N° 232-679-6	Not applicable	Not yet available

* CAS definition: Alkaline earth silicate (AES) consisting of silica (50-82 wt%), calcia and magnesia (18-43 wt%), alumina, titania and zirconia (less than 6 wt%), and trace oxides.

None of the components are radioactive under the terms of European Directive Euratom 96/29.

SECTION 4. FIRST AID MEASURES

Skin contact: Handling of this material may generate mild mechanical temporary skin irritation. If this occurs, rinse affected areas with water and wash gently. Do not rub or scratch exposed skin.

Eyes contact: In case of eye contact flush abundantly with water; have eye bath available. Do not rub eyes.

Nose and Throat contact: If these become irritated move to a dust free area, drink water and blow nose.

If symptoms persist, seek medical advice.

SECTION 5. FIRE FIGHTING MEASURES

By its nature Supermag* boards is a non combustible product. However, virgin product binder may burn and produce gases and/or fumes. Packaging and surrounding materials may be combustible. Use extinguishing agents prescribed for fire fighting such combustible packaging. Wear self-contained breathing apparatus when entering smoke filled areas.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Where abnormally high dust concentrations occur, provide the workers with appropriate protective equipment as detailed in section 8. Restore the situation to normal as quickly as possible. Prevent further dust dispersion for example by damping the materials. Pick up large pieces and use a vacuum cleaner fitted with high efficiency filter (HEPA). If brushing is used, ensure that the area is wetted down first.

Do not use compressed air for clean up. Do not allow being wind blown. Do no flush spillage to drain and prevent from entering natural water courses.

Refer to section 13 for disposal.

SECTION 7. HANDLING AND STORAGE

HANDLING/TECHNIQUES TO REDUCE DUST EMISSIONS DURING HANDLING

Handling can be a source of dust emission. The process or processes should be designed to limit the amount of handling. Wherever possible, handling should be carried out under ventilation with filtered exhaust. Regular good housekeeping will minimise secondary dust dispersal.

STORAGE

Store in original packaging in a dry area. Always use sealed and clearly labelled containers. Avoid damaging containers. Reduce dust emission during unpacking.

SPECIFIC USE

Please refer to your local Nutec Fibrattec supplier.

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Hygiene standards and exposure limits: Hygiene standards and exposure limits will differ from country to country. You should check those applicable to your country and comply with the regulations. If not regulatory dust or other standards apply, a qualified industrial hygienist can assist with specific work place evaluation including recommendations for respiratory protection.

Examples of exposure limits in January 2003 are given below:

COUNTRY	EXPOSURE LIMIT *					SOURCE
	Mineral wool (1)	Respirable dust (2)	Crystalline Silica (2)	Quartz (2)	Cristobalite (2)	
Germany		3mg/m ³				TRGS 900
France	1 f/ml	5mg/m ³		0.1mg/m ³	0.05mg/m ³	Decret 97-331 du 10 avril 1997
U.K.	2 f/ml and 5mg/m ³	4mg/m ³	0.3mg/m ³			HSE – EH40

- (1) The exposure limit is a time weighted average numerical concentration of airborne respirable fibers measured over 8 hrs by the conventional membrane filter method or gravimetric concentrations of inhalable dust.
- (2) Gravimetric concentrations of respirable dust.

Engineering controls: You should regularly review your applications and working practices in order to identify potential sources of dust exposure. Check local regulations applying to hygiene standards and exposure limits in your country. Always try to operate well within those limits. Introduce personal dust monitoring and record the results. Use technical and/or organizational means to comply with regulations. Technologies to control respirable dust such as local exhaust ventilation, point of generation dust collection, downdraft workstations, emission controlling tool designs and materials handling equipment are generally effective for minimizing exposures to respirable dust.

Keep the workplace clean. Use a vacuum cleaner fitted with a HEPA filter; avoid brushing and compressed air.

Personal Protective Equipment:

Skin Protection: Wear gloves and loose fitting overalls at the neck and wrists. Clean cloths to remove excesses fibers before being taken off (use vacuum cleaning, not compressed air).

Eye Protection: Wear goggles or safety glasses with side shields to prevent eye contact.

Respiratory Protection: For dust concentrations below the exposure limit value, RPE is not required but FFP2 respirators may be use on a voluntary basis. For short term operations were excursions are less than 10 times the limit value use FFP2 respirators. In case of higher concentration or where the concentration is not known, please seek advice for your company and/or your supplier.

Information and training of workers: It is vital that all workers are advised of the health and safety aspects of materials they are using. Doing so safe guards their health and also corrects any misconceptions they may have about materials and their dangers, and informed on applicable local regulations.

Environmental exposure controls: Refer to local, national or European applicable environmental permitted standards for air, water and soil.

For waste, refer to section 13.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Beige to light brown

Odour: None

Boiling point: N.A.

Melting point: >1200 °C

Flash point: N.A.

Flammability: N.A.

Auto inflammability: N.A.

Explosive properties: N.A.

Oxidizing properties: N.A.

Vapour pressure: N.A.

Solubility: Less than 1 mg/l

Partition coefficient: N.A.

Length weighted geometric mean diameter of fiber: < 3.0µm

SECTION 10. STABILITY AND REACTIVITY

Conditions and materials to avoid: None

Decomposition products: As with much silica bearing refractories continuous use at above 900°C may lead to the formation of several crystalline phases. If crystalline silica is present you should follow corresponding hygiene regulations and standards applicable to you country.

Fumes: During first heating, oxidation products from the organic binder might be emitted in a temperature range from 180-600°C. It is recommended to ventilate the room until gases and fumes have disappeared. Avoid exposure to high concentrations of gas or fumes.

SECTION 11. TOXICOLOGICAL INFORMATION

Irritant properties: Under directive 67/548/EEC annex 5, method B4, fibers referred to as Supermag* gave negative results. Supermag* along with many other man made mineral fibers can cause temporary mild irritation. This can result in itching and in rare cases and in sensitive persons a rash. This is not a result of a chemical allergy but is caused by minor skin damage caused by the mechanical strength of the fibers.

Other animal studies: Fibers containing in Supermag* have been designed to be rapidly cleared from lung tissue. This low bio persistence 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 live time chronic studies there was no exposure related effect more than would be seen with any inert dust. Sub chronic studies at the



highest does achievable produced at worst a transient mild inflammatory response. Fibers with the same ability to persist in tissue do not produce tumors when injected into the peritoneal cavity of rats.

Toxicological information on mineral wool:

Respiratory toxicity for mineral wools: Epidemiological studies did not show any health effects related to fibres among mineral wool manufacturing workers. The excess of lung cancers reported in 1982 have been the subject of additional investigations and examination or the confounding factors showed that the excess were not attributed to fibres. Smoking has been identified as the most important of these confounding factors.

Experimental Studies for Mineral Wools: Animal inhalation studies on mineral wools did show neither pulmonary fibrosis nor lung cancer nor mesotheliomas. Intratracheal and intraperitoneal injection studies did not show any disease except those involving selected fine glass fibres for especial uses or experimental rock wools.

Toxicological Information on Crystalline Silica:

Chronic Toxicity. As manufactured, these products may contain a minimal amount of crystalline silica.

Experimental Study: Animal exposed to very high concentrations of crystalline silica, artificially or by inhalation, have reported fibrosis and tumors (IARC monographs 42 and 68). Inhalation and Intratracheal installation of crystalline silica in rats caused lung cancer. However, studies in other species such as mice and hamsters caused no lung cancer. Crystalline silica also caused fibrosis in rats and hamsters in several inhalation and intratracheal installation studies.

Epidemiology: Prolonged inhalation of respirable crystalline silica dust may cause delayed lung injury (silicosis). In evaluating crystalline silica as a cancer risk, the international agency of research on cancer (IARC) reviewed several studies from different industries and concluded that crystalline silica from occupational sources inhaled in the form of quartz or cristobalite is carcinogenic to humans (group 1) (IARC Monograph; Vol. 68; June 1997). However, in reaching its conclusion, IARC stated that carcinogenicity in humans could not be found in all industries reviewed and that carcinogenicity might be dependent on inherent characteristics of crystalline silica or on external factors affecting biological activity or distribution of its polymorphs.

SECTION 12. ECOLOGICAL INFORMATION

These products are inert materials, which remain stable over the time.
No data available on any adverse ecological effects from this material.

SECTION 13. DISPOSAL INFORMATION

Waste from these materials may be generally disposed off at a landfill, which has been licensed for this purpose. Please refer to the European list (Decision N° 2000/532/CE as modified) to identify your appropriate waste number, and insure national and/or regional regulations are complied with.

Taking into account any possible contamination during use, expert guidance should be sought.

Unless wetted, such a waste is normally dusty and so should be properly sealed in containers for disposal. At some authorised disposal sites, dusty waste may be treated differently in order to ensure they are dealt with promptly to avoid them being windblown. Check for any national and/or regional regulations, which may apply.

SECTION 14. TRANSPORT INFORMATION

You should ensure that fibres are not able to be blown around during transport of new product or the disposal of used material. Not classified as dangerous goods under relevant international transport regulations (ADR, RID, IATA, IMDG).

SECTION 15. REGULATORY INFORMATION

1. FIBRE DEFINITION ACCORDING TO DIRECTIVE 67/548/EEC:

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

Under criteria listed in note Q of Directive 67/548/EEC, Fibers container in Supermag are exonerated from carcinogen classification because of low pulmonary bio persistence 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)).

31st Adaptation to Technical Progress of Directive 67/548/EEC of 15 January 2009 has removed skin irritancy classification for man-made vitreous (silicate) wools.

2. FIBRE TYPE DEFINITION ACCORDING TO REGULATION (EC) No 1272/2008 AMENDING AND REPEALING DIRECTIVES 67/548/EEC AND 1999/45/EC, AND AMENDING REGULATION (EC) No 1907/2006.

This regulation aims at incorporating the GHS criteria into the EU Community law.

Under 1.1.3.1. (Nota Q) of Annex VI of regulation (EC) 1272/2008 the classification as a carcinogen 2 needs not apply on the basis of short term biopersistence test by intratracheal installation showing a half life of less than 40 days for fibres longer than 20 µm.

1st Adaptation of Technical Progress of regulation (EC) N°1272/2008 of 10 August 2009 has removed skin irritancy classification for man-made vitreous (silicate) wools.

Fibres contained in this product are therefore free of any classification and do not require labelling under CLP regulation.

Protection of Workers

Shall be in accordance with several European Directives as amended and their implementations by the Member States:

- a) 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 (Official Journal of the European Community) L 183 of 29 June 1989, p.1).
- b) Council Directive 98/24/EC dated 7 April 1998 “on the protection of workers from the risks related to chemical agents at work” (OJEC L 131 of 5 May 1998, p.11).

OTHER POSSIBLE REGULATIONS

Member States are in charge of implementing European Directives into their own national regulation within a period of time normally given in the Directive. Member States may impose more stringent requirements. Please always refer to any national regulation.

SECTION 16. OTHER INFORMATION

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).
- Regulation (EC) No 1907/2006 dated 18th December 2006 on Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)
- Regulation (EC) No 1272/2008 dated 20th January 2009 on classification, labeling and packaging of substances and mixtures (OJ L 353)
- Commission Directive 97/69/EC of 5 December 1997 adapting to technical progress for the 23rd time Council Directive 67/548/EEC (OJEC of 13 December 1997, L 343).
- Council Directive 98/24/EC of 7 April 1998 “on the protection of the health and safety of workers from the risks related to chemical agents at work” (OJEC L 131 of 5 May 1998, p11).

PRECAUTIONARY MEASURES TO BE TAKEN AFTER SERVICE UPON REMOVAL

In almost all applications high temperature insulating wools products (HTIW) are used as an insulating material helping keeping up temperature at 900°C or more in a closed space. As only a thin layer of the insulation hot face side is exposed to high temperature, respirable dust generated during removal operations does not contain detectable levels of crystalline silica (CS).

In applications where the material is heat soaked, duration of heat exposure is normally short and a significant devitrification allowing CS to build up does not occur. This is the case for waste mould casting for instance.

Toxicological evaluation of the effect of the presence of CS in artificially heated HTIW material has not shown any increased toxicity in vitro and in vivo. The results from different combinations of factors like increased brittleness of fibres, or microcrystals embedded in the glass structure of the fibre and therefore not biologically available may explain the lack of toxicological effects.

IARC evaluation as provided in Monograph 68 is not relevant as CS is not biologically available in after service HTIW.

High concentrations of fibres and other dusts may be generated when after-service products are mechanically disturbed during operations such as wrecking. Therefore ECFIA recommends:

Control measures are taken to reduce dust emissions; and

All personnel directly involved wear an appropriate respirator to minimise exposure and comply with local regulatory limits.

CARE PROGRAMME (“Controlled and Reduced Exposure”)

The trade association representing the European high temperature insulation wool industry (ECFIA) has undertaken an extensive hygiene programme for High Temperature Insulation Wool (HTIW).

The objectives are twofold: (i) to monitor workplace dust concentrations at both manufacturers’ and customers’ premises, and (ii) to document manufacturing and use of HTIW products from an industrial hygiene perspective in order to establish appropriate recommendations to reduce exposures. The initial results of the programme have been published. If you wish to participate in the CARE programme, contact ECFIA or your Thermal Ceramics’ supplier.

WEBSITES:

For more information connect to:

www.nuteceurope.com

Or the ECFIA’s website: (<http://www.ecfia.org/>)

Or Deutsche KeramikFaser-Gesellschaft e.V’ website: (<http://www.dkfg.de/>)

Revision Summary

Section 1 – addition of identified uses, change of emergency contact number, addition of product identifiers

Section 2 – reformatted according to Regulation (EC) No 1907/2006

Section 3 – addition of classification according to (EC) No 1272/2008

Section 15 – reformatted according to Regulation (EC) No 1907/2006

NOTICE:

The information presented herein is based on data considered to be accurate as of the date of preparation of this Material Safety Data Sheet. However safe as provided by law, no warranty or representation, express or implied, is made as to the accuracy or completeness of the foregoing data and safety information, nor is any authorisation given or implied to practice any patented invention without a licence. In addition, no responsibility can be assumed by the vendor for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practices, or from any hazards inherent in the nature of the product (however, this shall not act to restrict the vendor’s potential liability for negligence or under statute).

Las Revision: August 2009

* This product is manufactures in Mexico by Nutec under patent license (US Patent Nos. 5332699, 5714421, 599247, 6180546, 7259118 and equivalent patent elsewhere).