



MATERIAL SAFETY DATA SHEET (EUROPE)

SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Material/Product Name(s): Nutec Fibratec Ceramic Fibre Cement 1300 and 1500.
General Uses: This product is used as a refractory surface. Although generally used on cementing modules on to blocks, mortar for refractory bricks, insulation and protection for metallic surfaces, protection against corrosion and abrasion for fibre linings, adhesive for sticking refractory paper to submerged entry nozzles (SEN) in continuous casting steel plants, for sticking ceramic paper and felt to steel ladles, for sticking blankets and boards to each other to increase thickness and our cement has added advantage of flexibility once dried.

Manufacturer/Supplier: Nutec Fibratec, S.A. de C.V.
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SECTION 2. COMPOSITION

Description: Nutec Fibratec Ceramic Fibre Cement is an air setting cement designed to be used to adhere fibre materials to themselves, to other refractory or insulating materials, and to some metals.

Substance	%	EINECS Number	SYMBOL	R PHRASES
Alumino-Silicate	50 – 70	N.A.	N.A.	N.A.
Colloidal Silica	20 – 40	231 – 545 – 4	N.A.	N.A.
Water	< 10	N.A.	N.A.	N.A.
Organic binder	< 5	N.A.	N.A.	N.A.

None of the components are radioactive under the terms of the European directive Eurotom 96/29.

SECTION 3. HAZARDS IDENTIFICATION

Irritation: Mild mechanical irritation may occur from exposure to skin, eyes and upper respiratory system may result from exposure to high dust concentration of dried product. These effects are usually temporary.

Pre – existing skin and respiratory conditions might be aggravated by exposure.

Chronic Respiratory Health Effects: These products may contain minimal amounts of crystalline silica. Prolonged/Repeated inhalation of respirable crystalline silica dust may cause delayed lung injury (Silicosis). IARC (International Agency of Research on Cancer) states that there is “sufficient evidence in humans for the



carcinogenicity of inhaled crystalline silica in the form of quarts or cristobalite for occupational sources to classify crystalline silica as carcinogenic to humans (group 1)" (Monograph V 68). In making the overall evaluation, the worker group noted however that carcinogenicity in humans was not detected in all industrial circumstances studied.

SECTION 4. FIRST AID MEASURES

Eye contact: In the case of eye contamination flush with water. Always have an eye bath within easy reach of personnel using insulation wool products and ensure that the bath is kept clean. Never rub the eye as this may cause damage. If in doubt seek medical advice.

Skin contact: In the case of skin irritation rinse affected areas with water and wash gently. Do not rub or scratch the affected area without water or this may increase the irritation.

Inhalation: Remove victim from adverse environment to fresh air and blown nose.

Ingestion: Ingestion is an unlikely route of exposure. If ingested in sufficient quantity and victim is conscious, give 1-2 glasses of water or milk. Never give anything by mouth to an unconscious person. Leave decision to induce vomiting to qualified medical personnel, since particles may be aspirated into the lungs. Seek immediate medical attention.

SECTION 5. FIRE FIGHTING MEASURES

Nutec Fibrattec Ceramic Fibre Cement 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 and surrounding materials. Wear self-contained breathing apparatus when entering smoke filled areas.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Protection: wear suitable goggles, gloves and protective clothing.

Method for clean up: contain spillage, absorb in earth or sand and shovel into suitable containers.

Environmental protection: Do not flush spillage to drain and prevent from entering natural water courses.

For wastes disposal refer to section 13.

SECTION 7. HANDLING AND STORAGE

Techniques to reduce dust emission during handling of dry product: Handling of dried product can be a source of dust emission. Wherever possible, handling should be carried out under ventilation with filtered exhaust. Technical or organizational control measures together with good house keeping practices will help to comply with exposure limits. Help with such methods is available on request.

Storage: store in original packaging in a dry area. Avoid storage below + 5°C (risk of solidification). Use of recyclable plastic drums and plastic films is recommended. Avoid damaging the packaging. . Keep container closed when not in use.

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

HYGIENE STANDARDS AND EXPOSURE LIMITS

Removing dried material after use may generate respirable dust.

Industrial hygiene standards and occupational exposure limits vary between countries and local jurisdictions. Check which exposure levels apply to your facility and comply with local regulations. If no regulatory dust or other standards apply, a qualified industrial hygienist can assist with a specific workplace evaluation including recommendations for respiratory protection.

Examples of exposure limits for respirable dust (in January 2003) are given below:

COUNTRY	EXPOSURE LIMIT*				SOURCE
	Respirable Dust	Crystalline silica	Quartz	Cristoballite	
Germany	3 mg/m ³				TRGS 900
France	5 mg/m ³		0,10 mg/m ³	0,05 mg/m ³	Decret 97-331 du 10 avril 1997
U.K.	4 mg/m ³	0,30 mg/m ³			HSE– EH40

*Gravimetric concentrations of respirable dust – 8-hour time weighted average.

ENGINEERING CONTROLS

Review your applications in order to identify potential sources of dust exposure. If necessary, conduct personal air monitoring. Use technical and/or organisational means to comply with regulations.

PERSONAL PROTECTIVE EQUIPMENT

Skin protection: Use of gloves and work clothes is recommended.

Soiled clothes should be cleaned before being taken off (e.g. use vacuum cleaning, not compressed air).

Eye protection: Wear safety glasses with side shields or wear goggles as necessary.

Respiratory protection: For dust concentrations below the exposure limit value, RPE is not required but FFP2 respirators may be used on voluntary basis.

For short-term operations where excursions are less than ten times the limit value use FFP2 respirators. In case of higher concentrations or where the concentration is not known, please seek advice from your company and/or local Nutec Fibratec's supplier.

INFORMATION AND TRAINING OF WORKERS

Workers should be trained on good practices 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	Off-White free flowing paste
MELTING POINT	>1650°C
SPECIFIC GRAVITY	1700 – 1900 kg/m ³ (wet)
ODOUR	Slight

SECTION 10. STABILITY AND REACTIVITY

Conditions and materials to avoid: None

Decomposition products: Continuous use at above 900°C for sustained periods, may lead to the formation of several crystalline phases. If crystalline silica is present you should follow corresponding hygiene regulations and standards applicable to your country.

For further information please refer to section 16.

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

SECTION 11. TOXICOLOGICAL INFORMATION

Available toxicological information is as follows:

Acute Toxicity: Lethal dose 50% (LD50) / lethal concentration 50% (LC50): N.A.

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

Experimental study: Animals exposed to very high concentrations of crystalline silica, artificially or by inhalation, have reported fibrosis and tumours (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/repeated inhalation of respirable crystalline silica dust may cause delayed injury (silicosis). In evaluating crystalline silica as cancer risk, the International Agency for 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 the 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 (e.g., cigarette smoking) or distribution of its polymorphs.

SECTION 12. ECOLOGICAL INFORMATION

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

SECTION 13. DISPOSAL INFORMATION

Waste from these materials may be generally disposal 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 regulation 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 disposed of in sealed plastic bags or containers. At some authorized disposal sites, dusty waste may be treated differently in order to ensure they are dealt with promptly to avoid them being wind blown.

Check for national and/or regional regulation which may apply.

SECTION 14. TRANSPORT INFORMATION

Not classified as dangerous goods under relevant international transport regulations (ADR, RID, IATA, IMDG).

ADR: Transport by road, Council Directive 94/55/EC.

IMDG: Regulations relating to transport by sea.

RID: Transport by rail, Council Directive 96/49/EC.

ICAO/IATA: Regulation relating to transport by air.

SECTION 15. REGULATORY INFORMATION

PROTECTION OF WORKERS:

Protection measures shall be in accordance with several European Directives as amended and their implementation by member states.

- Protection measures shall also be in accordance with 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, and amendments).
- 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 as modified, and any member state implementation).

OTHER POSSIBLE REGULATIONS:

Member states are in charge of implementing European Directives into their own national regulations within a period of time normally specified in the directive.

Member states may impose more stringent requirements. Please always refer to any applicable regulations.

SECTION 16. OTHER INFORMATION

Continuous use of these products at temperatures above 900° C may, as with many other refractories, lead to the formation of cristobalite (a type of crystalline silica).

Please refer to sections 3, 11 and to national regulation of crystalline silica.

Useful references

Non exhaustive list of some regulations:

- German
Gefahrstoffverordnung; Arbeitsmedizinische Vorsorge.
Berufsgenossenschaftliche Grundsätze: G 1.1 Gesundheitsgefährlicher mineralischer Staub, Teil 1: Silikaogener Staub.
- France
Décret N° 97-331, du 10 Avril 1997 Relatif à la protection de certains travailleurs exposés à l'inhalation de siliceuses sur leurs lieux de travail.
Arrêté 10 avril 1997 relatif au contrôle de l'exposition des travailleurs exposés aux poussières de silice cristalline.
- United Kingdom
COSHH Regulation
HSE EH44 : Dust : General principles of protection.
HSE EH59 : Crystalline silica guidance note.
MDHS 14/3 : Health and Safety Executive (2000) : " General methods for the sampling and gravimetric analysis of respirable and total inhalable dust." Methods for the Determination of Hazardous Substances N° 14/3. HMSO, London.
MDHS 51/2: Health and Safety Executive (1988): " Quartz is respirable airborne dusts ". Laboratory method using X-Ray diffraction (Direct method). Methods for the Determination of Hazardous Substances N° 51/2, London.
MDHS 76: Health and Safety Executive (1994): "Cristobalite in respirable airborne dusts". Laboratory method using X-ray diffraction (direct method). Methods for the Determination of Hazardous Substances No. 76, London.
MS (A) 15 – Silica dust and you.
HS (G) 72 – Control of respirable silica dust in heavy clay and refractory processes.

PRECAUTIONARY MEASURES TO BE TAKEN AFTER SERVICE AND UPON REMOVAL

Because high concentrations of dust may be generated when after-service products are mechanically disturbed during operations such as wrecking, it is recommended that:

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.



NOTICE:

Although reasonable care has been taken in the preparation of the information contained herein, Nutec extends no warranties, makes no representation and assumes no responsibility as to the accuracy or suitability of such information for application to purchaser's intended purposes or for consequences of its use.

Revised by: F. Miranda
August 2009