SDS Number: MW0004-EU **According to (EC) No 1907/2006 and (EC) No 1272/2008**

Date of Issue: June 1998 **Date of Last Revision: Jun 2017**

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY

1.1 PRODUCT IDENTIFIER: **MaxCement™(1300 & 1500 °C), MaxSealCoat™, MaxModuleCoat™.**

This product contains Refractory Ceramic Fibres (RCF)/Alumino-silicate wools (ASW) ((RCF/ASW)).

Index Number: 650-017-00-8 of Annex VI

CAS Number: 142844-00-6

CAS Name: Refractories, fibres, alumino-silicate.

Registration Number: 01-2119458050-50-0005

1.2 RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES ADVISED AGAINST:

Restricted to “professional users” , for application as thermal insulation, Heat shields and containment, gaskets and expansion joints at temperatures up to 1400°C in industrial and domestic furnaces, kilns, boilers and other processes equipment. For application in aerospace and automotive industries. Products are not intended for direct sale to the general public.

- **Primary Use:** Manufacture of fibre (refers to the initial production of the fibre and is therefore not relevant to the downstream user).
- **Secondary Use:** Conversion in to wet and dry mixtures and articles (refer to section 8).
- **Tertiary Use:** Installation, removal (industrial and professional) / Maintenance and service life (industrial and professional) (refer to section 8).

Uses Advised Against: Spraying of the product.

1.3 MANUFACTURER/SUPPLIER: NUTEC EUROPE, S.A. DE C.V.
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48240 Berriz, Vizcaya - Spain
Phone: +34 946 203 700
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http://www.nuteceurope.com

1.4 EMERGENCY TELEPHONE NUMBER:

Tel: +34 946 203 700
Language: English
Opening hours: Only available during office hours

SECTION 2. HAZARDS IDENTIFICATION

2.1 CLASSIFICATION OF THE SUBSTANCE/MIXTURE

2.1.1. Classification according to regulation (ec) no 1272/2008

Under the CLP-Regulation (classification, labelling and packaging of substances and mixtures) RCF/ASW has been classified as a 1B carcinogen ("presumed to have carcinogenic potential for humans, classification is largely based on animal evidence").

2.1.2 Additional information

The International Agency for Research on Cancer (IARC) reaffirmed in 2001 that group 2B ("possibly carcinogenic to humans") remains the appropriate classification for RCF/ASW.

In accordance with 31st Adaptation to Technical Progress (ATP) of Directive 67/548/ECC as published 15th January 2009 the classification as "irritant" has been removed for all types of man made vitreous fibres (MMVFs).

2.2 LABEL ELEMENTS

Component	Classification	Hazard pictogram & Symbol	H Statement
Refractory ceramic fibres (Alumino-silicate wools)	(EC)No. 1272/2008	GHS 08	H350i

Hazard pictogram: GHS 08

Signal Word: Danger

Hazard Statements: May cause cancer by inhalation (H350i)

Precautionary statements: Do not handle until all safety instructions have been read and understood. (P202)
Use personal protective equipment as required. (P281)

2.3 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 effects for crystalline silica. 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 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 V 68) In making the overall evaluation the Working Group noted however that carcinogenicity in humans was not detected in all industrial circumstances studied.

SECTION 3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 SUBSTANCES

NUTEC HT, HTZ, HP and LT fiber in the form of bulk, blanket and blanket modules are made of Refractory Ceramic Fibres (Refractories, Fibres, aluminosilicate)

COMPONENT	% by weight	CAS NUMBER	Index number in CLP Annex VI	REACH Registration Number	Hazard Classification according to CLP
Refractory ceramic fibres (Alumino-silicate wools)	22 - 36	142844 – 00 - 6	650-017-00-8	01-2119458050-50-0005	Carc 1B (H350i)
Silicon dioxide (Amorphous)	5-32	7631 - 86 - 9	---	Not yet available	Not classified
Organic material	1-10	Not applicable	---	Not yet available	Not classified
Aluminosilicates	1-20	13983-17-0	---	Not yet available	Not classified

3.2 COMPOSITION ADDITIONAL INFORMATION

COMPOSITION:

CAS definition: Chemical composition of Refractory Ceramic Fibres (RCF/ASW): SiO_2 45-60% - Al_2O_3 28-55%, ZrO_2<18%

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

SECTION 4. FIRST AID MEASURES

4.1 SKIN

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**.**

4.2 EYES

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

4.3 NOSE AND THROAT

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

4.4 FIRST AID ADDITIONAL INFORMATION

If symptoms persist, seek medical advice.

SECTION 5. FIREFIGHTING MEASURES

5.1 EXTINGUISHING MEDIA.

Use extinguishing agent suitable for surrounding combustible materials.

5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

Non-combustible products.

5.3 ADVICE FOR FIREFIGHTERS

Packaging and surrounding materials may be combustible.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

- Where abnormally high dust concentrations occur, provide workers with appropriate protective equipment as detailed in section 8.
- Restrict access to the area to a minimum number of workers required.
- Restore the situation to normal as quickly as possible.

6.2 ENVIRONMENTAL PRECAUTIONS

- Prevent further dust dispersion for example by dampening the materials
- Do not flush spillage to drain.
- Check for local regulations, which may apply.

6.3 METHODS AND MATERIALS FOR CONTAINMENT AND CLEAN UP

- Pick up large pieces and use a vacuum cleaner fitted with a 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 to be windblown.

6.4 REFERENCE TO OTHER SECTIONS

For further information, please refer to sections 7 and 8

SECTION 7. HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING

- Handling can be a source of dust emission and therefore the processes should be designed to limit the amount of handling. Whenever possible, handling should be carried out under controlled conditions (i.e., using dust exhaust system).

- Regular good housekeeping will minimize secondary dust dispersal.

7.2 CONDITIONS FOR SAFE STORAGE INCLUDING ANY INCOMPATIBILITIES

- Store in original packaging in dry area.
- Always use sealed and visibly labeled containers.
- Avoid damaging containers.
- Reduce dust emission during unpacking.
- Emptied containers, which may contain debris, should be cleaned before disposal or recycling.
- Recyclable cardboard and/or plastic films are recommended for packaging.

7.3 SPECIFIC END USE

- The main application of these products is as thermal insulation. Use of the products is restricted to “professional users”.
- Please refer to section 8 and the relevant exposure scenario.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 CONTROL PARAMETERS

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 national OELs (November 2014) are given in the table below. Additional references and/or updates can be found on the following websites:

http://www.dguv.de/ifa/en/gestis/limit_values

http://osha.europa.eu/en/publications/reports/548OELs/view

Country	Total Dust (mg/m^3)	Resp Dust (mg/m^3)	Quartz (mg/m^3)	Cristobalite (mg/m^3)
Austria	**10**	**6**	**0.15**	**0.15**
Belgium	**10**	**3**	**0.10**	**0.05**
Denmark	**10**	**5**	**0.10**	**0.05**
Finland	**No limit**	**No limit**	**0.20**	**0.10**
France	**10**	**5**	**0.10**	**0.05**
Germany	**10**	**1.25**	**No limit**	**No limit**
Italy	**10**	**3**	**0.025**	**0.025**
Poland	**No limit**	**No limit**	**0.30**	**0.30**
Spain	**10**	**3**	**0.10**	**0.05**
Sweden	**10**	**5**	**0.10**	**0.05**
The Netherlands	**10**	**5**	**0.075**	**0.075**

UK	**10**	**4**	**0.10**	**0.10**

Note:
Gravimetric concentrations of respirable dust-8-hr time weighted average.

Information on monitoring procedures

United Kingdom

MDHS 14/4 - "General methods for sampling and gravimetric analysis of respirable, thoracic and inhalable aerosols"

MDHS 101 - "Crystalline silica in respirable airborne dusts"

NIOSH

NIOSH 0500 "Particulates not otherwise regulated, total"

NIOSH 0600 "Particulates not otherwise regulated, respirable"

NIOSH 7500 " Silica, Crystalline, by XRD (filter redeposition)"

8.2 - Exposure controls

8.2.1 Appropriate engineering controls

Review your applications in order to identify potential sources of dust exposure. Local exhaust ventilation, which collects dust at source, can be used. For example down draft tables, emission controlling tools and materials handling equipment. Keep the workplace clean. Use a vacuum cleaner. Avoid brushing and compressed air.

If necessary, consult an industrial hygienist to design workplace controls and practices.

The use of products specially tailored to your application(s) will help to control dust. Some products can be delivered ready for use to avoid further cutting or machining. Some could be pre-treated or packaged to minimise or avoid dust release during handling.

Consult your supplier for further details

8.2.2 - 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:

As necessary wear goggles or safety glasses with side shields.

Respiratory protection:

For dust concentrations below the exposure limit value, RPE is not required but FFP2 respirators may be used on a 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 Thermal Ceramics' supplier.

Information and training of workers

Workers should be trained on good working practices and informed on applicable local regulations

8.2.3 - Environmental Exposure Controls

Refer to local, national or European applicable environmental standards for release to air water and soil. For waste, refer to section13

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	White fiber/blanket	**PARTITION COEFFICIENT**	Not applicable
BOILING POINT	Not applicable	**ODOUR**	None
FLASH POINT	Not applicable	**MELTING POINT**	1760° C
AUTOFLAMMABILITY	Not applicable	**FLAMMABILITY**	Not applicable
OXIDISING PROPERTIES	Not applicable	**EXPLOSIVE PROPERTIES**	Not applicable
RELATIVE DENSITY	1122 - 1314 kg/m^3	**VAPOUR PRESSURE**	Not applicable
SOLUBILITY	Less than 1 mg/l	**pH**	Not applicable
LENGTH WEIGHTED GEOMETRIC MEAN DIAMETER OF FIBRES CONTAINED IN THE PRODUCT:			1,4 – 3 µm

9.2 OTHER SAFETY INFORMATION

These fibres are dense materials and so will settle rapidly from both air and liquid

SECTION 10. STABILITY AND REACTIVITY

10.1 REACTIVITY

RCF/ASW is stable and non reactive.

10.2 CHEMICAL STABILITY

RCF/ASW is inorganic, stable and inert

10.3 POSSIBILITY OF HAZARDOUS REACTIONS

None

10.4 CONDITIONS TO AVOID

Please refer to handling and storage advice in Section 7

10.5 INCOMPATIBLE MATERIALS

None

10.6 HAZARDOUS DECOMPOSITION PRODUCTS

Thermal decomposition of binder from fires or from first heat of product may release smoke, carbon monoxide, and carbon dioxide. Use adequate ventilation or other precautions to eliminate exposure to vapours resulting from thermal decomposition of binder. Exposure to thermal decomposition fumes may cause respiratory tract irritation, bronchial hyper-reactivity or an asthmatic-type response

SECTION 11. TOXICOLOGICAL INFORMATION

TOXICOKINETICS, METABOLISM AND DISTRIBUTION

11.1 **Basis Toxicokinetics**

As manufactured, these products may contain a minimal amount of crystalline silica. Exposure is predominantly by inhalation or ingestion, available toxicological information is as follows:

11.2 Human Toxicological data

Epidemiology for crystalline silica Prolonged/repeated inhalation of respirable crystalline silica dust may cause delayed lung injury (silicosis). In evaluating crystalline silica as a 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.

11.3 Information on toxicological effects

Experimental studies for crystalline silica 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.

ACUTE TOXICITY Lethal dose 50 % (LD50) / lethal concentration 50% (LC50): N.A.

Irritant properties

11.4 HUMAN TOXICOLOGICAL DATA

In order to determine possible human health effects following RCF exposure, the University of Cincinnati has been conducting medical surveillance studies on RCF workers in the U.S. The Institute of Occupational Medicine (IOM) has conducted medical surveillance studies on RCF workers in European manufacturing facilities.

Pulmonary morbidity studies among production workers in Europe and U.S.A. have demonstrated an absence of interstitial fibrosis. In the European study a reduction of lung capacity among smokers has been identified, however, based on the latest results in the U.S.A. study this reduction is no longer statistically significant.

A statistically significant correlation between pleural plaques and cumulative RCF exposure was evidenced in the USA longitudinal study.

The U.S.A. mortality study did not show evidence of increased lung tumour development either in the lung parenchyma or in the pleura.

SECTION 12. ECOLOGICAL INFORMATION

12.1 TOXICITY

These products are insoluble materials that remain stable overtime and are chemically identical to inorganic compounds found in the soil and sediment; they remain inert in the natural environment.

No adverse effects of this material on the environment are anticipated.

12.2 PERSISTENCE AND DEGRADABILITY

Not established

12.3 BIOACCUMULATIVE POTENTIAL.

Not established

12.4 MOBILITY IN SOIL

No information available

12.5 RESULTS OF PBT AND vPvB ASSESSMENT

This mixture is not considered to be persistent, bioaccumulating nor toxic (PBT).

This mixture is not considered to be very persistent and very bioaccumulative (vPvB).

12.6 OTHER ADVERSE EFFECTS

No additional information available

SECTION 13. DISPOSAL CONSIDERATIONS

13.1 WASTE TREATMENT METHODS

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.

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

TRANSPORT

14.1 UN number

Not Applicable

14.2 UN proper shipping name

Not Applicable

14.3 Transport hazard class(es)

Not Applicable

14.4 Packing group

Not Applicable

14.5 Environmental hazards

Not Applicable

14.6 Special precautions for user

Not Applicable

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not Applicable

SECTION 15. REGULATORY INFORMATION

15.1 - Safety health and environment regulations/legislation specific for the substances or mixtures

EU regulations:

- 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, labelling and packaging of substances and mixtures (OJ L 353)
- Annex of Regulation (EU) 2015/830
- Commission regulation (EC) No 790/2009 of 10 August 2009 amending, for the purposes of its adaptation to technical and scientific progress, Regulation (EC) No 1272/2008 of the European Parliament and of the Council on classification, labelling and packaging of substances and mixtures.
- The 1st Adaptation to Technical Progress (ATP) to Regulation (EC) No 1272/2008 enters into force on 25 September 2009.

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.

15.2 - Chemical Safety Assessment

Chemical Safety Reports have been requested from suppliers, as soon as this information is available it will be shared with downstream users.

SECTION 16. OTHER INFORMATION

Useful references

Precautionary measures

Additional information and precautions to be considered upon removal of after service material

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 2, 11 and to national regulation on crystalline silica.

High concentrations of dusts may be generated when after-service products are mechanically disturbed during operations such as wrecking.

Therefore Nutec recommends:

a) control measures are taken to reduce dust emissions;

b) all personnel directly involved wear an appropriate respirator to minimise exposure; and

c) Compliance with local regulatory limits.

Websites

For more information, connect to:

The Nutec Europe website: (**http://www.nuteceurope.com/**)

Or ECFIA's website: (**http://www.ecfia.eu**)

Revision Summary

Amendments to sections 2, 3, 4, 5, 6, 8, 9, 1 2, 1 4, 1 5 and 16 to comply with new guidelines

NOTICE:

The information presented here in is based on data considered to be accurate as of the date of preparation of this Safety Data Sheet. However, 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.