



**NUTEC**

**HIGH**

**TEMPERATURE**

**INSULATION**



# chronology

## 1975

NUTEC is incorporated to manufacture industrial burners and combustion equipment under license from North American Manufacturing Company of Cleveland, Ohio.

## 1979

NUTEC begins distributing CerWool ASW.

## 1985

NUTEC begins manufacturing ASW under its Trademark FIBRATEC.

## 1996

NUTEC PREMIER is incorporated as a joint venture with Premier Refractories, Inc. for the acquisition of Fibrarex ASW plant in Ramos Arizpe, Coah. Mexico.

NUTEC GROUP forms a joint venture with North American Manufacturing Company of Cleveland, Ohio to design and sell combustion system through NUTEC Combustion in Mexico and NACSUR in South America.

## 2004

NUTEC IBAR is incorporated as a joint venture with Refractorios Ibar, LTD. with a ASW manufacturing facility in Sao Paulo, Brazil.

## 2005

NUTEC GROUP companies are leaders in Mexico's industrial heating and compete in the world market with presence in 46 countries.

## 2006

Acquisition of Vesuvius USA equity in NUTEC Premier making it a wholly owned subsidiary.

## 2007

NUTEC Announces the acquisition of PROCAL, (Izurza Productos Calorifugos, S.L.), leader in the European ASW vacuum form market and named NUTEC PROCAL.

## 2009

NUTEC starts operation of a totally new production line of Spun ASW in Ramos Arizpe, Coah. Mexico, increasing their production capacity.

## 2010

NUTEC developed new products for Appliances and Fire Protection Markets. The 5S program is successfully implemented.

## 2011

NUTEC increase their installed capacity by 25% in Ramos Arizpe, Coah. Mexico. NUTEC™ obtained the Customs-Trade Partnership Against Terrorism (C-TPAT) certification.

## 2012

NUTEC opens a new Vacuum Forming facility in Ramos Arizpe, Coah. Mexico. This plant will double capacity for boards and special shapes products.

## 2013

NUTEC decides to update and change their company logo.

## 2014

NUTEC increases their overall fiber capacity by adding another furnace line. The "Max" brand name is created for all Fiber Products.

## 2015

Grand Opening of Plant III, Fabrication Facility in Ramos Arizpe, Coah. Mexico. NUTEC GROUP celebrates its 40 year anniversary.





A photograph of a large industrial facility, likely a manufacturing plant. In the foreground, there is a large white machine with a black control panel and a red emergency stop button. The machine has the word "BILO" printed on it. In the background, there are various pieces of industrial equipment, including a yellow crane and a blue scissor lift. A large orange pipe runs horizontally across the middle of the image. The ceiling is high with exposed ductwork and lighting fixtures.

# table of

# contents

## NUTEC™

- 3 MaxWool Spun Ceramic Wool Blanket
- 4 MaxWool Tank Car Blanket
- 5 Supermag Soluble Wool Products
- 6 Maftec Blanket
- 7-8 MaxBlok Modules and Module Hardware
- 9-10 MaxBoard
- 11 MaxForm Shapes
- 13 MaxWool Acoustic Grade and Wet Pack Blanket
- 14 MaxBulk
- 15 MaxPly Paper
- 16 MaxMoldable, MaxSealCoat, MaxModuleCoat
- 17 MaxRigidizer and MaxCement
- 18 MaxPumpable 2300 & 2600
- 19 Thermal Insulation System
- 20 Engineering and Installations
- 21 MaxRope and MaxBraid
- 22 People are Our Strongest Resource
- 23 Behind Technology
- 24 Worldwide Presence
- 25 Contacts



# MaxWool<sup>™</sup>

## spun ceramic wool blanket

MaxWool<sup>™</sup> Blanket is composed of long, flexible, interwoven fibers manufactured by the "spun" process yielding a strong, lightweight, durable product. This material can be used for applications with temperatures from 1000 °F (538°C) to 2600°F (1425°C). MaxWool<sup>™</sup> Blanket has high tensile strength for longer life and durability.

### FEATURES

- Low Thermal Conductivity
- Low Heat Storage
- High Tensile Strength
- Thermal Shock Resistance
- Sound Absorption
- Easy to Install
- Contains no Binder
- Contains no Asbestos
- No Curing or Dry Out Time Required

### TYPICAL APPLICATIONS

#### Refining and Petrochemical

- Reformer and Pyrolysis Furnaces
- Tube Seals, Gaskets and Expansion Joints
- High Temperature Pipe, Duct and Turbine Insulation
- Crude Oil Heater Linings

#### Steel Industry

- Heat Treating and Annealing Furnaces
- Furnace Door Linings and Seals
- Soaking Pit Covers and Seals
- Furnace Hot Face Repairs
- Reheat Furnaces
- Ladle Covers

#### Ceramic Industry

- Kiln Car Insulation and Seals
- Continuous and Batch Kilns



### Power Generation

- Boiler Insulation
- Boiler Doors
- Reusable Turbine Covers
- Pipe Covering

### Other Applications

- Insulation of Commercial Dryers and Covers
- Veneer Over Existing Refractory
- Stress Relieving Furnaces
- Glass Furnace Crown Insulation
- Fire Protection

### Typical Physical Properties

Density lb/ft<sup>3</sup>  
(kg / m<sup>3</sup>)

Maximum Use Limit, °F (°C)

Continuous Use Limit, °F (°C)

Melting Point, °F (°C)

Average Fiber Diameter, microns

### Linear Shrinkage

24 Hrs @ 1832°F (1000 °C)

24 Hrs @ 2012°F (1100 °C)

24 Hrs @ 2372°F (1300 °C)

### Chemical Analysis (%)

Al<sub>2</sub>O<sub>3</sub>

SiO<sub>2</sub>

ZrO<sub>2</sub>

Trace Elements < 1 %

LTS

HPS

HTZ

4, 6, 8, 10  
(64, 96, 128, 160)

4, 6, 8, 10  
(64, 96, 128, 160)

4, 6, 8, 10  
(64, 96, 128, 160)

2000 (1093)

2300 (1260)

2600 (1425)

1800 (982)

2200 (1204)

2450 (1343)

3200 (1760)

3200 (1760)

3200 (1760)

3.0

3.0

3.0

2.0

-

-

-

1.8

-

-

-

2.0

42-46

44-50

28-32

50-60

50-56

52-56

-

14-18



# MaxWool<sup>™</sup>

## tank car blanket

MaxWool<sup>™</sup> Tank Car Blanket, manufactured by Nutec, uses silica sand and calcined alumina. These materials are melted in an electric arc furnace. The melted material is dropped onto high speed wheels to form the fibers. The fibers are stripped off with air and deposited on a conveyor. The accumulation of the fiber is needled to the desired thickness and densities.

Nutec's MaxWool<sup>™</sup> Tank Car Blanket meets the Department of Transportation (DOT) thermal properties for fire protection under 49 CFR Part 179. The blanket product can be used as insulation in various DOT rail car classes to include: DOT – 105, 109, 111, 112, and 114. MaxWool Tank Car Blanket can be used as an insulation system for Chlorine tank cars as well.



MaxWool<sup>™</sup> provides excellent tensile strength, surface integrity, and good handling characteristics. Some typical data can be seen below:

### Technical Specifications

Classification Temperature	2300°F (1260°C)
Recommended Operating Temperature	2150°F (1176°C)
Melting Point	3200°F (1760°C)
Color	White

### Typical Chemical Analysis %

Al <sub>2</sub> O <sub>3</sub>	44-50
SiO <sub>2</sub>	50-56
Other	2
Loss on Ignition (LOI)	0

### Typical Product Parameters

Thickness	0.5", 0.65", 1.0", and 2.0"
Density (minimum)	4.5 lbs. /cu. ft.
Blanket Dimensions*	Width: up to 50" Length: 32 LF

\*For availability for other sizes or parameters, contact your Nutec Sales Engineer

### Surface Burning Characteristics per ASTM-E-84 & UL 273 "Surface Burning Characteristics of Building Materials"

Flame Spread Rating: 0  
Smoke Developed Rating: 0

The MaxWool<sup>™</sup> Tank Car Blanket does meet the thermal properties for fire protection outlined in 49 CFR Part 179.18 (Appendix B) Thermal Protection Systems April 22, 2015. The product was tested at Intertek and documented under Report # 101109776SAT-002. The blanket was tested to both the pool and torch tests. Products are used in applications and systems defined in Dockets HM-144, HM-145, HM-175, HM-175a, and HM-181.

### Chemical Properties

MaxWool<sup>™</sup> Tank Car Blanket has excellent resistance to chemical attack with a few exceptions. Those exceptions include hydrofluoric and phosphoric acids as well as strong alkalis such as sodium oxide (Na<sub>2</sub>O) and potassium oxide (K<sub>2</sub>O).



# supermag soluble wool products

Nutec™ Supermag is a high temperature body soluble fiber that utilizes a unique spinning technology to create a special fiber with superior thermal and mechanical properties. This fiber is made from a blend of calcium, silica and magnesium and can be exposed to temperatures up to 2200 °F (1200°C).

Nutec™ Supermag products are produced in our ISO-9001: 2008 certified facility where bulk, double needled blanket and modules are manufactured. The Nutec™ Supermag family of products can be used in a variety of applications including refractory linings, thermal insulation, and fire protection.



Typical Physical Properties	Supermag Blanket	Supermag Board	Supermag Bulk
Density ft <sup>3</sup> /lb (m <sup>3</sup> /Kg)	4, 6, 8, 10 (64, 96, 128, 160)	21 - 25 (336 - 400)	---
Max. Short Term Exposure °F (°C)	Up to 2200 (1200)	Up to 2192 (1200)	Up to 2192 (1200)
Continuous Use Limit, °F (°C)	2012 (1100)	1832 (1000)	1832 (1000)
Melting Point, °F (°C)	2320 (1275)	2320 (1270)	2320 (1270)
Typical Chemical Analysis, %			
SiO <sub>2</sub>	60 - 70	65 - 72	60 - 67
CaO	25 - 35	24 - 29	28 - 33
MgO	3 - 7	3 - 5	1 - 7
Others	0 - 1	0 - 1	0 - 1
Linear Shrinkage 24 Hr @ 2012 °F (1100°C)	1.2	1.2	1.2
Color	White	White	White

## Blanket Dimensions

Standard (in)	Europe (mm)
1/2 x 24 x 600	12.5 x 610 x 14640
3/4 x 24 x 300	19 x 610 x 7320
1 x 24 x 300	25 x 610 x 7320
1 1/2 x 24 x 150	38 x 610 x 4800
1 3/4 x 24 x 150	50 x 610 x 3660
2 x 24 x 150	

## Board Dimensions

Standard (in)	Europe (mm)
1/2 x 24 x 36	Width: 610 & 1000
1 x 24 x 36	Thickness: 10, 25, 38, 50
1 1/2 x 24 x 36	Length: 1000 & 1220
2 x 24 x 36	

This product is manufactured in Mexico by Nutec™ under patent license (US Patent Nos. 5332699, 5714421, 5994247, 6180546, 7259118 and equivalent patents elsewhere).

## FEATURES

- Low Thermal Conductivity
- Low Heat Storage
- High Tensile Strength
- Thermal Shock Resistance
- Lightweight
- Excellent Corrosion Resistance

## TYPICAL APPLICATIONS

- Aluminum Homogenizing Furnaces
- Back-Up Insulation
- Annealing Furnaces
- Stress Relieving
- Heat Treating Furnaces
- Crude Heaters
- Co-Generation Ducts
- Insulating Pads
- Expansion Joints

Health and Safety information: Supermag products by Nutec™ meet European regulatory requirement Directive 97/69/EC, and possess a fiber chemistry within the regulatory definition of a "man-made vitreous (silicate) fiber with random orientation with alkaline oxide and alkaline earth oxide content greater than 18% by weight". Please Refer to the product Material Safety Data Sheet (MSDS) for other recommended product safety information.



# Maftec Blanket

Maftec Blanket is a high temperature needled blanket that is used in applications for temperatures up to 2900°F. This blanket is made from high alumina fibers which are double needled to provide high tensile strength and durability.

Maftec Blanket is resistant to shrinkage at high temperatures. This product is thermal shock resistant with low thermal conductivity and low heat storage. Maftec Blanket can be made into modules with densities of 6# or 8# with thicknesses from 4" – 12".

Special density modules are available upon request.



## TYPICAL APPLICATIONS

- Furnace Linings for Ceramic Kilns
- Ladle Pre- Heat Covers
- Soaking Pit Covers

## Typical Physical Properties

Density:	6#/ft <sup>3</sup> (96 kg/m <sup>3</sup> ), 8#/ft <sup>3</sup> (128 kg/m <sup>3</sup> )	
Thickness:	½" (12mm), 1" (25mm)	
Width:	24" (610mm)	
Length:	283" (718.8cm)	
Melting Point:	3300 °F (1816 °C)	
Maximum Use Temperature:	2900 °F (1600 °C)	
Chemical Composition:	Al <sub>2</sub> O <sub>3</sub> 72% SiO <sub>2</sub> 28%	
Linear Shrinkage (24 hr.)	2552 °F(1400°C)	<1%
	2912 °F(1600°C)	1%

# MaxBlok Modules

MaxBlok™ Modules are designed for full thickness furnace linings and provide a high quality insulation system. Each Module is continuously folded and compressed to specific density to provide longer furnace life.

MaxBlok™ Modules linings provide low heat loss and storage which increases furnace productivity and efficiency.

## TYPICAL APPLICATIONS

### Ceramic Industry

- Low Mass Kiln Cars
- Continuous and Batch Kilns
- Door Linings
- Glazing and Porcelain Furnace Linings

### Power Generation

- Duct Linings
- Heat Recovery Systems
- Boiler Insulation
- Stack Linings

### Refining and Petrochemical

- Ethylene Furnaces
- Pyrolysis Furnaces
- Reformer Furnaces
- Boiler Linings



### Steel Industry

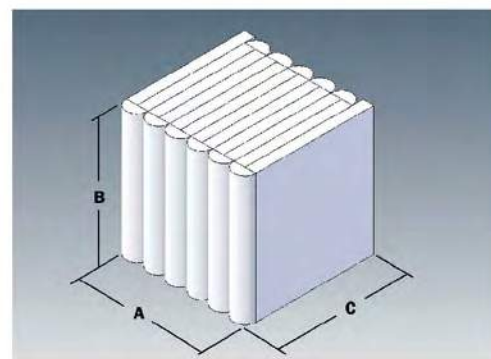
- Pre-Heat Ladle Covers
- Heat Treat Furnaces
- Soaking Pit Covers and Seals
- Reheat Furnaces

### Other Applications:

- Insulation of Commercial Dryers and Ovens
- Veneer over Existing Refractory
- Stress Relieving Insulation
- Glass Furnace Crown Insulation

## STANDARD DIMENSIONS:

Dimensions: A: 305 & 610 (12" & 24")  
 B: 305 & 610 (12" & 24")  
 C: 100 - 305 (4" - 12")  
 Special sizes upon request



Technical Specifications	LTS	HPS	HTZ
Maximum Use Limit, °F (°C)	1832 (1000)	2300(1260)	2600(1425)
Continuous Use Limit, °F (°C)	1652(900)	2200(1204)	2417 (1325)
Density ft <sup>3</sup> /lbs. (m <sup>3</sup> /kg)	Folded Modules 8,9,3,10, 12 & 14 (128,149,160,192 & 224) EDGE Grain Modules 8 & 10 (128 & 160 )		

## Thermal Shrinkage (%)

24 Hrs @ 2012°F (1100 °C)

1.8

24 Hrs @ 2372°F (1300 °C)

2.0

## Chemistry

Al <sub>2</sub> O <sub>3</sub>	42 - 46	44 - 50	28 - 32
SiO <sub>2</sub>	50 - 60	50 - 56	52 - 56
ZrO <sub>2</sub>			14 - 18

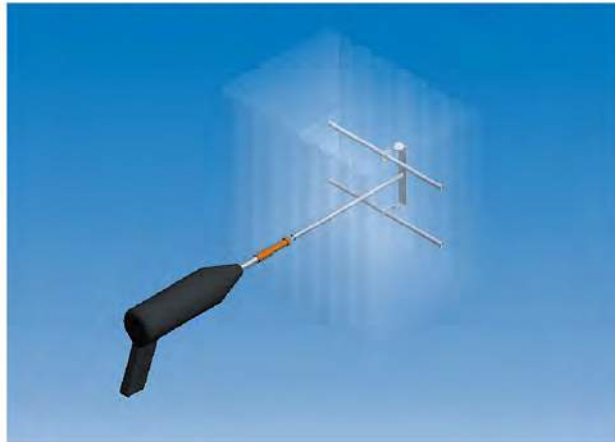
Trace Elements < 1%

## MODULE HARDWARE AVAILABLE

- Weld - Tite: Speed Weld Stud System
- Stud - Tite: Pre - Welded Stud
- H - Anchor

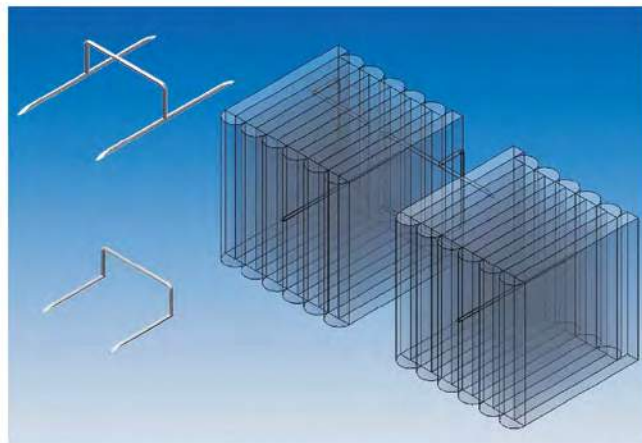
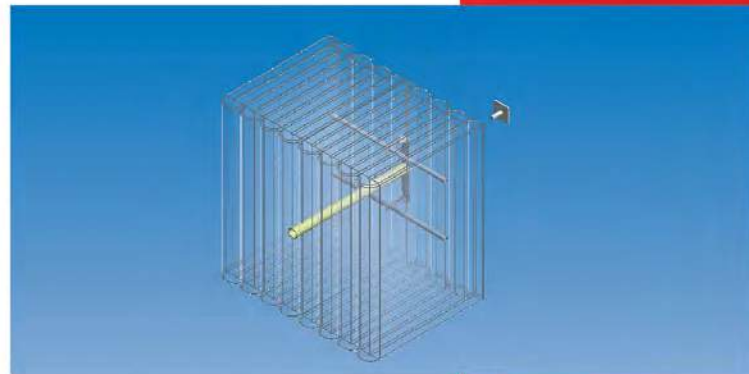


# module hardware



**WELD-TITE MODULE** Attachment is a speed weld system that requires no stud pattern or furnace layout. The advantage to this attachment system is the speed of installation. Just fire the speed weld gun which attaches the stud to the furnace casing and then tightens the module onto the stud. Nutec™ modules can be installed in a Uni-directional (with batten strips) or in a Parquet pattern.

**STUD-TITE MODULE** Attachment requires a stud pattern or furnace layout before installing the modules. After the furnace layout is completed, each stud is welded to the furnace casing. The modules are then positioned over the stud and secured with a threaded nut. There are no blind welds when using the Stud-Tite system. This attachment provides longer furnace life. Nutec™ modules can be installed in a Uni-directional (with batten strips) or in a Parquet pattern.



**H ANCHOR MODULE** Attachment can be used for standard size modules or with Macro Modules (larger size modules). This hardware system provides a strong and durable lining for longer furnace life. This attachment is quick and easy to install. The H Anchor is welded to the furnace shell and a module is slid over both sides of the anchor. Using this system, Nutec™ modules can only be installed in a Uni-directional pattern with batten strips.



# MaxBoard

MaxBoard™ products are processed from alumina and silica blends for applications with temperatures up to 3000°F (1650°C).

MaxBoard™ are vacuum formed products that are made to resist high velocities. These products provide low thermal conductivity, low heat loss and heat storage. Vacuum Formed Boards are ideal for furnace linings, boiler ducts and stacks.

MaxBoard™ can be made with Organic or Inorganic (no smoke) formulations to meet your product requirements.



## FEATURES

- Low Thermal Conductivity
- Low Heat Loss and Storage
- Lightweight
- Resistance to High Velocity
- Easy to Install
- Resistant to Non-Ferrous Metals
- Contains No Asbestos

### All Board Dimensions

Thickness:  
Width:  
Length:

### Standard

1/2", 1", 1 1/2", 2", 2 1/2", 3"  
12", 24"  
36", 48"

### Technical Specifications

### LD-2300

Maximum Use Temperature, °F (°C)

2300 (1260)

Continuous Use Limit, °F (°C)

2100 (1149)

Melting Point, °F (°C)

3150 (1732)

Density m<sup>3</sup>/Kg (ft<sup>3</sup>/lbs.)

14-20 (224-320)

Thermal Shrinkage (%)  
24 Hrs. @ 2192°F (1200°C)

2 - 3

### Chemical Analysis (%)

Al<sub>2</sub>O<sub>3</sub>  
SiO<sub>2</sub>  
ZrO<sub>2</sub>  
Others

39 - 41  
52 - 54  
—  
2 - 3

L.O.I. Organic / Inorganic

4 - 6 / 0



# MaxBoard



## TYPICAL APPLICATIONS

- Refractory Lining for Industrial Furnaces
- Combustion Chamber Liners, Boilers and Heaters
- Expansion Joints
- Board over Blanket Linings
- Back-Up Insulation

HD-2300	HDZ-2600	2600 HT	3000 HT
2300 (1260)	2600 (1425)	2600 (1345)	3000 (1650)
2100 (1149)	2300 (1260)	2450 (1345)	2750 (1510)
3150 (1732)	3236 (1780)	3300 (1816)	3400 (1871)
26 - 30 (416 - 480)	23 - 29 (368 - 464)	12-16 (192-256)	9-12 (144-192)
1 - 2	1 - 2	< 2	< 2
43 - 45	50 - 56	48 - 52	54 - 58
47 - 49	33 - 39	47 - 51	41 - 45
—	7 - 13	—	—
2-3	1	1	1
4 - 5/0	4 - 5/0	4 - 7	4 - 7



# MaxForm Shapes

MaxForm™ Shapes are processed from alumina and silica blends for applications with temperatures up to 3000°F (1650°C).

MaxForm™ Shapes are vacuum formed products that are made to resist high velocities. These products are ideal for furnace linings, boiler duct and stack linings due to their low thermal conductivity, low heat loss and storage.

## FEATURES

- Low Thermal Conductivity
- Low Heat Loss and Storage
- Lightweight
- Resistant to High Velocity
- Easy to Install
- Resistant to Non-Ferrous Metals
- Contains No Asbestos

## TYPICAL APPLICATIONS

- Refractory Lining for Industrial Furnaces
- Combustion Chamber Liners, Boilers and Heaters
- Expansion Joints
- Board over Blanket Linings

MaxForm™ Shapes are available with special densities upon request and are available in a wide variety of shape configurations.

Technical Specifications	LD-2300	HD-2300	3000 HT
Maximum Use Temperature, °F (°C)	2300 (1260)	2300 (1260)	3000 (1650)
Continuous Use Temperature, °F (°C)	2100 (1149)	2100 (1149)	2700 (1482)
Melting Point °F (°C)	3150 (1732)	3150 (1732)	3400 (1871)
Density ( lbs./ft <sup>3</sup> ) kg / m <sup>3</sup>	14-20 (224-320)	20-28 (320-448)	9 - 12 (144-192)
Thermal Shrinkage (%) 24 Hrs. @ 2200°F (1200 °C)	2 - 3	1 - 2	< 2
Chemical Analysis (%)			
Al <sub>2</sub> O <sub>3</sub>	39 - 41	43 - 45	54 - 58
SiO <sub>2</sub>	52 - 54	47 - 49	41 - 45
Others	2 - 3	2 - 3	1
L.O.I. Organic / Inorganic	4 - 6/ 0	4 - 5/ 0	4 - 7



# MaxForm shapes





# MaxWool<sup>™</sup> Acoustic Grade

MaxWool<sup>™</sup> Acoustic Grade Blanket is a high strength insulating product engineered to provide superior acoustical properties. Acoustic Blanket is a binder free product, manufactured to improve sound attenuation characteristics.

MaxWool<sup>™</sup> Acoustic Grade Blanket is made from long interlocking fibers that provides excellent handling strength and vibration resistance.

## Technical Specifications

Color	White
Classification Temperature	2300°F (1260°C)
Tensile Strength	30 kPa
Density m <sup>3</sup> /kg (ft <sup>3</sup> /lbs)	3-5 (48-80)
Airflow Resistivity	153-303 mks/rayls/m
Thermal Shrinkage	24 hrs @ 2012°F (1100°C): 1.8%

## Chemical Analysis %

Al <sub>2</sub> O <sub>3</sub>	44 - 50
SiO <sub>2</sub>	50 - 56
Trace Elements	< 1%

## General Characteristics

- Excellent Sound Absorption
- Excellent Tensile Strength
- Vibration Resistance

## Typical Applications

- Gas Turbine Exhaust Duct Linings
- Thermal and Acoustic Insulation



# MaxWool<sup>™</sup> wet pack Blanket

MaxWool<sup>™</sup> Wet Pack Blanket is presaturated with rigidizing solution which causes it to harden when exposed to ambient air or heat. This product is used in applications with high velocity or process atmospheres for corrosion resistance.

## Typical Physical Properties

Color	White
Grade Classification Temp, °F (°C)	2300 (1260)
Maximum Continuous Use Limit, °F (°C)	2150 (1176)
Normal Layer Thickness, in (mm)	½ and 1 (12.7-25.4)
Wet Density m <sup>3</sup> /kg (ft <sup>3</sup> /lb)	35 - 40 (560 - 640)
Dry Density m <sup>3</sup> /kg (ft <sup>3</sup> /lb)	15 - 20 (240 - 320)
Linear Shrinkage 24 hrs °F (°C)	2000 (1.5 - 2.0% @ 1093)

## Typical Chemical Analysis

Al <sub>2</sub> O <sub>3</sub>	39 - 45
SiO <sub>2</sub>	55 - 61
Trace Elements	< 2

## Packaging

Rolls - plastic bag



# MaxBulk

MaxBulk™ fibers are produced by melting high purity alumina and silica raw materials.

MaxBulk™ fibers can be manufactured by the “blown” and the “spun” processes. They are used as the base for all products: blanket, moldable, vacuum formed board and shapes.

## FEATURES

- Low Thermal Conductivity
- Low Heat Storage
- Excellent Thermal Shock Resistance
- Maximum Use Limit to 2700°F (1482°C)
- Low Sound Absorption
- Contains No Asbestos

## TYPICAL APPLICATIONS

- Packing of Expansion Joints
- Vacuum Formed Products



### Typical Physical Properties

	LTS	HPS	HTZ
Maximum Use Limit, °F (°C)	2000 (1093)	2300 (1260)	2600 (1425)
Continuous Use Limit, °F (°C)	1800 (982)	2150 (1176)	2450 (1343)
Melting Point, °F (°C)	3200 (1760)	3200 (1760)	3299 (1815)

### Chemical Analysis (%)

Al <sub>2</sub> O <sub>3</sub>	42-46	44-50	28-32
SiO <sub>2</sub>	50-60	50-56	52-56
ZrO <sub>2</sub>	-		14-18
Trace Elements < 1 %			

### Packaging

26 lbs / ctn (12kg / ctn)	•	•	•
40 lbs / ctn (18kg / ctn)	•	•	•



# MaxPly<sup>TM</sup> paper

MaxPly<sup>TM</sup> Paper is a lightweight refractory material processed from a blend of high purity alumina-silica wools. This product can be used for applications for continuous use to temperatures of 2300°F (1260°C).

MaxPly<sup>TM</sup> Paper has good handling strength, low thermal conductivity and low shrinkage. It contains an organic binder which makes it flexible and reduces off-gassing and odor during use. The paper has a highly uniform consistency due to its controlled basis weight and thickness. This product is ideal for gaskets and seals.

MaxPly<sup>TM</sup> Paper is durable and can be cut with a knife, shears, or standard steel rule dies. Its flexibility allows it to be wrapped or rolled to fit around most configurations.

MaxPly<sup>TM</sup> Paper is free of asbestos and is designed to be a replacement for asbestos paper in most applications.



## FEATURES

- Temperature Stability
- Low Thermal Conductivity
- Low Heat Storage
- Lightweight
- Thermal Shock Resistant
- Good Dielectric Strength
- High Tensile Strength
- Good Flame Resistance
- Easy to Cut

## TYPICAL APPLICATIONS

- Asbestos Paper Replacement
- Investment Cast Mold Wrap
- Back-Up Lining for Metal Troughs
- Hot Top Lining
- Thermal and Electrical Insulation
- Replacement for Fiberglass Paper

## Technical Specifications NF 1260 Paper

Melting Point	3150 °F (1732 °C)
Maximum Use Temperature	2100 °F (1149 °C)

## Chemical Analysis

L.O.I.	6 - 8 %
Density lbs/ft <sup>3</sup> (kg/m <sup>3</sup> )	11.6 (185)
Thickness in (mm)	1/8 - 1/4 (3-6)

## Available Roll Size:

1.5 x 610 x 15,000 mm	1/16" x 24" x 200'
3 x 610 x 15,000 mm	1/8" x 24" x 100'
6 x 610 x 10,000 mm	1/4" x 24" x 50'

## Available Width:

24", 48"

Special widths are available upon request.



# MaxMoldable

## MaxSealCoat&MaxModuleCoat

MaxMoldable™ (2300) is a multipurpose product manufactured from a blend of alumina-silica fibers and binders. Moldable is a tacky, putty-like material that adheres to ceramic wools and refractory material.

MaxMoldable™ (2300) is used to prevent heat loss caused by the deterioration of existing linings. MaxMoldable™ can also be used to fill cracks or as a seal. This product can be installed by using a trowel or a caulking gun.

### FEATURES

- Low Heat Storage
- Excellent Thermal Shock Resistance
- High Velocity Resistance
- Easy to Install
- Adheres to Ceramic and Refractory Materials
- Excellent Corrosion Resistance
- Impermeable to Non-Ferrous Metals
- Contains No Asbestos

### TYPICAL APPLICATIONS

- Trough Liners for Non-Ferrous Metals
- Gaskets and Seals for Burner Blocks
- Gaskets and Seals for Chimneys and Stacks
- Boiler Door Seals and Thermal Insulation
- Fill Voids and Cracks in Refractory Surfaces



MaxSealCoat™ 2600 is a tacky, putty-like material that can be used to repair hot face module linings for temperatures that exceed 2400°F. This product can be applied into refractory joints and cracks as a seal or for hot spot repair. MaxSealCoat™ 2600 can also be used in applications with high velocity or mechanical abuse. The product can be pumped onto the surface or applied with a trowel. After drying, the product will harden on the surface of the fiber with low shrinkage.

MaxModuleCoat™ is a product that can be used to repair furnace linings using modules or blanket. This is a tacky-putty like material that can be used in temperatures up to 2450°F with very low shrinkage (1.2 %). This product is ideal for filling shrinkage cracks for modules or to patch blanket linings. The product can be applied to furnace lining with a hand trowel or with a pneumatic pump.

### Typical Physical Properties

	MaxMoldable (2300)	MaxSealCoat(2600)	MaxModuleCoat(2600)
Color	Off- White	Brown	Gray
Grade Classification Temp, °F (°C)	2300 (1260)	2600 (1425)	2600 (1425)
Maximum Continuous Use Limit, °F (°C)	2190 (1200)	2420 (1325)	2450 (1315)
Solids (%)	50	43	45
Wet density lb/ft³ (kg/m³)	70 - 75 (1122 - 1202)	76 - 82 (1218 - 1314)	80 (1282)
Dry density lb/ft³ (kg/m³)	30 - 35 (481-561)	30 - 36 (481 - 577)	35 (561)
Linear Shrinkage 24 h °F (°C)	2.8%@ 2000°F (1093 °C)	2.8%@2600°F (1426°C)	1.2%@2450°F (1345°C)

### Typical Chemical Analysis

Al <sub>2</sub> O <sub>3</sub>	40 - 42	47 - 50	40 - 42
SiO <sub>2</sub>	50 - 52	49 - 52	50 - 52
Fe <sub>2</sub> O <sub>3</sub>		0.5 - 0.9	
Other		1.5 - 2.3	

### Packaging

1 gal Plastic pails  
5 gal Plastic pails  
2 pound caulking tube

•  
•  
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—  
•

\*6 month shelf life

### FEATURES

- Low Shrinkage at High Temperatures
- Module Lining Repair
- Low Heat Storage
- High Velocity Resistance
- Adheres to Ceramic and Refractory Materials
- Excellent Corrosion Resistance
- Easy to install

NUTEC  
high temperature insulation wools



# MaxRigidizer & MaxCement

MaxWool™ Rigidizer can be used for applications with high velocity or flame impingement on ceramic wools. Rigidizer can be applied to the surface of Blanket, Modules or other high temperature insulations by spraying or brushing. After drying, Rigidizer will harden the surface of the product to make it more resistant to high velocity. It is normally applied after the ceramic fiber is installed.

MaxWool™ Rigidizer comes in 5-gallon plastic pails.

## COVERAGE FOR 1 GALLON:

Brushed: 50 square feet  
Sprayed: 100 square feet

## TYPICAL APPLICATIONS

- High Velocity Resistance
- Hot Gas Erosion or Flame Impingement
- Catalytic Converter Mat Protection
- Hardening Agent for Fiber Products

MaxWool Cement is a mix of high purity adhesives used to hold fiber materials together. The cement has the consistency of thick cream and can be applied by brushing or trowelling. Water can be used to thin the cement for use with other refractory materials.

## TYPICAL APPLICATIONS

- Veneering Modules over Refractory
- Adhesive for Ceramic Wools
- Mortar for Refractory
- Adhesive for Paper Applications
- Attaching Boards to Furnace Shell



Typical Physical Properties	Rigidizer 2300	Rigidizer 2700	CF Cement 1300	CF Cement 1500
Color	Red	Red	White	Off-White
Grade Classification Temp, °F (°C)	2300 (1260)	2700 (1482)	2300 (1260)	2732 (1500)
Maximum Continuous Use Limit, °F (°C)	2300 (1260)	2700 (1482)	2300 (1260)	2732 (1500)
Normal Layer Thickness, mm (in)	—	—	0.25-1.0 (0.01-0.04)	1-3 (0.039-0.117)
Coverage Rate m <sup>2</sup> /gal (sf/gal)	9.29 (100)	9.29 (100)	1.2-2.5 (0.01-0.04)	0.5 (0.01-0.04)
Solids (%)	—	—	70-72	72-75
Linear Shrinkage 24 h °F (°C)	—	—	3.1% @ 2300 (1260)	3.1% @ 2300 (1260)
<b>Packing</b>				
1 gal Plastic pails	10.7 Lb / 4.86 Kg	10.7 Lb / 4.86 Kg	10.7 Lb / 4.86 Kg	10.7 Lb / 4.86 Kg
5 gal Plastic pails	52.5 Lb / 23.8 Kg	52.5 Lb / 23.8 Kg		



# MaxPumpable

## 2300 & 2600

MaxPumpable™ products are used primarily for repairing hot spot for furnace applications without bringing the furnace down for repair. This product has been made to flow easily through a piston pump or caulking gun into the hot spot area.

This is a multi-purpose product with excellent insulation properties, easy to install and with a lightweight dried density. It has excellent adhesion to ceramic wools, refractories and steel. It can also be used to reach places where fibers or refractory have degraded causing hot spots.



Typical Physical Properties	2300 Pumpable	2600 Pumpable
Color	Off - White	Off - White
Maximum Use Temperature, °F (°C)	2190 (1200)	2600 (1425)
Continuous Use Limit, °F (°C)	2190 (1200)	2500 (1370)
Solids (%)	40	36
Wet density m <sup>3</sup> /kg (ft <sup>3</sup> /lb)	70 - 75 (1122 - 1202)	75 - 80 (1122 - 1283)
Dry density m <sup>3</sup> /kg (ft <sup>3</sup> /lb)	30 - 35 (481 - 561)	25 - 29 (400 - 465)
Linear Shrinkage 24 h °F (°C)	2.8% @ 2000°F (1093 °C)	2.5% @ 2000°F (1093 °C)

### Typical Chemical Analysis

Al <sub>2</sub> O <sub>3</sub>	45 - 47	41 - 45
SiO <sub>2</sub>	50 - 52	46 - 50

### Packaging

1 gal Plastic pails	10.7 Lb / 4.86 kg	10.7 Lb / 4.86 kg
5 gal Plastic pails	49.2 Lb / 22.3 kg	49.2 Lb / 22.3 kg
2 lb caulking tubes	•	•

### TYPICAL APPLICATIONS

- Hot Spot Repair
- Back-Up Insulation
- Seal Furnace Cracks



# thermal insulation system

## LADLE COVERS

MaxWool™ Ladles Covers are engineered and designed to support tough furnace environments. This system has excellent insulation quality that is durable with low shrinkage and no thermal shock. Typical operating temperatures are 1000°F (538°C) to 2700°F (1480°C).

## ADVANTAGES

- Energy Efficiency
- Easy Repair
- Lower Maintenance Costs
- Lightweight

## FEATURES

- Low Thermal Conductivity
- Low Heat Storage
- No Thermal Shock
- Variable Size Capability
- No Curing or Dry-Out Time



## MACROMODULE

MaxWool™ Macro Modules are an insulation system for industrial furnace and kilns for temperatures up to 2700°F (1482°C). They are a monolithic module made from folded serpentine blanket to add durability. The modules are then anchored to the metal mesh, which is assembled to the structure of the furnace or kiln.

## ADVANTAGES

- Excellent Thermal Efficiency
- No Through Joints
- More Anchors / Square Foot
- Uniform Density
- Single Piece Construction



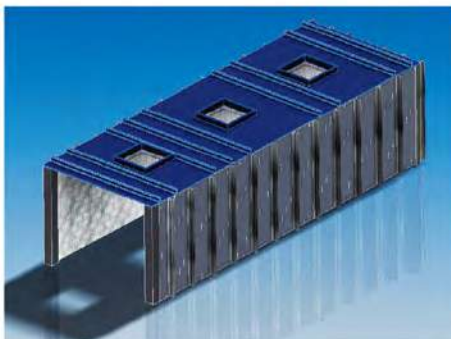
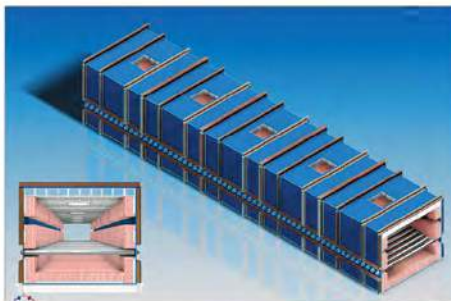


# engineering & installations



Nutec™ installs a variety of ceramic wool insulation linings like layered Blanket, Modules, Macromodules™ and special linings.

Installation drawings are available for all types of industrial kilns and furnaces for any industrial market.





# MaxRope™ & MaxBraid™

MaxRope™ and MaxBraid™ are a family of textile products used for industrial applications up to 2300 °F. These materials can be used for gasketing, packing and sealing in and around high temperature heating equipment. Produced from ceramic fibers, these products exhibit excellent resistance to corrosive agents. Exceptions are hydrofluoric acid, phosphoric acid and alkalis. If the product is moistened by water or steam, the thermal properties are completely restored after drying.

MaxRope™ Twisted Rope is produced by twisting 3-plys of ceramic fiber wicking. This product is relatively soft and lower in density than other rope products. Twisted rope can be used in applications where low cost is required. This product is also available with over braiding of Inconel wire which increases resistance to mechanical abuse.

MaxRope™ High Density Rope is made from multiple strands of ceramic fiber yarn formed into 3 plys and then twisted. This results in a higher density product which is more durable than standard twisted rope.

MaxBraid™ Round and Square are the highest density rope products offered. The ceramic fiber plys are braided to provide maximum resistance to mechanical abuse. Round Braid and Square Braid offer superior strength and exhibit minimal unraveling when cut.



## Technical Data

Temperature Grade  
Continuous Operating Temperature  
Sizes  
Shrinkage at 1800°F

2300°F (1260°C)  
2000°F (1093°C)  
1/4" to 2"  
1%

\*Cloth, Tape and Sleeveing are also available upon request



# people are our **strongest** resource

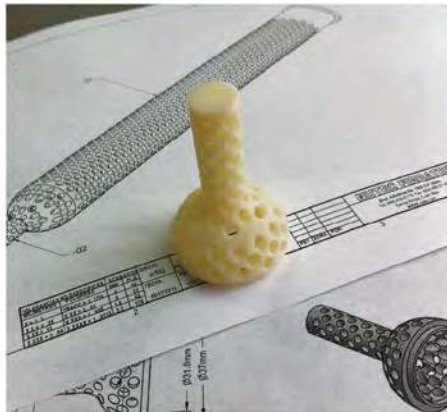
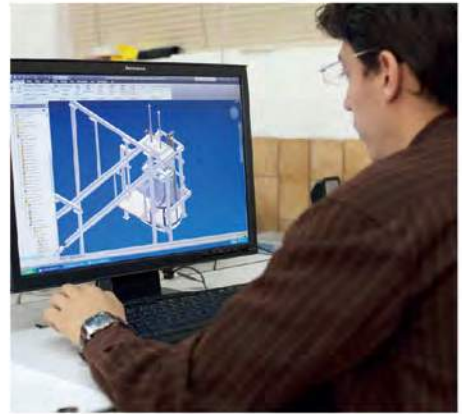
At Nutec™, we consider our people the real key to success. We are committed to developing talent and increasing the capabilities of our personnel. It is our firm belief that an engaged workforce throughout the organization creates a common goal that enhances our performance. Our objective is to exceed our customers' expectations.





# behind technology

Through training, combined with a safe workplace, we create a productive atmosphere. Employees are encouraged and empowered to give their very best for the benefit of our customers.





# worldwide presence



- 1 Ramos Arizpe, Mexico. Plant I
- 2 Ramos Arizpe, Mexico. Plant II
- 3 Ramos Arizpe, Mexico. Plant III
- 4 Sao Paulo, Brazil
- 5 Monterrey, Mexico
- 6 Bilbao, Spain



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# all over the world



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