205°C
195°C
185°C
175°C
165°C
155°C
145°C
135°C
125°C
115°C
105°C
95°C
85°C
75°C
65°C
55°C
45°C
35°C
25°C
15°C
5°C

DESIGNED TO TAKE THE HEAT

LIGHT AS A FEATHER

ZOTEK®

Closed-cell crosslinked polyamide (nylon) foams

ZOTEFOAMS
Thermal resistance compared to other foams ZOTEK® N has a significantly higher upper operating temperature limit. The exact limit depends on the application and duration of exposure. Thermal shrinkage at 205 deg °C can be less than 5% after 24 hours. This allows ZOTEK® N to be used in systems requiring high temperature processing such as composite cores or in line paint systems.

Thermal insulation

ZOTEK® N is excellent thermal insulator and will act as heat shield which can be further enhanced by the addition of aluminium layer.

See following charts and details.

A trial was carried out by attaching a 10mm block of Zotek NB50 with an extruder die in the lab. The die was set to 3 different temperatures and at each temperature the surface of the foam was measured with a thermocouple. The graph above shows the temperature variations.
THERMOFORMING / VACUUM FORMING

ZOTEK® N can be thermoformed and vacuum formed with excellent results providing temperature pre-soak guidelines are adhered toage and time between soaking and forming is minimized.

For ZOTEK® NB50 the optimum pre-soak and forming temperature is 245°C and for ZOTEK® NA30 220°C respectively. Heat forming systems differ and it is important to develop specific dwell and cooling times to suit individual part requirements including sizing.

Contact the Zotefoams Technical Team for advice about specific requirements.

BONDING

ZOTEK® N is compatible with most adhesive/resin systems. It has a totally closed fine cell structure and only the cells at the surface can fill with resin/adhesive avoiding unnecessary weight/adhesive consumption. Consult your adhesive/resin supplier for bonding systems suitable for use with Polyamide.

ZOTEK® N can also be ultrasonically bonded to substrates in less than a second.

MOISTURE AND PROCESS EFFECT

ZOTEK® N is an hygroscopic material being based on polyamide (nylon 6) and will absorb some moisture from the atmosphere. The material is supplied with a nominal moisture content that simulates the normal “conditioning” equilibrium. It may be necessary to consider this minor effect when considering processing and final application. Please contact us for specific recommendations.

N.B. The material should be stored in an ambient, inside location.

MACHINING

Zotek N can be shaped successfully using typical machining methods and equipment. Before processing ZOTEK® NB50, conditioning of the material is recommended.

ZOTEK® N - DesigneD TO Take The heaT

ZOTEK® N - High Temperature Advantage

(thermal shrinkage of 5% over 24hrs on test slab 100x100x25mm)
RECYCLABILITY

Our products can be recycled but not back into their original form as it is cross linked. Waste can be densified and reground with the exact percentages of material being fed back into specific waste/reuse streams and resultant material specifications subject to each individual application. Work is continuing to identify further opportunities.

CUSTOMER SUPPORT

A dedicated and highly trained and motivated sales and technical team is available to support and assist customers in all aspects of processing and application.

R.O.H.S & REACH

ZOTEK® N is full compliant with R.O.H.S & REACH requirements.

ZOTETOAMs
THE FOAM TECHNOLOGISTS
LIGHT WEIGHT
From 30kg/m³, ZOTEK® N materials offer many weight saving and energy saving advantages.

CHEMICAL RESISTANCE
Based on polyamide (nylon), ZOTEK® N has excellent general chemical resistance and is exceptionally resistant to hydrocarbons including fuels, oils, brake and power steering fluids, antifreeze, etc...

Specific requirements can be assessed by our technical team.

ACOUSTIC INSULATION
ZOTEK® N is a closed cell material with good noise, isolation and damping characteristics. It can be used in combination with other materials to optimise acoustic performance.

IMPACT/ENERGY ABSORPTION
ZOTEK® N has good kinetic mechanical energy absorption properties and provides little rebound when compared to other common foam materials.

ELECTRICAL CONDUCTIVITY
ZOTEK® NB50 has a typical surface resistance of $1 \times 10^{12}$ ohms which classifies the material as insulative according to the ESD Association.

ULTRA VIOLET RADIATION RESISTANCE
Being based on a polyamide material ZOTEK® N has naturally good UV resistance characteristics having minimal effect on tensile strength and elongation at break after 1000 hour exposure.

FLAMMABILITY
ZOTEK® N meets typical horizontal burn requirements of FMVSS302 above 4mm thickness. Specialist flame retardant grades are currently under development.
ZOTEFOMS

ZOTEK® N - High Temperature Polyamide (Nylon) Foams

APPLICATIONS
- Thermal insulation
- Heat shields
- Composite cores
- Tubes & Ducts
- Seals
- Gap fillers
- Acoustic insulation
- NVH energy absorbers
- Hot packaging

BENEFITS
- Temperature resistant
- Light weight
- Chemical resistant
- Thermoformable
- Machinable
- Energy absorbing
- UV resistant
- Consistent density
- Firm or flexible

FOR MORE INFORMATION PLEASE VISIT WWW.ZOTEFOMS.COM

ZOTEFOMS PLC,
675 Mitcham Road, Croydon, Surrey, CR9 3AL, UK
Tel: +44 (0) 20 8664 1600
Fax: +44 (0) 20 8664 1616
email: info@zotefoams.com quoting Zotek® N

ZOTEFOMS INC,
55 Precision Drive, Walton, Kentucky, 41094, USA
Tel: +1 859 371 4046 FREE: (800) 362-8358 (US Only)
Fax: +1 859 371 4734
email: custserv@zotefoams.com

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