HYTAC® - B1X

Tough Easily Machined Syntactic Tooling

Technical Bulletin

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Innovative Materials for Plug Assist

Overview

HYTAC-B1X is the first plug assist material to combine the toughness of engineering thermoplastics with the low thermal conductivity of a syntactic foam. Plug assists made from *HYTAC-B1X* will resist the chips and dings associated with production abuse while reducing mark-off and sticking of difficult to process polymers. *HYTAC-B1X* maintains the high thermal stability required to process today's thermoformed polymers. In addition, *HYTAC-B1X* eliminates the machining difficulties of conventional syntactic foams. ***This product does not produce dust during machining and finishing of plugs.***

- **High Toughness and Durability**

With high toughness, machine downtime due to damaged plugs is reduced. Less downtime = lower costs = more consistent quality.

- **Superb Machinability**

No dust collection equipment or respirators are required due to the large, non-abrasive chips. Plugs can be machined over three times faster than syntactic foam due to the easy chip formation. ***No more complaints from your machinists.***

- **Excellent Temperature Resistance**

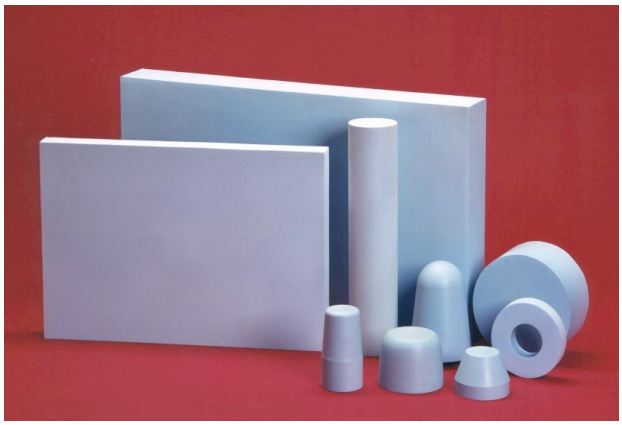
HYTAC–B1X is specially formulated for service up to 350°F with minimal loss in mechanical properties.

- **Variety of Shapes and Sizes**

The material is provided in standard sized rods or sheets, but may be custom molded to meet your specific needs.

Applications

HYTAC-B1X may be used in a wide variety of applications on sheet-fed, rotary, or in-line machines. It may also be used with most commonly thermoformed materials, and has proven quite effective with polypropylene and other polyolefins. **With PP** we will **guaranty better productivity** than any other syntactic.



Typical Properties

Property	*HYTAC-B1X*
Color	Light Blue
Density *(ρ)*	40-45 lb/ft^3 [640- 721 kg/m^3]
Thermal Conductivity *(k)*	0.11 BTU /hr-ft-°F [0.18 W/m°K]
Specific Heat *(C_p) per mass*	0.43 BTU/(lb•°F) [1.80 kJ/(kg•°C)]
Coefficient of Thermal Expansion *(CTE)*	34.3 x 10^{-6} in/in/°F [61 x 10^{-6} m/m/°C]
Compressive Strength	7,100 psi [49.2 Mpa]
Compressive Modulus	298 Ksi [2.05 Gpa]
Service Temperature	350 °F [180 °C]