

HYTAC[®] - B

High Performance Engineered Thermoplastic Tooling

Technical Bulletin



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Innovative Tooling Materials for Thermoforming

Overview

Sometimes, finer plug assist details are required which are not obtainable or maintainable with syntactic foam plugs. For these high detail applications, where high toughness and easy machinability are required, we have formulated a special blend of engineering thermoplastic polymer. Material removal from the blind side of the plug will result in thermal conductivity and overall heat absorption which approximate syntactic foam's excellent properties .

- **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.

- **Excellent Temperature Resistance**

HYTAC-B is specially formulated for service temperatures 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.

Applications

HYTAC 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, as well as some of the more exotic materials available today.



Typical Properties

Property	HYTAC-B
Color	Blue
Density (ρ)	70-74 lb/ft ³ [1150 kg/m ³]
Thermal Conductivity (k)	0.21 BTU /hr-ft-°F [0.373 W/m ² K]
Specific Heat (C_p) per mass	0.40 BTU/(lb•°F) [1.67 kJ/(kg•°C)]
Coefficient of Thermal Expansion (CTE)	37 x 10 ⁻⁶ in/in/°F [67 x 10 ⁻⁶ m/m/°C]
Compressive Strength	12,000 psi [83 MPa]
Compressive Modulus	400 Ksi [2.76 GPa]
Service Temperature	350 °F [180 °C]