

## Latrobe BG42® Stainless Knife Steel (AMS 5749)

Category : Metal , Ferrous Metal , Martensitic , Stainless Steel

### Material Notes:

LESCALLOY® BG42® VIM VAR is a double vacuum melted martensitic stainless high speed steel designed for critical aerospace structural components and high performance bearings. The steel is vacuum induction melted (VIM) and vacuum arc remelted (VAR) to provide the extremely high cleanliness level required for these fatigue-critical applications. When manufactured in sheet form, BG42 has proven to be an excellent knife steel. The very good wear resistance and corrosion resistance result in knife blades which exhibit excellent edge retention and long life. The molybdenum in the steel enhances the corrosion resistance provided by the high chromium content. In addition, the chromium, molybdenum, and vanadium contents provide approximately 19% carbide volume in the steel. This high carbide volume and the presence of very hard vanadium carbides enhance the wear resistance and edge retention of knife blades. The excellent edge retention and good corrosion resistance establish BG42 as an upgrade material compared to the Timken sold Latrobe in December 2006. They are now Latrobe Specialty Steels Co.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Latrobe-BG42-Stainless-Knife-Steel-AMS-5749.php](http://www.lookpolymers.com/polymer_Latrobe-BG42-Stainless-Knife-Steel-AMS-5749.php)

Physical Properties	Metric	English	Comments
Density	7.75 g/cc	0.280 lb/in <sup>3</sup>	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell C	59	59	Oil Quenched from 1149°C, 10 minutes
	59.5	59.5	Oil Quenched from 1066°C, 15 minutes
	62.5	62.5	Oil Quenched from 1093°C, 15 minutes
Modulus of Elasticity	180.6 GPa	26190 ksi	
	@Temperature 482 °C	@Temperature 900 °F	
Modulus of Rigidity	220.6 GPa	32000 ksi	
	@Temperature 22.2 °C	@Temperature 72.0 °F	
Modulus of Rigidity	70.4 GPa	10200 ksi	
	@Temperature 482 °C	@Temperature 900 °F	
Modulus of Rigidity	86.53 GPa	12550 ksi	
	@Temperature 22.2 °C	@Temperature 72.0 °F	
Poissons Ratio	0.27	0.27	
	@Temperature 22.2 °C	@Temperature 72.0 °F	

Mechanical Properties	Metric	English	Comments
Machinability	55 - 60 %	55 - 60 %	1% Carbon Steel

Thermal Properties	Metric	English	Comments
CTE, linear	9.81 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	5.45 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	
	@Temperature -73.3 - 21.1 $\text{Å}^\circ\text{C}$	@Temperature -100 - 70.0 $\text{Å}^\circ\text{F}$	
	11.0 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	6.13 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	
	@Temperature 21.1 - 149 $\text{Å}^\circ\text{C}$	@Temperature 70.0 - 300 $\text{Å}^\circ\text{F}$	
	12.3 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	6.85 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	
	@Temperature 21.1 - 538 $\text{Å}^\circ\text{C}$	@Temperature 70.0 - 1000 $\text{Å}^\circ\text{F}$	

Component Elements Properties	Metric	English	Comments
Carbon, C	1.15 %	1.15 %	
Chromium, Cr	14.5 %	14.5 %	
Iron, Fe	78.35 %	78.35 %	
Manganese, Mn	0.50 %	0.50 %	
Molybdenum, Mo	4.0 %	4.0 %	
Silicon, Si	0.30 %	0.30 %	
Vanadium, V	1.2 %	1.2 %	

## Contact Songhan Plastic Technology Co.,Ltd.

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