

ANVILOY® 1150

AN INNOVATIVE MATERIAL FOR DIE CASTING, TOOLING, AND ALUMINUM PERMANENT MOLD



LOWER OPERATING COST COMPARED TO H-13 TOOL STEEL

Anviloy® 1150 is a tungsten-based material that was developed primarily for die-casting, aluminum permanent mold, and difficult extrusions. To produce Anviloy® 1150 material, we use special high temperature powder metallurgy processes. A low coefficient of thermal expansion, good thermal conductivity and good material properties at elevated temperatures combine for superior performance in a variety of applications. This unusual combination of properties results in less thermal fatigue and soldering in the die cast or extrusion.

Tungsten has a high melting point and low coefficient of thermal expansion. We add other elements to the tungsten to enhance machinability, ductility and strength, which makes it Anviloy® 1150. Good thermal conductivity increases cooling in difficult to cool areas and can increase production rates. Material properties established during the production of Anviloy® eliminate the problems often associated with heat treatment of other standard tool materials.

Join the cutting-edge companies that are using Anviloy®! The innovative material, for die casting or extruding that will save you time and money.

APPLICATIONS

- » Die Cast Tooling
- » Extrusion Dies
- » Hot Runner Nozzles
- » Vibration and Tool Chatter Reduction
- » Plastic Injection Molding
- » High Elongation Requirements
- » Maximum Thermal Conductivity Needs
- » Shot Sleeves

BENEFITS

- » Minimizes heat checking (*thermal fatigue*)
- » Reduces soldering (*sticking*)
- » Faster cycle times
- » Less porosity in heavy sections
- » Less production downtime
- » Fewer rejects
- » Worn parts are easily re-machined into smaller diameter core pins or larger extrusion dies
- » Requires no pre-machining or post-machining heat treatment
- » Easily welded and repaired with Anviloy® Weld Rod
- » Low erosion rate
- » Provides additional cooling
- » Longer die and core life
- » Readily machinable
- » Better surface finishes on product
- » Lower cost per piece



www.anviloy.com



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TYPICAL ROOM TEMPERATURE MECHANICAL PROPERTIES

	ANVILOY® 1150	H-13
Ultimate Tensile Strength, psi (MPa)	140,000 (965)	233,000 (1610)
Yield Strength, 0.2% offset, psi (MPa)	125,000 (862)	192,000 (1320)
Elongation, % in 2 inches	3.0	13.1
Hardness, HRC	34	45
Modulus of Elasticity, psi x 10 ⁶ (GPa)	49.0 (338)	30.5 (210)

ELEVATED TEMPERATURE TENSILE PROPERTIES

UTS, psi (MPa) at 1000 °F (537°C)	113,000 (779)	142,000 (979)
UTS, psi (MPa) at 1200 °F (648°C)	105,000 (724)	85,000 (586)
UTS, psi (MPa) at 1500 °F (815°C)	75,000 (517)	20,500 (141)

COEFFICIENT OF THERMAL EXPANSION, °F (°C-1)

68 - 750 °F (20 - 400 °C)	2.52×10^{-6} (4.54×10^{-6})	6.8×10^{-6} (12.2×10^{-6})
68 - 1450 °F (20 - 790 °C)	2.92×10^{-6} (5.26×10^{-6})	7.5×10^{-6} (13.5×10^{-6})

THERMAL CONDUCTIVITY [W/m K] @500°C

	70.2	28.4
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DENSITY, lb/in³ (g/cm³)

	0.623 (17.25)	0.280 (7.76)
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Astaras, Inc. has been a leader in the tungsten industry since 2000, supplying North America with top quality private branded TIG tungsten electrodes as well as other products.

Working with our sister company Weldstone Rosenheim and utilizing the expertise of their managing directors Andreas Endemann and Thomas Hoehn that are known throughout the heavy metal industry as foremost experts the world over, it is our goal to become your partner, bringing you the solutions that your company requires to compete in today's market.

On April 7th 2014 Astaras acquired all rights and intellectual property to the ANVILOY® product line from the former CMW International Inc.

Ross Wayman former CMW sales manager was soon added to our team of heavy metal experts to serve as our sales manager for the Americas.

Our parent company the IBG Group from Cologne, Germany has been producing tungsten products for many years from their wholly owned manufacturing plant in Zibo, China. Recently the manufacturing facility was moved and expanded to a new state of the art plant in order to better serve our growing demands.



Our newly opened (May 2014) state-of-the-art manufacturing facility

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