

International Mold Steel NAK55 Precipitation Hardened Mold Steel

Category : Metal , Ferrous Metal , Tool Steel , Mold Steel

Material Notes:

Description: NAK55 is a precipitation, or age-hardened mold steel with a through hardness of approximately 40 HRc. NAK55 is ideal for use in plastic and rubber molds and other applications where impact resistance is not critical. It is a super clean, Vacuum-Arc Remelted steel with uniform grain structure, uniform hardness and excellent dimensional stability. Unique Characteristics: Vacuum-Arc Remelt manufacturing process. 40 HRc hardness. Uniform hardness throughout, even in heavy sections. When welded, NAK leaves no witness lines after re-aging. Uniform grain structure with no pin holes, inclusions or hard spots. Machines up to 50% faster than 30 HRc P20 mold steels. Never needs stress relieving, even after heavy machining. Information provided by International Mold Steel.

Order this product through the following link:

http://www.lookpolymers.com/polymer_International-Mold-Steel-NAK55-Precipitation-Hardened-Mold-Steel.php

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell C	40	40	
Tensile Strength, Ultimate	1250 MPa	182000 psi	
Tensile Strength, Yield	1010 MPa @Strain 0.200 %	146500 psi @Strain 0.200 %	
Elongation at Break	15.6 %	15.6 %	Elongation in 2" (longitudinal)
Reduction of Area	39.8 %	39.8 %	
Modulus of Elasticity	207 GPa @Temperature 23.0 Â°C	30000 ksi @Temperature 73.4 Â°F	
Charpy Impact	7.59 J	5.60 ft-lb	V-Notch, Transverse
	9.76 J	7.20 ft-lb	V-Notch, Longitudinal

Thermal Properties	Metric	English	Comments
CTE, linear	11.3 Âµm/m-Â°C @Temperature 20.0 - 100 Â°C	6.30 Âµin/in-Â°F @Temperature 68.0 - 212 Â°F	
	12.6 Âµm/m-Â°C @Temperature 20.0 - 200 Â°C	7.00 Âµin/in-Â°F @Temperature 68.0 - 392 Â°F	
	13.5 Âµm/m-Â°C @Temperature 20.0 - 300 Â°C	7.50 Âµin/in-Â°F @Temperature 68.0 - 572 Â°F	

Thermal Properties Thermal Conductivity	Metric	English	Comments
	41.33 W/m-K @Temperature 93.3 Â°C	286.8 BTU-in/hr-ftÂ²- Â°F	
	42.19 W/m-K @Temperature 204 Â°C	292.8 BTU-in/hr-ftÂ²- Â°F @Temperature 400 Â°F	

Component Elements Properties	Metric	English	Comments
Aluminum, Al	1.0 %	1.0 %	
Carbon, C	0.15 %	0.15 %	
Copper, Cu	1.0 %	1.0 %	
Iron, Fe	92.95 %	92.95 %	
Manganese, Mn	1.5 %	1.5 %	
Nickel, Ni	3.0 %	3.0 %	
Silicon, Si	0.30 %	0.30 %	
Sulfur, S	0.10 %	0.10 %	

Electrical Properties	Metric	English	Comments
Magnetic Permeability	<= 380	<= 380	
Magnetic Coercive Force, Hc	14 Oe	14 Oe	
Magnetic Saturation Flux Density, Bmax	16350 Gauss	16350 Gauss	Saturate Magnetism
Magnetic Remanence, Br	8500 Gauss	8500 Gauss	Residual Magnetism

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