

## International Mold Steel NAK80 Precipitation Hardened Mold Steel

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

### Material Notes:

Description: NAK80 is a precipitation or age-hardened mold steel with a uniform through hardness of approximately 40 HRC. It is super clean, Vacuum-Arc Remelted steel with uniform grain structure, uniform hardness, and excellent dimensional stability. Unique Characteristics: Super clean, Vacuum-Arc Remelt manufacturing process. 40 HRC hardness. Age-hardened for uniformity of 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 20% faster than 30 HRC P20 mold steels. Never needs stress relieving, even after heavy machining. Polishes to a superior No. 1 finish, even over welded areas. Applications: Clear lens molds Extremely critical diamond finish applications Molds requiring special EDM finish Information provided by International Mold Steel.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_International-Mold-Steel-NAK80-Precipitation-Hardened-Mold-Steel.php](http://www.lookpolymers.com/polymer_International-Mold-Steel-NAK80-Precipitation-Hardened-Mold-Steel.php)

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell C	40	40	
Tensile Strength, Ultimate	1264 MPa	183400 psi	
Tensile Strength, Yield	1018 MPa @Strain 0.200 %	147600 psi @Strain 0.200 %	
Elongation at Break	16.1 %	16.1 %	Elongation in 2" (longitudinal)
Reduction of Area	41.9 %	41.9 %	
Modulus of Elasticity	207 GPa @Temperature 23.0 Â°C	30000 ksi @Temperature 73.4 Â°F	
Charpy Impact	11.0 J	8.10 ft-lb	V-Notch, Longitudinal
	11.5 J	8.50 ft-lb	V-Notch, Transverse

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

Thermal Properties	300 °C Metric	572 °F English	Comments
Thermal Conductivity	41.33 W/m-K @Temperature 93.3 °C	286.8 BTU-in/hr-ft <sup>2</sup> - °F @Temperature 200 °F	
	42.19 W/m-K @Temperature 204 °C	292.8 BTU-in/hr-ft <sup>2</sup> - °F @Temperature 400 °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	93.05 %	93.05 %	
Manganese, Mn	1.5 %	1.5 %	
Nickel, Ni	3.0 %	3.0 %	
Silicon, Si	0.30 %	0.30 %	

Electrical Properties	Metric	English	Comments
Magnetic Permeability	<= 380	<= 380	
Magnetic Coercive Force, Hc	14 Oe	14 Oe	
Magnetic Saturation Flux Density, Bmax	16360 Gauss	16360 Gauss	Saturate Magnetism
Magnetic Remanence, Br	8500 Gauss	8500 Gauss	Residual Magnetism

## Contact Songhan Plastic Technology Co.,Ltd.

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