

International Mold Steel Premium H13 Hot Work Die and Mold Steel

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

Material Notes:

Description: International Mold Steel's Premium H-13 is a chromium-based, hot work die and plastic mold steel designed for increased production rates and longer tool life. It meets the restrictive standards of the North American Die Casting Association and other industrial specifications such as Chrysler's NP2080 for die casting applications. International Mold Steel's Premium H-13 is used for extended production runs that focus on reliability and consistency in the die or mold steel to minimize costly downtime. The manufacture of this die and mold steel begins with exacting chemistry control including very low sulfur level to increase toughness properties and resistance to heat checking. It is remelted to optimize steel integrity followed by special thermal processing for the development of homogeneous microstructure with uniformly distributed carbides. This provides the die caster or molder with outstanding ductility throughout large sections, which is essential to resist cleavage cracking under more demanding operating conditions.

Unique Characteristics: Thermal shock and fatigue resistant Meets NADCA, Chrysler and Mold Quality specifications Superior machinability and polishability.

Applications: Aluminum extrusion , Die-casting inserts, Bending , Ejector pins, Die casting , Extrusion rams, Forging , Extrusion press liners, Gripper , Hot piercers, Hot heading , Hot shears, Hot press , Hot work mandrels, Hot trimmer , Hot work punches, Plastic mold , Plungers, Rivet Swaging , Sleeves slides

Information provided by International Mold Steel.

Order this product through the following link:

http://www.lookpolymers.com/polymer_International-Mold-Steel-Premium-H13-Hot-Work-Die-and-Mold-Steel.php

Physical Properties	Metric	English	Comments
Specific Gravity	7.761 g/cc	7.761 g/cc	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell C	46	46	
Tensile Strength, Ultimate	1500 MPa	218000 psi	
Tensile Strength, Yield	1410 MPa	204000 psi	
Elongation at Break	13 %	13 %	Elongation in 2"
Reduction of Area	47 %	47 %	
Modulus of Elasticity	207 GPa	30000 ksi	at RT
Machinability	70 %	70 %	of a 1% Carbon tool steel (annealed), which has a rating of 60% of B1112 Bessemer screw stock
Izod Impact	27.0 J	19.9 ft-lb	
	@Temperature 22.0 Â°C	@Temperature 71.6 Â°F	
	37.0 J	27.3 ft-lb	
	@Temperature 149 Â°C	@Temperature 300 Â°F	

Mechanical Properties	Metric	English	Comments
	@Temperature 371 Â°C	@Temperature 700 Â°F	
Charpy Impact	25.8 J	19.0 ft-lb	V-Notch

Thermal Properties	Metric	English	Comments
CTE, linear	10.4 Âµm/m-Â°C	5.80 Âµin/in-Â°F	
	@Temperature 26.7 - 93.3 Â°C	@Temperature 80.0 - 200 Â°F	
	11.3 Âµm/m-Â°C	6.30 Âµin/in-Â°F	
	@Temperature 26.7 - 204 Â°C	@Temperature 80.0 - 400 Â°F	
	12.4 Âµm/m-Â°C	6.90 Âµin/in-Â°F	
	@Temperature 26.7 - 427 Â°C	@Temperature 80.0 - 800 Â°F	
Thermal Conductivity	17.6 W/m-K	122 BTU-in/hr-ftÂ²-Â°F	
	@Temperature 27.0 Â°C	@Temperature 80.6 Â°F	
	23.4 W/m-K	162 BTU-in/hr-ftÂ²-Â°F	
	@Temperature 204 Â°C	@Temperature 399 Â°F	
	26.8 W/m-K	186 BTU-in/hr-ftÂ²-Â°F	
	@Temperature 649 Â°C	@Temperature 1200 Â°F	

Component Elements Properties	Metric	English	Comments
Carbon, C	0.40 %	0.40 %	
Chromium, Cr	5.25 %	5.25 %	
Iron, Fe	90.6 %	90.6 %	
Manganese, Mn	0.40 %	0.40 %	
Molybdenum, Mo	1.35 %	1.35 %	
Silicon, Si	1.0 %	1.0 %	
Vanadium, V	1.0 %	1.0 %	

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