

International Mold Steel DH21 Die Cast & Forging Steel

Category : Metal , Ferrous Metal , Tool Steel

Material Notes:

DH21 is for aluminum die cast dies. Information provided by International Mold Steel

Order this product through the following link:

http://www.lookpolymers.com/polymer_International-Mold-Steel-DH21-Die-Cast-Forging-Steel.php

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	<= 229	<= 229	
Hardness, Rockwell C	<= 53	<= 53	
Hardness, Vickers	300	300	
	@Temperature 316 Â°C	@Temperature 600 Â°F	
	400	400	
	@Temperature 204 Â°C	@Temperature 400 Â°F	
	410	410	
	@Temperature 93.3 Â°C	@Temperature 200 Â°F	
Tensile Strength, Ultimate	500	500	
	@Temperature -3.89 Â°C	@Temperature 25.0 Â°F	
	950 MPa	138000 psi	
	@Temperature 600 Â°C	@Temperature 1110 Â°F	
	1350 MPa	196000 psi	
	@Temperature 400 Â°C	@Temperature 752 Â°F	
Tensile Strength, Yield	1590 MPa	231000 psi	
	@Temperature 200 Â°C	@Temperature 392 Â°F	
	1610 MPa	234000 psi	
	@Temperature 25.0 Â°C	@Temperature 77.0 Â°F	
	410 MPa	59500 psi	
	@Temperature 316 Â°C	@Temperature 600 Â°F	
Tensile Strength, Yield	1200 MPa	174000 psi	
	@Temperature 204 Â°C	@Temperature 400 Â°F	

Mechanical Properties	Metric	English	psi	Comments
	1350 MPa @Temperature 93.3 Â°C			@Temperature 200 Â°F
	1500 MPa @Temperature -3.89 Â°C	218000 psi		@Temperature 25.0 Â°F
Elongation at Yield	12 % @Temperature -3.89 Â°C	12 %		@Temperature 25.0 Â°F
	13 % @Temperature 93.3 Â°C	13 %		@Temperature 200 Â°F
	15 % @Temperature 204 Â°C	15 %		@Temperature 400 Â°F
	21 % @Temperature 316 Â°C	21 %		@Temperature 600 Â°F
Reduction of Area	52 % @Temperature -3.89 Â°C	52 %		@Temperature 25.0 Â°F
	53 % @Temperature 93.3 Â°C	53 %		@Temperature 200 Â°F
	55 % @Temperature 204 Â°C	55 %		@Temperature 400 Â°F
	65 % @Temperature 316 Â°C	65 %		@Temperature 600 Â°F
Charpy Impact Unnotched	50.0 J/cmÂ² @Temperature -3.89 Â°C	238 ft-lb/inÂ²		@Temperature 25.0 Â°F
	70.0 J/cmÂ² @Temperature 93.3 Â°C	333 ft-lb/inÂ²		@Temperature 200 Â°F
	80.0 J/cmÂ² @Temperature 204 Â°C	381 ft-lb/inÂ²		@Temperature 400 Â°F
	85.0 J/cmÂ²	405 ft-lb/inÂ²		

Mechanical Properties	@Temperature 316 Å°C Metric	@Temperature 600 Å°F English	Comments
CTE, linear	11.0 Åµm/m-Å°C	6.11 Åµin/in-Å°F	
	@Temperature >=100 Å°C	@Temperature >=212 Å°F	
	11.8 Åµm/m-Å°C	6.56 Åµin/in-Å°F	
	@Temperature >=300 Å°C	@Temperature >=572 Å°F	
Thermal Conductivity	12.4 Åµm/m-Å°C	6.89 Åµin/in-Å°F	
	@Temperature >=500 Å°C	@Temperature >=932 Å°F	
	13.1 Åµm/m-Å°C	7.28 Åµin/in-Å°F	
	@Temperature >=700 Å°C	@Temperature >=1290 Å°F	
Thermal Conductivity	27.6 W/m-K	192 BTU-in/hr-ftÅ²-Å°F	
	@Temperature 25.0 Å°C	@Temperature 77.0 Å°F	
	29.3 W/m-K	203 BTU-in/hr-ftÅ²-Å°F	
	@Temperature 400 Å°C	@Temperature 752 Å°F	
Thermal Conductivity	29.3 W/m-K	203 BTU-in/hr-ftÅ²-Å°F	
	@Temperature 600 Å°C	@Temperature 1110 Å°F	
Thermal Conductivity	31.0 W/m-K	215 BTU-in/hr-ftÅ²-Å°F	
	@Temperature 200 Å°C	@Temperature 392 Å°F	

Component Elements Properties	Metric	English	Comments
Carbon, C	0.39 %	0.39 %	
Chromium, Cr	5.0 %	5.0 %	
Iron, Fe	>= 88.61 %	>= 88.61 %	
Manganese, Mn	<= 1.5 %	<= 1.5 %	
Molybdenum, Mo	2.0 %	2.0 %	
Silicon, Si	<= 1.5 %	<= 1.5 %	
Vanadium, V	1.0 %	1.0 %	

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