

Assab Steels ASP 60 Cold Work Steel

Category : Metal , Ferrous Metal , Tool Steel , Cold Work Steel

Material Notes:

ASP 60 is a W-Mo-V-Co alloyed PM high speed steel characterized by: Highest wear resistance Maximum compressive strength Good through hardening properties Good toughness Good dimensional stability on heat treatment Very good temper resistance W.-Nr. 1.3241

Order this product through the following link:

http://www.lookpolymers.com/polymer_Assab-Steels-ASP-60-Cold-Work-Steel.php

Physical Properties	Metric	English	Comments
Density	7.89 g/cc	0.285 lb/in ³	soft annealed condition
	7.78 g/cc	0.281 lb/in ³	soft annealed condition
	@Temperature 600 °C	@Temperature 1110 °F	
Density	7.83 g/cc	0.283 lb/in ³	soft annealed condition
	@Temperature 400 °C	@Temperature 752 °F	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell C	62	62	Final Hardness after tempering 3 times for one hour at 560°C (1040°F). Austenitizing temperature 960°C (1760°F). ±1 HRC
	64	64	Final Hardness after tempering 3 times for one hour at 560°C (1040°F). Austenitizing temperature 1000°C (1832°F). ±1 HRC
	66	66	Final Hardness after tempering 3 times for one hour at 560°C (1040°F). Austenitizing temperature 1070°C (1960°F). ±1 HRC
	68	68	Final Hardness after tempering 3 times for one hour at 560°C (1040°F). Austenitizing temperature 1150°C (2102°F). ±1 HRC
	69	69	Final Hardness after tempering 3 times for one hour at 560°C (1040°F). Austenitizing temperature 1180°C (2156°F). ±1 HRC
	60.5	60.5	Hot Hardness. Austenitizing temperature: 1100°C (2010°F).
	@Temperature 500 °C	@Temperature 932 °F	
	62	62	Hot Hardness. Austenitizing temperature: 1180°C (2160°F).
	@Temperature 500 °C	@Temperature 932 °F	
	65.5	65.5	Hot Hardness. Austenitizing

Mechanical Properties	Metric @ Temperature 100 °C	English @ Temperature 212 °F	Comments temperature: 1100°C (2010°F).
	67 @Temperature 100 °C	67 @Temperature 212 °F	Hot Hardness. Austenitizing temperature: 1180°C (2160°F).
	66 @Diameter 5.00 mm	66 @Diameter 0.197 in	Four point bend testing. 5mm/min. Austenitizing temperature: 1050°C Tempering: 3X1 h at 560°C, AC
	68 @Diameter 5.00 mm	68 @Diameter 0.197 in	Four point bend testing. 5mm/min. Austenitizing temperature: 1050°C Tempering: 3X1 h at 560°C, AC
Modulus of Elasticity	250 GPa	36300 ksi	
	200 GPa @Temperature 400 °C	29000 ksi @Temperature 752 °F	
Flexural Strength	2500 MPa	363000 psi	
	3200 MPa	464000 psi	
	3500 MPa	508000 psi	
	3800 MPa	551000 psi	
	4500 MPa	653000 psi	

Thermal Properties	Metric	English	Comments
CTE, linear	10.6 µm/m-°C @Temperature 20.0 - 400 °C	5.89 µin/in-°F @Temperature 68.0 - 752 °F	for the hardened and tempered condition
	11.1 µm/m-°C @Temperature 20.0 - 600 °C	6.17 µin/in-°F @Temperature 68.0 - 1110 °F	for the hardened and tempered condition
Specific Heat Capacity	0.418 J/g-°C @Temperature 20.0 °C	0.100 BTU/lb-°F @Temperature 68.0 °F	hardened and tempered condition
	0.502 J/g-°C @Temperature 400 °C	0.120 BTU/lb-°F @Temperature 752 °F	hardened and tempered condition
	0.586 J/g-°C @Temperature 600 °C	0.140 BTU/lb-°F @Temperature 1110 °F	hardened and tempered condition
Thermal Conductivity	21.0 W/m-K @Temperature 20.0 °C	146 BTU-in/hr-ft²-°F @Temperature 68.0 °F	hardened and tempered condition

Thermal Properties	Metric	English	Comments
	24.0 W/m-K @Temperature 600 °C	167 BTU-in/hr-ft ² -°F @Temperature 1110 °F	and tempered condition
	25.0 W/m-K @Temperature 400 °C	174 BTU-in/hr-ft ² -°F @Temperature 752 °F	hardened and tempered condition

Component Elements Properties	Metric	English	Comments
Carbon, C	2.3 %	2.3 %	
Chromium, Cr	4.2 %	4.2 %	
Cobalt, Co	10.5 %	10.5 %	
Iron, Fe	63 %	63 %	
Molybdenum, Mo	7.0 %	7.0 %	
Tungsten, W	6.5 %	6.5 %	
Vanadium, V	6.5 %	6.5 %	

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