

ASP® AND HIGH SPEED STEEL GUIDE

| | GRADES | | CORRESPONDING STANDARDS | | | | ANALYSIS, % | | | | | HARDNESS, HB* | CHARACTERISTICS AND APPLICATIONS |
|-----------------------------|---------------|--------------|-------------------------|-----------|------|------|-------------|------|------|------|---|--|----------------------------------|
| | ERASTEEL | USA AISI | Europe | DIN W.Nr. | C | Cr | Mo | W | Co | V | soft annealed | | |
| ASP®, without Cobalt | ASP 2004 | M4 | - | - | 1.40 | 4.2 | 5.0 | 5.8 | - | 4.1 | 265 | Good wear resistance and hardness. | |
| | ASP 2005 | - | PMHS 3-3-4 | 1.3377 | 1.50 | 4.0 | 2.5 | 2.5 | - | 4.0 | 250 | Good wear resistance and toughness. | |
| | ASP 2009 | V9% | - | - | 1.90 | 5.25 | 1.3 | - | - | 9.10 | 250 | Wear resistance and toughness for plastics extrusion. | |
| | ASP 2011 | (A11) | - | - | 2.45 | 5.25 | 1.3 | - | - | 9.75 | 280 | V-alloyed with abrasion resistance. | |
| | ASP 2012* | - | PMHS 2-2-2 | 1.3397 | 0.60 | 4.0 | 2.0 | 2.1 | - | 1.5 | 230 | Very high toughness for hot and cold work. | |
| | ASP 2023 | (M3:2) | PMHS 6-5-3C | 1.3395 | 1.28 | 4.0 | 5.0 | 6.4 | - | 3.1 | 260 | Non-Co-grade for cold work and cutting tools. | |
| | ASP 2053 | - | PMHS 4-3-8 | 1.3352 | 2.48 | 4.2 | 3.1 | 4.2 | - | 8.0 | 300 | V-alloyed grade for abrasive wear resistance. | |
| ASP 2062 | M62 | - | - | 1.30 | 3.75 | 10.5 | 6.25 | - | 2.0 | 290 | High red hardness, good abrasive wear resistance. | | |
| ASP®, with Cobalt | ASP 2015 | (T15) | PMHS 12-0-5-5 | 1.3251 | 1.60 | 4.0 | - | 12.0 | 5.0 | 5.0 | 280 | High W-alloyed grade for high performance. | |
| | ASP 2030° | - | PMHS 6-5-3-8 | 1.3294 | 1.28 | 4.2 | 5.0 | 6.4 | 8.5 | 3.1 | 290 | Co-grade for high performance. | |
| | ASP 2042 | M42 | PMHS 2-9-1-8 | ~1.3247 | 1.08 | 3.8 | 9.4 | 1.5 | 8.0 | 1.2 | 280 | Co-grade for bi-metal bandsaws. | |
| | ASP 2048° | M48 | - | - | 1.50 | 3.75 | 5.25 | 9.75 | 8.50 | 3.10 | 300 | High alloyed for high performance cutting tools. | |
| | ASP 2051 | M51 | PMHS10-4-3-10 | ~1.3207 | 1.27 | 4.0 | 3.6 | 9.5 | 10.0 | 3.2 | 280 | For bimetal bandsaws, with excellent wear resistance and toughness | |
| | ASP 2052 | - | PMHS 11-2-5-8 | 1.3253 | 1.60 | 4.8 | 2.0 | 10.5 | 8.0 | 5.0 | 300 | High W-alloyed grade for high performance. | |
| | ASP 2055 | - | - | - | 1.69 | 4.0 | 4.6 | 6.3 | 9.0 | 3.2 | 320 | 2.1% Nb. High alloyed Co-grade. | |
| | ASP 2060 | - | PMHS 7-7-7-11 | 1.3292 | 2.30 | 4.2 | 7.0 | 6.5 | 10.5 | 6.5 | 345 | For both hot hardness and wear resistance. | |
| | ASP 2078* | - | PMHS 7-7-6-11S | ~1.3292 | 2.30 | 4.2 | 7.0 | 6.5 | 10.5 | 6.5 | 345 | High performance grade with improved machinability. | |
| | ASP 2190 | - | - | - | 0.78 | 4.2 | 2.9 | 2.9 | 2.9 | 1.1 | 400 | High performance high Co grade for PVD coated gear cutting tools. | |
| Martensitic Stainless Steel | ASP APZ10 | - | - | - | 1.15 | 19.0 | 2.1 | - | - | 0.8 | 280 | Good corrosion and wear resistance | |
| BlueTap® | BlueTap® Co | M35 | HS 6-5-2-5 | 1.3243 | 0.93 | 4.2 | 5.0 | 6.4 | 4.8 | 1.8 | 255 | Grade for taps with an excellent grindability. | |
| | E M50 | M50 | HS 0-4-1 | 1.3325 | 0.84 | 4.0 | 4.2 | - | - | 1.1 | 225 | Low alloyed grade for "do-it-yourself" drills. | |
| | E M2 | M2 | HS 6-5-2 | 1.3343 | 0.90 | 4.2 | 5.0 | 6.4 | - | 1.8 | 250 | Grade for general applications, rolls included. | |
| | ABC III | - | HS 3-3-2 | 1.3333 | 0.99 | 4.1 | 2.7 | 2.8 | - | 2.4 | 220 | Grade for metal saws and wear parts. | |
| | E M3:2 | M3:2 | HS 6-5-3 | 1.3344 | 1.20 | 4.1 | 5.0 | 6.2 | - | 3.0 | 255 | M2 upgraded for higher wear resistance. | |
| | Grindamax™ V3 | - | HS 7-5-3 | 1.3347 | 1.20 | 3.9 | 5.2 | 7.0 | - | 2.7 | 265 | Grade with excellent grindability, for taps. | |
| | EM4 | M4 | HS 6-5-4 | 1.3351 | 1.30 | 4.2 | 4.5 | 5.6 | - | 4.0 | 250 | High wear resistance for cold forming and rolls | |
| HSS, without Cobalt | E M35 | M35 | HS 6-5-2-5 | 1.3243 | 0.93 | 4.2 | 5.0 | 6.4 | 4.8 | 1.8 | 260 | Grade for general applications. | |
| | C8 | - | HS 5-6-2-8 | 1.3209 | 1.05 | 4.0 | 6.0 | 5.0 | 7.8 | 1.6 | 270 | 8% Co-grade with improved hot hardness. | |
| | E MAT II | - | HS 1-5-1-8 | 1.3270 | 0.72 | 4.0 | 5.0 | 1.0 | 8.0 | 1.0 | 240 | Grade for bi-metal saws with good toughness. | |
| | E M42 | M42 | HS 2-9-1-8 | 1.3247 | 1.08 | 3.8 | 9.4 | 1.5 | 8.0 | 1.2 | 270 | Co-grade for cutting and bi-metal bandsaws. | |
| | WKE 42 | M51 | HS 10-4-3-10 | 1.3207 | 1.27 | 4.0 | 3.6 | 9.5 | 10.0 | 3.2 | 280 | Grade similar to M42 more wear resistance. | |
| HSS, with Cobalt | E M35 | M35 | HS 6-5-2-5 | 1.3243 | 0.93 | 4.2 | 5.0 | 6.4 | 4.8 | 1.8 | 260 | Grade for general applications. | |
| | C8 | - | HS 5-6-2-8 | 1.3209 | 1.05 | 4.0 | 6.0 | 5.0 | 7.8 | 1.6 | 270 | 8% Co-grade with improved hot hardness. | |
| | E MAT II | - | HS 1-5-1-8 | 1.3270 | 0.72 | 4.0 | 5.0 | 1.0 | 8.0 | 1.0 | 240 | Grade for bi-metal saws with good toughness. | |
| | E M42 | M42 | HS 2-9-1-8 | 1.3247 | 1.08 | 3.8 | 9.4 | 1.5 | 8.0 | 1.2 | 270 | Co-grade for cutting and bi-metal bandsaws. | |
| WKE 42 | M51 | HS 10-4-3-10 | 1.3207 | 1.27 | 4.0 | 3.6 | 9.5 | 10.0 | 3.2 | 280 | Grade similar to M42 more wear resistance. | | |

*Typical soft annealed hardness is... / Cold drawn or cold rolled material is typically 10-40 HB harder

* ASP 2012 Si 1.0%, Mn 0.3%; *ASP 2078 S 0.23; ° also available with sulfur

Comparative Properties

Machinability, annealed

Wear resistance

Toughness

Hot hardness

Grindability



*ASP 2012 Si 1.0%, Mn 0.3% ; *ASP 2078 S 0.23

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