

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	cold rolled or drawn	
ASP®, without Cobalt	ASP 2004	(M4)	PMHS 6-5-4	1.3361	1.40	4.2	5.0	5.8	-	4.1	260	300	Good wear resistance and hardness.
	ASP 2005	-	PMHS 3-3-4	1.3377	1.50	4.0	2.5	2.5	-	4.0	260	310	Good wear resistance and toughness.
	ASP 2011	(A11)	-	-	2.45	5.25	1.3	-	-	9.75	280	320	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	4.1	5.0	6.4	-	3.1	260	320	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	340	V-alloyed grade for abrasive wear resistance.
ASP®, with Cobalt	ASP 2015	(T15)	PMHS 12-0-5-5	1.3251	1.55	4.0	-	12.0	5.0	5.0	280	300	High W-alloyed grade for high performance.
	ASP 2017	-	PMHS 3-3-1-8	1.3288	0.80	4.0	3.0	3.0	8.0	1.0	260	320	1% Nb. High toughness and grindability.
	ASP 2030	-	PMHS 6-5-3-8	1.3294	1.28	4.2	5.0	6.4	8.5	3.1	300	320	Co-grade for high performance.
	ASP 2052	-	PMHS 11-2-5-8	1.3253	1.60	4.8	2.0	10.5	8.0	5.0	300	320	High W-alloyed grade for high performance.
	ASP 2055	-	-	-	1.69	4.0	4.6	6.3	9.0	3.2	320	340	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	340	-	For both hot hardness and wear resistance.
HSS, without Cobalt	E T1	T1	HS 18-0-1	1.3355	0.75	4.1	-	18.0	-	1.1	270	320	W-alloyed grade for knives.
	E M1	M1	HS 2-9-1	1.3346	0.83	3.8	8.5	1.8	-	1.2	260	310	Mo-grade for taps, twist drills, dies and rolls.
	E M50	M50	HS 0-4-1	1.3325	0.84	4.0	4.2	-	-	1.1	260	300	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	260	310	Grade for general applications, rolls included.
	ABC III	-	HS 3-3-2	1.3333	0.99	4.1	2.7	2.8	-	2.4	250	320	Grade for metal saws and wear parts.
	E M7	M7	HS 2-9-2	1.3348	1.02	3.8	8.6	1.8	-	1.9	260	310	Grade for twist drills, taps, end mills, etc.
	E M3:1	M3:1	HS 6-6-2	1.3350	1.05	4.0	6.3	6.3	-	2.5	280	320	Grade for bi-metal and hole saws.
	E M3:2	M3:2	HS 6-5-3	1.3344	1.20	4.1	5.0	6.2	-	3.0	270	320	M2 upgraded for higher wear resistance.
	Grindamax™ V3	-	HS 7-5-3	1.3347	1.20	3.9	5.2	7.0	-	2.7	270	320	Grade with excellent grindability, for taps.
	E M4	M4	HS 6-5-4	1.3351	1.30	4.2	4.5	5.6	-	4.0	280	320	Excellent wear resistance, for cold forming.
HSS, with Cobalt	Actium™ 74 Co	-	-	-	0.90	3.9	2.75	6.0	2.0	1.0	260	310	Low alloyed grade for "do-it-yourself" drills.
	E M35	M35	HS 6-5-2-5	1.3243	0.93	4.2	5.0	6.4	4.8	1.8	270	320	Grade for general applications.
	C8	-	HS 5-6-2-8	1.3209	1.05	4.0	6.0	5.0	7.8	1.6	280	320	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	270	300	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	280	320	Co-grade for cutting and bi-metal bandsaws.
	BiMax42+	M42	HS 2-9-1-8	1.3247	1.08	3.8	9.4	1.5	8.0	1.2	280	320	Co-grade for bi-metal bandsaws.
	WKE 42	-	HS 10-4-3-10	1.3207	1.27	4.0	3.6	9.5	10.0	3.2	300	350	Grade similar to M42 more wear resistance.
	WKE 45	-	HS 9-4-3-11	1.3208	1.41	4.2	3.6	8.8	11.0	3.4	300	350	High alloyed grade for special tools.

* ASP 2012 Si 1.0%; Mn 0.3%

Comparative Properties

