

## UDDEHOLM and BOHLER TOOLING MATERIALS

Products	AISI	Color Code	Typical Analysis							
<b>Cold Work Steels *</b>			<b>C</b>	<b>Si</b>	<b>Mn</b>	<b>Cr</b>	<b>Mo</b>	<b>W</b>	<b>V</b>	<b>S</b>
AISI O1	O1	Yellow	0.95	0.3	1.1	0.6		0.6	0.1	
AISI A2	A2	Red/green	1.0	0.3	0.6	5.3	1.1		0.2	
AISI D2	D2	Yellow/white	1.55	0.3	0.4	11.8	0.8		0.8	
AISI M2	M2	Copper	0.82	0.35	0.25	4.2	5.0	6.2	2.0	
BOHLER K340 ISODUR	—	Blue	1.10	0.90	0.40	8.30	2.10		0.50	+Al, +Nb
COMPAX SUPREME from Uddeholm	S7, improved	Blue/white	0.53	0.3	0.7	3.2	1.5			0.005 max
VANADIS 4 from Uddeholm †	—	Green/white	1.5	1.0	0.4	8.0	1.5		4.0	
VANADIS 6 from Uddeholm †	—	Green/dark green	2.1	1.0	0.4	6.8	1.5		5.4	
VANADIS 10 from Uddeholm †	—	Green/violet	2.9	1.0	0.5	8.0	1.5		9.8	
VANADIS 30 from Uddeholm †	M3:2 + Co	Green	1.28	0.5	0.3	4.2	5.0	6.4	3.1	8.5
VANADIS 60 from Uddeholm †	—	Gold	2.3	0.5	0.3	4.2	7.0	6.5	6.5	10.5
<b>Hot Work Steels</b>			<b>C</b>	<b>Si</b>	<b>Mn</b>	<b>Cr</b>	<b>Mo</b>	<b>W</b>	<b>V</b>	<b>S</b>
ORVAR 2M from Uddeholm/AISI H13	H13	Orange/violet	0.39	1.0	0.4	5.3	1.3		0.9	
ORVAR SUPREME from Uddeholm	H13, improved	Orange	0.38	1.0	0.4	5.2	1.4		0.9	0.003 max
BOHLER W302 ISOBLOC	H13, improved	Green/white stripe	0.39	1.1	0.4	5.2	1.4		0.95	0.003 max
QRO 90 SUPREME from Uddeholm	—	Orange/brown	0.38	0.3	0.75	2.6	2.25		0.9	
DIEVAR from Uddeholm	—	Gray/yellow	Cr-Mo-V Hot Work Steel							
ALVAR 14 from Uddeholm	—	White/black	.55	.25	.8	1.1	0.5	1.6	0.1	
VANADIS 23 from Uddeholm †	M3:2	Violet	1.28	0.5	0.3	4.2	5.0	6.4	3.1	
<b>Mold Steels</b>			<b>C</b>	<b>Si</b>	<b>Mn</b>	<b>Cr</b>	<b>Mo</b>	<b>Ni</b>	<b>V</b>	<b>S</b>
IMPAX SUPREME from Uddeholm	P20, modified	Yellow/green	0.37	0.3	1.4	2.0	0.2	1.0		0.01 max
COMPAX SUPREME from Uddeholm	S7, improved	Blue/white	0.53	0.3	0.7	3.2	1.5			0.005 max
ORVAR SUPREME from Uddeholm	H13, improved	Orange	0.38	1.0	0.4	5.2	1.4		0.9	0.003 max
BOHLER W302 ISOBLOC	H13, improved	Green/white stripe	0.38	1.0	0.4	5.2	1.4		0.9	0.003 max
STAVAX ESR from Uddeholm	420, modified	Orange/black	0.38	0.9	0.5	13.6			0.3	
OPTIMAX from Uddeholm	420, modified	Green/black	0.38	0.9	0.5	13.6			0.3	
ELMAX from Uddeholm †	—	Blue/black	1.7	0.8	0.3	18.0	1.0		3.0	
CORRAX from Uddeholm	—	Black/silver	0.03	0.3	0.3	12.0	1.4	9.2	Al 1.6	
PREMIUM P-20 **	P20, modified	Green/blue	0.4	0.3	1.4	2.0	0.2	1.0		
BOHLER M310/420, modified	420, modified	Red/blue	0.41	0.7	0.45	14.3	0.6		0.2	
<b>Products</b>			<b>Typical Analysis</b>							
<b>Other Mold Materials</b>			<b>Be</b>	<b>Co+Ni</b>	<b>Sn</b>	<b>Cu</b>				
moldMAX LH Δ	—	Red/gold	1.9	0.25		Bal.				
moldMAX HH Δ	—	Black/gold	1.9	0.25		Bal.				
moldMAX XL Δ	—	Gold/lt. blue		Ni 9.0	6.0	Bal.				
PROtherm Δ	—	Pink	0.4	Ni 1.8		Bal.				
ALUMEC 89 ◇	—	—	High Strength Aluminum							
ALUMEC 99 ◇	—	Black	High Strength Aluminum							
<b>Holder Steels</b>			<b>C</b>	<b>Si</b>	<b>Mn</b>	<b>Cr</b>	<b>Mo</b>	<b>Ni</b>	<b>S</b>	
RAMAX S from Uddeholm	420F, modified	Black/brown	0.33	0.35	1.35	16.7		.55	0.12	
BOHLER M314 EXTRA	420F, modified	Black/violet	0.33	0.35	1.35	16.0	.15	.60	0.12	
IMPAX SUPREME from Uddeholm	P20, modified	Yellow/green	0.37	0.3	1.4	2.0	0.2	1.0	0.01 max	
Holder	—	Yellow/blue	CrMo Pre-hardened steel							

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\* Also available as:

Precision Ground Flat Stock: O1, A2, D2, S7, low carbon  
Drill Rod: O1, A2, D2, S7

\*\* Only in thicknesses of 16" and over

† Powder Metallurgy steel grades