

Stainless Steel Corrosion Resistance Chart

Corrosion resistance score for 48 stainless and tool steel grades, worked out from the chromium, molybdenum, tungsten and nitrogen left in solution.

Reference only. The values on this sheet are reproduced from the source named at the foot of it. They are a published reference rather than a specification of ours, and the sheet carries no tolerances. The score is the corrosion resistance equation the source developed from its own testing, applied to the alloy in solution at the austenitizing temperature listed, with the contribution from molybdenum, tungsten and nitrogen capped and a low temperature temper assumed. A score of 11 or higher is the line the source uses for the word stainless.

Composition and corrosion resistance score by grade

Source, corrosion resistance of knife steels, Table 15.1 on printed page 171 of the source, which is PDF page 181 of the copy consulted.

Steel	Austenitize (°F)	Cr (%)	Mo (%)	W (%)	N (%)	Score
Vanax	1975	14.6	1.1	-	0.2	17.3
LC200N	1875	14.1	0.9	-	0.28	17.0
M390	2100	13.5	0.9	0.4	-	15.2
S110V	2150	12.5	1.7	-	-	15.1
BD1N	1925	13.0	0.4	-	0.13	14.3
440A	1900	13.7	0.3	-	-	14.2
14C28N	2000	13.4	0.0	-	0.11	13.9
S45VN	1950	11.1	1.7	-	-	13.7
N690	1925	12.3	0.8	-	-	13.5
BD1	1900	12.6	0.4	-	-	13.3
VG-10	1975	11.7	0.9	-	-	13.1
S35VN	1950	10.4	1.7	-	-	13.0
420	1900	13.0	0.0	-	-	13.0
Super Gold2	2000	10.4	2.4	-	-	13.0
Elmax	1975	11.6	0.8	-	-	12.9
S30V	1950	10.2	1.7	-	-	12.8
AUS-6	1925	12.5	0.2	-	-	12.8
S125V	2125	10.2	1.6	-	-	12.8
420HC	1900	12.5	0.0	-	-	12.5
440C	1875	12.0	0.3	-	-	12.5
NioloX	1925	10.8	1.0	-	-	12.4
S90V	2125	11.1	0.8	-	-	12.4
Nitro-V	1900	11.5	0.0	-	0.11	12.0
AUS-8	1925	11.7	0.2	-	-	12.0
8Cr13MoV	1925	11.7	0.2	-	-	12.0
154CM	1950	9.4	2.7	-	-	12.0
AEB-L	1950	11.7	0.0	-	-	11.7
S60V	2050	11.1	0.3	-	-	11.6
19C27	2000	11.5	0.0	-	-	11.5
XHP	1925	9.7	0.6	-	-	10.6
A8 Mod	1875	7.5	1.3	-	-	9.6
3V	1975	7.5	1.1	-	-	9.3
CruWear	1950	6.5	1.3	0.9	-	9.2
ZDP-189	1875	7.0	0.6	0.3	-	8.2
K190	2000	6.4	0.7	-	-	7.5
D2	1850	6.5	0.6	-	-	7.4
Maxamet	2100	4.7	0.0	4.3	-	7.3
Vanadis 8	2000	4.6	2.0	-	-	7.2
Vanadis 4E	1875	4.5	2.1	-	-	7.1
M2	2100	4.3	2.4	2.3	-	6.9
K390	2000	4.1	2.0	0.4	-	6.7
M4	2100	4.0	2.0	3.9	-	6.6
10V	2000	5.2	0.7	-	-	6.3
A2	1775	3.8	0.9	-	-	5.3
52100	1500	1.0	0.0	-	-	1.0
5160	1525	0.8	0.0	-	-	0.8
O1	1475	0.5	0.0	0.1	-	0.5
1095	1475	0.0	0.0	-	-	0.0

The score is the corrosion resistance equation that the source developed from its own corrosion testing, chromium plus 1.6 times molybdenum plus 0.8 times tungsten plus 6 times nitrogen, applied to the alloy that is in solution at the austenitizing temperature listed for each grade, with the contribution from molybdenum, tungsten and nitrogen capped. Every grade is assumed to have been given a low temperature temper. A score of 11 or higher is the line the source uses for the word stainless. Values are reproduced as published and were read from the page image rather than from an automatic text layer. A reference table only, it is not an Aobo Steel specification.

Aobo Steel, tool steel supplier

Aobo Steel supplies tool steel to distributors and mold, tool and die shops, including D2, D3, O1, O2, A2, S7, H13, H11, M10, H21, M2, M42, L6, P20 and 420 and 440C stainless. Forged or hot rolled, annealed or pre-hardened, cut to your sizes, with test certificates.

Reference data compiled from Knife Engineering, Steel, Heat Treating, and Geometry (Larrin Thomas). Table 15.1 is printed on page 171 of the printed book, which is PDF page 181 of the copy consulted. The values were read from the page image rather than from an automatic text layer.

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