

ASTM Grain Size Chart for Tool Steel

ASTM grain size number against average grain diameter in microns for steel, with the band each number falls in.

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 number is a count of grains per square inch on a micrograph taken at 100 magnification from a polished and etched sample, so a reading is only comparable with another when the sample preparation matches. Average diameter is given in microns, where one micron is 0.001 mm, and the band column is the source's own grouping of the scale rather than a second measurement.

ASTM number against average diameter and band

Source, ASTM grain size numbers, Table 8.1 on printed page 67 of the source, which is PDF page 71 of the copy consulted. Values were read from the rendered page image.

ASTM No.	Average diameter (microns)	Relative size
-1	510	Very coarse
0	360	Very coarse
1	250	Coarse
2	180	Coarse
3	125	Coarse
4	90	Medium
5	65	Medium
6	45	Medium
7	32	Fine
8	22	Fine
9	16	Fine
10	11	Very Fine
11	8.0	Very Fine
12	5.6	Very Fine
13	4.0	Ultrafine
14	2.8	Ultrafine
15	2.0	Ultrafine

Average diameter is given in microns, where one micron is 0.001 mm. The relative size column is the source's own grouping of the scale into bands, each band three numbers wide except the first, which covers minus one and zero.

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, H10, 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 Metallurgy of Steel for Bladesmiths and Others Who Heat Treat and Forge Steel (John D. Verhoeven). Table 8.1 is printed on page 67 of the book, which is PDF page 71 of the copy consulted. The table is a published reference rather than a specification of ours.

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