

Hot Work Tool Steel

Physical Properties

Thermal expansion rate / Thermal conductivity / Specific heat /
Young's modulus / Rigidity modulus / Poisson's ratio

■ Document Disclaimer

- The data described in this document is the latest version as of Aug. 1, 2026. Values listed in the brochure may differ.
- Thermal conductivity was measured using the xenon flash method. The measurement repeatability is approximately $\pm 10\%$.
- The product characteristics included in this brochure are the representative values based on the result of our measurements, and do not guarantee the performance in use of the products. Please inquire the latest information to our department in charge as the information of this brochure is updated without previous notice as needed.
- If you have any questions regarding this document, please contact us after selecting "Tool Steel" from the "Inquiry Form (Products)" on our website (<https://www.daido.co.jp/en/>).

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Brand name	Heat treatment ^{*1}			HRC	Thermal expansion rate (× 10 ⁻⁶ /K)						Thermal conductivity (W/m · K) ^{*2}						
	Cond.	H (°C)	T (°C)		20~100°C	20~200°C	20~300°C	20~400°C	20~500°C	20~600°C	25°C	100°C	200°C	300°C	400°C	500°C	600°C
DHA1	HT	1030	620	43	10.5	11.4	11.9	12.4	12.8	13.2	26.2	28.2	29.7	30.1	30.0	29.6	30.2
	HT	1030	585	48	10.6	11.5	12.1	12.6	13.0	13.3	26.5	28.7	30.5	30.1	30.5	29.6	30.2
DHA-WORLD	HT	1030	620	43	10.6	11.4	11.9	12.4	12.9	13.3	29.9	31.4	33.1	32.9	32.5	31.6	30.9
	HT	1030	585	48	10.5	11.5	12.1	12.6	13.0	13.3	29.9	31.4	32.8	33.0	32.7	31.7	31.7
DH31-EX	HT	1030	625	43	10.4	11.4	11.9	12.4	12.8	13.2	29.9	31.5	32.2	32.2	32.0	31.7	31.1
	HT	1030	605	48	10.3	11.2	11.8	12.3	12.8	13.2	29.1	30.9	32.3	31.8	31.2	31.2	30.6
DH32	HT	1030	650	43	10.7	11.7	12.2	12.7	13.2	13.6	36.7	37.3	38.2	36.3	36.5	33.2	32.6
DH2F	HT	1030	620	43	10.5	11.5	12.0	12.5	13.0	13.4	30.8	32.3	33.1	32.5	31.6	31.4	30.1
GFA	HT	870	600	43	10.7	11.9	12.5	13.0	13.5	14.0	36.2	37.1	38.1	37.5	36.3	34.2	32.5
DHA-Thermo	HT	1030	650	43	11.1	12.1	12.7	13.2	13.8	14.2	38.7	40.2	39.6	38.4	36.0	34.3	31.4
DHA-HS1	HT	1030	670	43	11.1	12.1	12.7	13.2	13.8	14.2	-	-	-	-	-	-	-
	HT	1030	560	54	-	-	-	-	-	-	39.8	39.3	39.6	39.6	36.4	35.1	33.1

(*1) A : Annealing H : Quenching (Hardening) T : Tempering PH : Pre-hardened (*2) Measurement method: Xenon flash method Repeatability: Approximately ± 10%

Brand name	Heat treatment ^{*1}			HRC	Specific heat (J/kg · K)							Young's modulus (GPa) ^{*3}	Rigidity modulus (GPa) ^{*3}	Poisson's ratio ^{*3}
	Cond.	H (°C)	T (°C)		25°C	100°C	200°C	300°C	400°C	500°C	600°C			
DHA1	HT	1030	620	43	494	535	572	605	642	694	816	215	84	0.27
	HT	1030	585	48	505	547	591	608	654	699	819	214	85	0.27
DHA-WORLD	HT	1030	620	43	511	539	589	617	660	712	807	215	84	0.29
	HT	1030	585	48	511	545	587	623	662	709	808	214	83	0.29
DH31-EX	HT	1030	625	43	484	521	559	593	639	700	789	214	83	0.29
	HT	1030	605	48	497	535	581	607	646	717	815	214	83	0.29
DH32	HT	1030	650	43	485	511	553	569	631	657	763	213	83	0.29
DH2F	HT	1030	620	43	496	523	556	581	618	684	767	213	82	0.30
GFA	HT	870	600	43	485	508	549	582	627	674	761	206	80	0.29
DHA-Thermo	HT	1030	650	43	476	514	550	586	614	672	740	211	82	0.29
DHA-HS1	HT	1030	670	43	-	-	-	-	-	-	-	211	82	0.29
	HT	1030	560	54	513	538	578	629	647	708	794	-	-	-

(*1) A : Annealing H : Quenching (Hardening) T : Tempering PH : Pre-hardened

(*3) Measured value at 25°C