Data Sheet Laboratory#1

Name ..... Date ..... TA initials .....

Brinell Hardness

Material	Load (Kg)	Indentation diameter, d (mm)	Load/Projected area (≠ BHN)	Load/ Indented area (= BHN)

Diameter of penetrator ball (10mm) = D
Diameter (measured) of indentation = d

Projected area = $\pi\left(d/2\right)^2$

Indented area = $\pi D/2\left(D-\sqrt{D^2-d^2}\right)$

Data Sheet Laboratory#1

Name ..... Date ..... TA initials .....

Rockwell Hardness

Material	Trial	scale	Minor load	Major load	Hardness reading	Conversion and comments
	1					
	2					
	3					
	ave					
	1					
	2					
	3					
	ave					
	1					
	2					
	3					
	ave					
	1					
	2					
	3					
	ave					
	1					
	2					
	3					
	ave					

Data Sheet Laboratory#1

Name ..... Date ..... TA initials .....

Rockwell Hardness (Line scan)

Material	Position (near or away from indenter	Distance between indentation	Minor load	Major load	Hardness reading
	1				
	2				
	3				
	4				
	5				
	6				
	7				
	8				
	9				
	10				
	11				
	12				
	13				
	14				
	15				
	16				
	17				
	18				
	19				
	20				

Hardness Conversion chart

Brinell Hardness	Rockwell Hardness			Tensile Strength
Tungsten Carbide Ball 3000 KG	A Scale 60KG	B Scale 100KG	C Scale 150KG	(Approx.)
-	85.6	-	68.0	-
-	85.3	-	67.5	-
-	85.0	-	67.0	-
767	84.7	-	66.4	-
757	84.4	-	65.9	-
745	84.1	-	65.3	-
733	83.8	-	64.7	-
722	83.4	-	64.0	-
712	83.2	-	-	-
710	83.0	-	63.3	-
698	82.6	-	62.5	-
684	82.2	-	61.8	-
682	82.2	-	61.7	-
670	81.8	-	61.0	-
656	81.3	-	60.1	-
653	81.2	-	60.0	-
647	81.1	-	59.7	-
638	80.8	-	59.2	329,000
630	80.6	-	58.8	324,000
627	80.5	-	58.7	323,000
601	79.8	-	57.3	309,000
578	79.1	-	56.0	297,000
555	78.4	-	54.7	285,000
534	77.8	-	53.5	274,000
514	76.9	-	52.1	263,000
495	76.3	-	51.0	253,000
477	75.6	-	49.6	243,000
461	74.9	-	48.5	235,000
444	74.2	-	47.1	225,000
429	73.4	-	45.7	217,000
415	72.8	-	44.5	210,000
401	72.0	-	43.1	202,000
388	71.4	-	41.8	195,000
375	70.6	-	40.4	188,000
363	70.0	-	39.1	182,000
352	69.3	-	37.9	176,000
341	68.7	-	36.6	170,000

Brinell Hardness	Rockwell Hardness			Tensile Strength
Tungsten Carbide Ball 3000 KG	A Scale 60KG	B Scale 100KG	C Scale 150KG	(Approx.)
331	68.1	-	35.5	166,000
321	67.5	-	34.3	160,000
311	66.9	-	33.1	155,000
302	66.3	-	32.1	150,000
293	65.7	-	30.9	145,000
285	65.3	-	29.9	141,000
277	64.6	-	28.8	137,000
269	64.1	-	27.6	133,000
262	63.6	-	26.6	129,000
255	63.0	-	25.4	126,000
248	62.5	-	24.2	122,000
241	61.8	100.0	22.8	118,000
235	61.4	99.0	21.7	115,000
229	60.8	98.2	20.5	111,000
223	-	97.3	20.0	108,000
217	-	96.4	18.0	105,000
212	-	95.5	17.0	102,000
207	-	94.6	16.0	100,000
201	-	93.8	15.0	98,000
197	-	92.8	-	95,000
192	-	91.9	-	93,000
187	-	90.7	-	90,000
183	-	90.0	-	89,000
179	-	89.0	-	87,000
174	-	87.8	-	85,000
170	-	86.8	-	83,000
167	-	86.0	-	81,000
163	-	85.0	-	79,000
156	-	82.9	-	76,000
149	-	80.8	-	73,000
143	-	78.7	-	71,000
137	-	76.4	-	67,000
131	-	74.0	-	65,000
126	-	72.0	-	63,000
121	-	69.8	-	60,000
116	-	67.6	-	58,000
111	-	65.7	-	56,000