

Heat Treating Time/Temperature Table

This table was created from an accumulation of data from different books, and heat treating experiences of other knappers who were generous in sharing their knowledge and experience.

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ITEM	ROCK	THICK (inch)	TEMP (F)	DESCRIPTION/COMMENT
1	Agate, Blackskin (India)	< .25	550	
2	Agate, Brazilian	< .40	500	Lighter - whites and tans
3	Agate, Brazilian	< .40	600 up to 700	Darker - reds and blacks
4	Agate, Bullseye (Nevada)	Any	475 - 485	Gray, solid pieces. Also called Goldfield Chalcedony and Goldfield Jasper.
5	Agate, Bullseye (Nevada)	Any	375	Colorful, banded pieces. Also called Goldfield Chalcedony and Goldfield Jasper..
6	Agate, Carnelian	> .25	500	
7	Agate, Carnelian	< .25	575	Red color
8	Agate, Montana	> .25	400	
9	Agate, Montana	< .25	450	Translucent
10	Agate, Montana	< .25	500	Clear with patterns
11	Agate, Paiute (Oregon)	> .60	500	
12	Agate, Paiute (Oregon)	< .60	600	
13	Agate, Plume (Oregon)	< .25	500	
14	Agate, Thundereggs (Oregon)	< .25	500	Clear with pink tint
15	Agate. Perkinsville Pink (Arizona)	Any	Still testing	
16	Agatized Coral	>.50	500-550	See note 1 and 3.
17	Agatized Coral	<.50	620	Max temp for 4 to 8 hours.
18	Agatized Coral (Florida)	Any	600 – 675	Light grey to white, yellow and orange. Semi-translucent to opaque.
19	Agatized Sea Stuff, Burro Creek (Arizona)	Any	350	Sea Stuff: Sponges, Clams, etc. Start at 325 and test. Increments of 25 degrees.
20	Bloodstone (India)	< .30	550	Green and Red
21	Chalcedony, Flint Ridge (Ohio)	< 1.0	600 - 650	Smooth grade, Multicolored. Opaque. Also see Chert, Flint Ridge.
22	Chalcedony, Flint Ridge (Ohio)	> 1.0	600	Smooth grade, Multicolored. Opaque. Also see Chert, Flint

				Ridge.
23	Chalcedony, Flint Ridge (Ohio)	< .25	650	Orange. Also see Chert, Flint Ridge.
24	Chalcedony, Flint Ridge (Ohio)	Any	675	Grainier grade, Multicolored. Opaque. Also see Chert, Flint Ridge.
25	Chalcedony, Goldfield (Nevada) (Method 1)	Any	475 - 485	Gray, solid pieces. Also called Goldfield Jasper and Bullseye Agate.
26	Chalcedony, Goldfield (Nevada) (Method 1)	Any	375	Colorful, banded pieces. Also called Goldfield Jasper and Bullseye Agate.
27	Chalcedony, Goldfield (Nevada) (Method 2)	Any	400 for 48 hours	Gray, solid pieces. Also called Goldfield Jasper and Bullseye Agate.
28	Chert, Burlington (Missouri, Illinois & Iowa)	< 1.0	650 -675	Hold max temperature for 72 hrs
29	Chert, Burlington (Missouri, Illinois & Iowa)	> 1.0	650	White, Cream, Tan and Grey. Opaque. Hold max temperature for 72 hrs. See Note 4.
30	Chert, Crescent (Missouri)	Any	650 Max	High Ridge variety. Multi-colored red, pink, purple and tan. Opaque.
31	Chert, Dongola [Cobden] (Illinois)	Any	---	Nodular, Grey to brown. Frequently with concentric banding. HEAT TREATING NOT REQUIRED
32	Chert, Flint Ridge (Ohio)	< 1.0	600 - 650	Smooth grade, Multicolored. Opaque. Also see Chalcedony, Flint Ridge.
33	Chert, Flint Ridge (Ohio)	> 1.0	600	Smooth grade, Multicolored. Opaque. Also see Chalcedony, Flint Ridge.
34	Chert, Flint Ridge (Ohio)	< .25	650	Orange. Also see Chalcedony, Flint Ridge.
35	Chert, Flint Ridge (Ohio)	Any	675	Grainier grade, Multicolored. Opaque. Also see Chalcedony, Flint Ridge.
36	Chert, Florida (Florida)	Any	600 – 650	Yellow to tan. Opaque.
37	Chert, Fort Payne (Tennessee)	Any	---	Nodular. BLACK varieties. DO NOT HEAT TREAT.
38	Chert, Fort Payne (Tennessee)	Any	500 – 675	Nodular. Banded and lighter colors like brown, tan.
39	Chert, Harvester (Missouri)	Any	550 – 625	Nodular. Cream color with brown banding. Opaque. See Note 4.
40	Chert, Hornstone (Indiana)	Any	---	Nodular, Grey, sometimes banded. Opaque. HEAT TREATING NOT REQUIRED.
41	Chert, Kay County (Oklahoma)	Any	600 – 650	Light Tan to Grey. Opaque.
42	Chert, Kentucky Black (Kentucky)	Any	---	Nodular, Black to blue-black. Hornstone. HEAT TREATING NOT REQUIRED.
43	Chert, Kentucky Blue (Kentucky)	Any	---	Nodular, Blue. Hornstone. HEAT TREATING NOT REQUIRED.

44	Chert, Kentucky Tan (Kentucky)	< .50	600	Tan.
45	Chert, Mozarkite (Missouri)	< .50	650	Colorful
46	Chert, Pitkin (Arkansas)	Any	---	Black. Opaque. HEAT TREATING NOT REQUIRED.
47	Chert, Tan (Kentucky)	< .50	600	
48	Chert, Upper Mercer [Coshocton] (Ohio)	Any	---	Black or mottled blue-black. HEAT TREATING NOT REQUIRED
49	Coral, Agatized	> .50	500-550	See note 1 and 3.
50	Coral, Agatized	< .50	620	Max temp for 4 to 8 hours.
51	Dacite	Any	---	Any color from any location. HEAT TREATING NOT REQUIRED.
52	Flint, Alibates (Texas)	Any	450 – 500	Multi-colored, red, purple, cream and white. Opaque. See Note 1 & 4.
53	Flint, Brandon (England)	< .40	500	Thicker pieces will potlid. See Note 1, 3 & 4.
54	Flint, Brazos River (Texas)	< 2.00	600	Cobble. See Note 1, 3 & 4.
55	Flint, British (Britain)	Any	350	Nodular, Grey to Black. Opaque to semi-translucent. See Note 1 & 4.
56	Flint, Copperas Cove (Texas)	< 2.0	550	Light grey color. See Note 1, 3 & 4.
56	Flint, Danish (Europe)	Any	350	Nodular, Grey to Black. Opaque to semi-translucent. See Note 1 & 4.
57	Flint, Fort Hood (Texas)	< 2.0	600	Grey. See Note 1, 3 & 4.
57	Flint, Fort Hood [Belton] (Texas)	Any	500 - 650	Grainier. Tan Opaque. See Note 1, 3 & 4.
58	Flint, Fort Hood [Belton] (Texas)	Any	450 – 500	Smooth. Grey Opaque. See Note 1, 3 & 4.
59	Flint, Georgetown (Texas)	Any	---	Smooth. Nodular, Grey. HEAT TREATING NOT REQUIRED. See Note 4.
60	Flint, Georgetown (Texas)	Any	350 – 400	Grainier. Nodular, Grey. See Note 1, 3 & 4.
61	Flint, James River (---)	Any	---	Shades of Black. HEAT TREATING NOT REQUIRED.
62	Flint, Knife River (North Dakota)	Any	350	Brown, semi-translucent. See Note 1, 3 & 4. Potlid's easily
63	Flint, Knife River (North Dakota)	> .30	400	Brown, semi-translucent. See Note 1, 3 & 4.
64	Flint, Knife River (North Dakota)	< .30	500	Brown, semi-translucent. See Note 1, 3 & 4.
65	Flint McKittrick (California)	Any	475-485	Light brown. See Note 1, 3 & 4.
66	Flint, Pedernales (Texas)	Any	---	Smooth. Tabular. Lavender. Opaque. HEAT TREATING NOT REQUIRED. See Note 4.
67	Flint, Pedernales (Texas)	Any	350	Smooth. Tabular. Brown. Opaque. See Note 1, 3 & 4. Keep 410 F for 3 hrs. Do Not exceed 500.
68	Flint, Pedernales (Texas)	Any	580	Grainy, Tabular or Nodules. See Note 2, 3 & 4.
69	Flint, Pedernales (Texas)	Any	340 – 550	Smooth, Nodular, Brown. Opaque. See Note 1, 3 & 4.

70	Flint, R10 San Antonio (Texas)	Any	450 - 475	Darker colors. Start at 400 and test. See Note 2, 3 & 4. Don't go over 500.
71	Flint, R10 San Antonio (Texas)	Any	550	Lighter grey colors. Start at 450 and test. See Note 2, 3 & 4. Don't go over 550.
72	Flint, Rootbeer (Texas)	Any	300	Smooth, HEAT TREATING NOT REQUIRED. If heat treating, See Note 2, 3 & 4.
73	Flint, Rootbeer (Texas)	Any	410	Grainy, See Note 2, 3 & 4.
74	Flint, Uvalde, Nueces River	Any	350	Smooth, high quality. See note 2 and 3.
75	Flint, Uvalde, Nueces River	Any	450 – 500	Grainy, high quality. Hold high temp for 6 hours. See note 2 and 3.
76	Glass, man made	Any	---	Bottles, pane, stained, etc. HEAT TREATING NOT REQUIRED.
77	Jasper, Banded Purple and Grey	< .40	600	
78	Jasper, Battle Mountain (Nevada)	< .50	500	White to tan. Also called Silicified Ash.
79	Jasper, Biggs (Oregon)	< .80	550	With Pattern
80	Jasper, Biggs (Oregon)	< .80	600	Massive Grey/Brown
81	Jasper, Black	< .50	500	
82	Jasper, Bruneau (Idaho)	< .50	600	
83	Jasper, Dark Chocolate Brown	< 1.0	500	
84	Jasper, Fancy (India)	< .30	500	Red
85	Jasper, Fancy (India)	< .30	550	Pink and green
86	Jasper, Goldfield (Nevada)	Any	475 - 485	Gray, solid pieces. Also called Goldfield Chalcedony and Bullseye Agate.
87	Jasper, Goldfield (Nevada)	Any	375	Colorful, banded pieces. Also called Goldfield Chalcedony and Bullseye Agate.
88	Jasper, Imperial (Mexico)	< .30	500	Red and Green
89	Jasper, Imperial (Mexico)	< .30	650	Nodular form
90	Jasper, Maury Mountain (Oregon)	> .50	400	
91	Jasper, Maury Mountain (Oregon)	< .50	500	
92	Jasper, Mookite (Australia)	< .30	550	
93	Jasper, Mottled Brown	< .60	500	Long hold time produces color change to red.
94	Jasper, Owyhee (Oregon)	< 1.0	600	Red to green to tan
95	Jasper, Picture (Idaho)	< .40	650	
96	Jasper, Polka Dot (Oregon)	< .30	550	
97	Jasper, Red	< .50	500	

98	Jasper, Striped Brown and Red	< .60	500	
99	Jasper, Sunset (Oregon)	< .25	550	White to brown to pink
100	Novaculite (Arkansas)	Any	750 – 900	Multicolored, White, Light Grey, shades of pink, black. Opaque to semi-translucent.
101	Obsidian	Any	---	Any color from any location. HEAT TREATING NOT REQUIRED.
102	Onondaga (New York, Ontario)	Any	---	Black to mottled grey. Opaque. See Note 4. HEAT TREATMENT DOES NOT WORK.
103	Opal, common, precious	Any	---	Any color from any location. HEAT TREATING NOT REQUIRED.
104	Opalized Wood	Any	---	Any color from any location. HEAT TREATING NOT REQUIRED.
105	Petrified Wood (Arizona)	< .25	500	
106	Petrified Wood (Washington)	< .25	400	
107	Porcelainite (Montana, Wyoming, South Dakota)	Any	---	Shades of grey to Black. Maroon. Opaque. . HEAT TREATMENT DOES NOT WORK.
108	Silicified Ash, Battle Mountain (Nevada)	< .50	500	White to tan. Also called Battle Mountain Jasper.
109	Silicified Wood, Rainy Buttes (North Dakota)	Any	---	Brown. Opaque. HEAT TREATING NOT REQUIRED.
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NOTES:

- 1) Hold at 200 F for 24 hrs to release moisture.
- 2) Hold at 200 F for 48 hrs to release moisture.
- 3) Cortex, if present, should be removed (skinned) before heat treating on all flint.
- 4) Soaking in water after heat treating improves workability.