

Heat Treating Stainless Blade Steels at Canadian Knifemaker Supply Ltd.

We have had a number of people ask us for our “secrets” about heat treating knife blades. While we appreciate the compliment, there really are no secrets – and what works for us may not be your favoured solutions. Here are our recipes. You may copy them, publish them or use them as you please. We have drawn from various sources, including Crucible data sheets, other steel suppliers and postings on Blade Forums as well as a good dose of personal experience.

All of our stainless blades get double wrapped in high temperature, 309SS foil envelopes – with double folded seams pressed down firmly. Always put them in the envelope the same way – so you can put them in spine down and pull them out by the handle, instead of the tip. We use brown paper (no idea why brown – just what we use) in pieces about 2 x 2 inches. 2 pieces for an average hunter and four for a big bowie. The trick is to use enough paper to eat up the Oxygen in the envelope – without blowing up the envelope like a balloon.

154CM, CPM154, ATS34

All three of these, heat treat the same. They get 45 minutes to an hour in the Evenheat Oven at 1950F degrees. Then they get placed – still in the foil – spine down – then flat - on a 1” aluminum plate. The second aluminum plate is placed on top and pressure is applied. We used to use weights for the pressure, but now we use clamps. You are looking for good firm contact. If you are thinking hydraulics you are thinking WAY too much pressure. After 2 minutes (or less) they will be hand cool, and ready to remove from the foil for cryogenics. They don’t have to go straight into cryo, but aim for something less than an hour from plate quenching. They probably only need a couple hours in cryo, but we leave them overnight.

The next morning, they will be in the range of RHC63+. After warming to room temperature, they get tempered. We temper twice at 500F degrees for two hours each time – to get about RHC61. You can experiment for other hardness’s but 61 is a very good target for these steels.

CPMS30V

Same wrap – same temperature (1950F) - same soak time – same plate quench – same cryo as 154CM above. This steel gets double tempered at 400F degree for about RHC60

440C

Same wrap – Harden at 1900F degrees and only about 15 minutes at temperature – then plate quench and cryo as above. Hardness out of cryo will be about 61. Temper (twice for 2 hours) at 275F for RHC60 – 325F for RHC59 – and 375F for an excellent RHC57-58.