Non-diamond stropping compounds

Posted by mark76 - 16 Feb 2012 15:57

I am a bit dazzled about non-diamond stropping compounds. With diamond pastes and sprays you know what you get, since you know the material and the grit size is specified. (Although you don't know yet how pure the stuff is.)

However, with non-diamond compounds it is often less clear. A local hardware store sells hards blocks of unspecified green stuff (well, it is labeled "fine"). They told me I should rub it on leather. I doubt that works, but even if it would, I don't know how fine the stuff is.

It is confusing, because a lot of people say they work with "green paste" or "red paste". Green paste often contains chromium oxide with a grit size of 0.5 micron (although I also encountered chromium oxide with a grit size of 3 microns) and iron oxide is red. But for example Dovo makes "green paste" with a much larger grit size, while they also sell a (probably green) compound with chromium oxide. And their red paste does not contain any iron oxide.

In short: my head swims a bit. Who can enlighten me?

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Re: Non-diamond stropping compounds

Posted by jendeindustries - 16 Feb 2012 19:34

Picture yourself standing at the very edge of the highest mountain cliff in the world - now take one step off the cliff.

With this questioning, you're about to fall down the rabbit hole....

The stuff from the hardware store is good for general purposes, although finding the specs on them may take some doing. Generally speaking, the size of the green and red rouges will be between 3 and 0.5 microns. There will be a range of grits in any product (noted as a +/-) Here is an excellent article that goes into particle distribution more.

On brand name compounds, like Hand American, the concentration of the average size is usually reported as the grit. So for the HA .5 chromium oxide, there is a major concentration of .5 particles, but

there will also be range of 1 micron to .25 micron. Distribution curves apply to the WEPS diamond pastes and Ken Schwartz's compounds as well.

Unnamed brands may not have the same spec requirements, as the 1st article shows. See part 2 of that article for more info.

Welcome to the Rabbit hole!

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Re: Non-diamond stropping compounds

Posted by Monk69bl - 16 Feb 2012 23:42

In the old days I know some people used Jeweler's rouge . Haven't made a real search on the grit size. Since gold and silver is quite soft I think these might be quite fine?

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Re: Non-diamond stropping compounds

Posted by mark76 - 17 Feb 2012 14:40

It definitely is a rabbit hole. I asked the question "what do you strop with and what is in it" at another knife forum. All sorts of different answers, green stuff, silver tuff, yellow compound, black paste, and one person answered he didn't know since he was colour blind . One of the best known Dutch knife makers uses blue compound . But nobody was able to tell what it actually was, let alone explain why they used this particular material.

I guess that surprised me. But it must be me. There cannot be a 1000 ghost drivers

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Re: Non-diamond stropping compounds

Posted by Monk69bl - 17 Feb 2012 15:03

Came across this site while reading, scroll down you will see a PDF with Grit comparisons. On there I think they have green compounds.

Grit Comparison-5-17-09.pdf

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Re: Non-diamond stropping compounds

Posted by mark76 - 17 Feb 2012 15:21

Monk69bl wrote:

Came across this site while reading, scroll down you will see a PDF with Grit comparisons. On there I think they have green compounds.

Grit Comparison-5-17-09.pdf

Thanks Monk! That is a useful one. There are actually at least two green compounds. Green rouge (rouge, shouldn't rouge be red?) with 3 micron grit size and chromium oxide with a 0.5 micron grit size. It starts to make some sense...

I think I'll register at Straightrazorplace, even though I don't shave with a straight razor. There is a lot of very interesting material there!

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Re: Non-diamond stropping compounds

Posted by mark76 - 19 Feb 2012 12:42

It is not my habit to answer my own questions (or maybe it is... I used to be an academic), but I did some research on the internet this weekend.

A few things I found out that were new to me:

- Many stropping compounds don't have a label, so you have no clue what is in there. But even if the stuff is labeled, that is no guarantee the stuff conforms to the specifications. See Tom's post above and the link to the blog post he gave.
- I found a nice article treating most common stropping compounds. It also mentions some less common stropping methods with some background information, like why you would want to strop on a newspaper.
- The article doesn't treat CBN (Cubic Boron Nitride), which is a non-diamond compound sold by Wicked Edge. But here you can find everything you always wanted to know about CBN.
- I forgot where I read it, but a nice method to make your own stropping compounds is to collect the

slurry from your whetstones, put it on some paper and let it dry. The micron size of the particles in the compound should be equal to or less than that of the grit size of the stone.

- I read about people cleaning their WEPS using a vacuum cleaner. Maybe they could collect the iron particles from the cleaner bag. This would be somewhat abrasive itself already, but it'd be even nicer to let it rust. I am not a chemist and have no idea what you would end up with (there appear to be different types of iron oxide alone and their micron sizes may vary a lot), but iron oxide is a common abrasive

I have a related question: during my search for stropping compounds I was offered 3M Diapad diamond stropping paste with micron sizes from 15 down to 0.25. Google confirms this stuff actually exists, but that is about all information I could find. Apparently this stuff is normally only used in industrial applications.

3M does make some good polishing products and Diapad is their brand name for hand pads/sanding blocks. Does anyone have more information on this compound?

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Re: Non-diamond stropping compounds

Posted by Monk69bl - 19 Feb 2012 13:47

Thanks for all the nice info Mark76. Something comes to mind as well. The Dry stones seem to chip pieces off the edge, whereas the waterstones seem to give a much smoother finish. This could be because it is using water as a lubricant and thus there is slightly less friction on the metal surface. Perhaps the liquid in the diamond pastes and others is not water and could be more oil based to help form the suspension. Maybe a slightly higher viscosity liquid to help keep the particles in suspension.

Not sure if the more experienced guys have used oil instead of water. Car engine oil comes to mind as that comes under alot of heat and friction. Not sure what that would do to the stones but on the wood and leather strops should be ok. Also Ceramics is used in some modified car engines so I think that could also be ok.

I would stick to the leather and some oil and see how that works. Maybe edible oil would be better for the kitchen knives and engine oil for the EDC/working knives. One can always wash the knives after the Oil strop with dishwashing soap.

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Re: Non-diamond stropping compounds

Posted by mr.cheapguy - 19 Feb 2012 17:24

The problem with cooking oils is that they will go rancid, petroleum based light machine oils and kerosene oils will become gummy with age, were as the industrial synthetic oils don't, typically... As with all lubricants YMMV.

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Re: Non-diamond stropping compounds

Posted by jendeindustries - 19 Feb 2012 19:23

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Excellent finds, Mark!

You can actually get diamond papers down to 0.10 micron
Ken Schwartz has them for the edge pro, and I'm sure he can put them on the Wicked Edge. I've actually got the whole product line coming in the mail to me as we speak, but not on the WEPS.

Monk - good observations about the differences between the diamonds and whetstones.

While water does lubricate, that is only half the answer - the diamonds literally dig out trenches in the steel by scoring through it at "full depth". IOW, since diamonds are very hard, they scratch through the metal leaving a more serrated edge, which can be seen as micro chipping - especially at the very coarse levels. Using the stones dry does leave the window open for metal flakes to cut into the edge, also causing chips.

The water stones work in two different ways - the water acts as a carrier for the lose abrasives to either be flushed off the stone (Shaptons work this way), or to be further utilized as the abrasive breaks down and mixes with the slurry, matrix, swarf and water, making a paste which leaves the edge more refined than the advertised grit (most other stones, including the WEPS ceramics).

Oil is the traditional carrier for holding the swarf. Arkansas stones, for example, excel when used with oil (you can use water, too, BTW) because oil tends to attract dirt and debris, which in this case is the metal swarf and stone particles.

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