

Alabaster Questions and Answers

Alabaster, What is it?

Hydrated Calcium Sulfate ($\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$) a crystalline form of Gypsum

Where to get it?

1. Colorado Alabaster Supply

1507 North College
Fort Collins, CO 80524
(970) 221-0723

(sometimes backordered 1-6 months)

2. Avalanche Creek Marble and Alabaster - Crystal Valley Stone

PO Box 783, Carbondale, Colorado 81623
(970) 963-6635; Fax (970) 963-6354

3. Alpine Gem and Mineral

Parawan Utah

4. New Mexico Alabaster, Mountainair, NM

5. Utah Alabaster Supply, 288 North 300 West
Cedar City, UT 84720 ((435) 865-0118)

6. Flatlanders Sculpture Supply

1193 East US 223
Blissfield MI 49228
(800) 243-4591

7. Plaster City CA, and surrounding area. This is a small, one-company town (US Gypsum) just north of I-8 between San Diego and Yuma, you must contact the right person and then dig it out yourself, good price (free). Do a Google search for location details.

8. www.stonesculptorssupplies.com

9. Rock shops along the highway, stop and ask, if they don't have it they probably know who does.

10. Contact local sculptors or sculpture supply houses, alabaster is a very popular carving stone.

11. Art supply stores, these can be expensive as they can be several buyers away from the source.

12. Look for places on the map named "Alabaster" "Gypsum" "Plasterville" etc. Gypsum is a fairly common mineral (it's the main component of sheet rock) and where there is gypsum there will be alabaster. The question is, is it solid enough and of suitable size to be useful?

How to cut it?

1. Hand saw with large teeth

2. Reciprocating saw. Variable speed preferred, large tooth or bi-metal blade

3. Band saw. Bi-metal skip tooth blade and slow speed preferred

4. Chisel and mallet. Works fine but slow

5. Air chisel. Works well for roughing to shape quickly but difficult to use for clean cuts

6. Chain saw. It works sort of. Plan on "using up" a chain and bar, keep a bucket of water handy or have a continual spray

7. Circular saw. Use a carbide blade

8. Bow saw. I use the blade with a couple of handles on it to cut the bottom of a core out of large pieces.

9. Belt sander and/or Side angle grinder.

Just about any tool that will cut wood will also cut alabaster. The problem is the occasional quartz crystals that are embedded in the alabaster. They take the teeth off of anything.

How do you get it onto the lathe?

(Note: Stone is not flexible at all as wood is. Attempting to bend or flex the stone at all will likely result in a broken piece.)

1. Stone prep: Grind/cut a flat on what will be the base of the piece with a belt sander or router, glue on a pre-turned base,
2. Making base disks.
3. Faceplate prep: Flat surfaces. Describe techniques.
4. Vacuum chuck. You will need a lathe with a hollow spindle (or the Packard Woodworks adapter - 800 683-8876)

A Few Words About Double Stick Tape

1. Not all tape is the same, the brand that is sold by Craft Supplies (1287 E. 1120 S., Provo, UT 84601 - 800-551-8876) works well, not all the others do.
2. Tape will creep, what you turn today may not be exactly centered tomorrow.
3. To separate the tape bond use a steady even pressure, just the sort that a heavy stone left in a horizontal position (i.e. on the lathe) will generate. Do not leave a piece on the lathe when you are not working on it.

Protection:

Breathing: Because the dust is so "fine", you will want to wear a respirator of some sort that has a built in filter and blows cool air on your face. If you find yourself enjoying the stone turning, I recommend this full-face mask (or something similar). I wouldn't want to breathe this stuff in all day. I have an AirMate full-face shield. Sources of supply: Try doing a Google search on Air-Mate respirator and you'll find many sources. Examples: www.envirosafetyproducts.com or www.criticaltools.com.

Skin: drying

Lathe: bearings and switches

What RPM on the lathe?

Slow! SLOW! I used to rarely turn over the 220 RPM slow speed on my lathe. I have since installed a DC motor which allows me to turn as slow as about 50 RPM. On a small piece (under 6") I prefer to start at about 150 RPM and finish at about 400 RPM. DC motors and controls are readily available.

Tools?

Scrapers. High speed steel works fine and gives a very smooth cut. Carbide tipped scrapers last much longer. Stone carvers files & rifflers. Die grinders with carbide burrs. Not much need for gouges.

Sanding?

Yes, alabaster sands beautifully, I start with 100 and go to 400-600, I use it all dry. It is easy to oversand alabaster, making the quartz and/or other harder parts of the stone stand out. Use a sanding block to keep from making waves.

Glue de jour

1. Urethane glues (e.g., Gorilla Glue or the urethane construction adhesives such as are available from Home Depot.)
2. Hot Stuff (cyanoacrylate) OK but is rather brittle, failed joints usually leave a layer of alabaster on

the wood, indicating that it is the stone itself and not the glue that is the weak link. Wipe the stone with alcohol to remove any dust before you glue it.

When gluing wood to stone remember that wood will move as its moisture content changes, the stone will not. After the piece is turned, finish all surfaces of the base and rim with a moisture sealing finish.

Finish?

CA, then Deft lacquer, followed by paste wax (e.g., Trewax)

The questions you didn't know to ask

Quartz?

Quartz crystals are common in Colorado stone, they will take the edge right off your tool sometimes, stop and dig them out.

Dust?

Yes, it is dusty, very similar to sheet rock dust, wear a mask, use a dust collector, work outside. Why does this dust seem to stick to everything? If you want to make Plaster of Paris out of gypsum you heat it up and drive out the water. The scraping action of turning creates the heat and that dust is really low grade Plaster of Paris. Water condenses on the cool cast iron surfaces of the lathe, mixes with the dust and the dust sticks. Alabaster dust is not known to be toxic. Gypsum has been in use for centuries, if the dust were toxic I think we would know so by now. You don't need to treat it like asbestos, or even cocobolo. (However, too much of anything will kill you.)

Heat?

When alabaster gets hot the water is driven out and the stone becomes opaque. The standard for lighting fixtures is 187°, however, I think it is cumulative problem.

Other tips

1. Latex or nitrile gloves, the dust can dry your skin out severely. I use lightweight nitrile gloves that I get from a janitorial supply house, they are usually blue or violet and last much longer than latex surgical style gloves.
2. Face shield, very important, these are rocks that will be flying off the lathe, not cold fettuccine.
3. Steel toes, the rocks are quite a bit heavier than wood and if you do this enough you will inevitably drop a rock off the lathe.
4. If at first you don't succeed, keep trying. In the beginning about 40% of my starts were failures, about half of those were problems with the rocks (too much quartz or structural problems) and half were just my mistakes. I am currently at about a 10% failure rate, and most of these are identified at the early stages so not much time is lost.
5. Alabaster pieces are generally intended to be decorative rather than utilitarian. It can dissolve in water. How quickly? well, a few drops of water on a waxed alabaster surface probably won't make marks. I filled a bowl with water once and found the surface to be noticeably etched half an hour later, requiring that the piece be re-finished and re-polished. Obviously, if there is a fracture in the piece where water can seep through it will, and things will only get worse. One possible way to work with this is to seal the crack with CA.
6. Have fun. This is so important that people sometimes forget that it is the ultimate point of it all.

If I may pass on some things I have learned...

✚ Be safe. You will be turning heavy chunks of rock which hurt if they hit you (I know this personally). Even a small turning will hurt. ALWAYS wear a face shield and eye protection.

✚ Alabaster makes a lot of dust. It will stick to everything. For example, even though you blow the stuff off your clothes, it will magically jump back onto your clothes right before you walk inside on

your freshly mopped floors that your wife just spent hours meticulously cleaning... (I know this personally too...)

🔨 Keep your tools sharp. Alabaster will dull your tools quicker than wood does, so you might make more trips to the grinder, but it's worth it. Dull tools are not fun to use while turning alabaster.

🔨 Speaking of dull tools... If when you are turning and you hear a "click-click-click", that is probably the sound of a piece of quartz embedded in the stone turning the nice edge of your tool dull. The quartz is harder than your turning tools, so the "click-click-click" is the sound of your edge being rapidly removed from your turning tools. Stop the lathe and try to remove the quartz with dental tools, a nail, what-ever...

Other sounds- good vs not good.

🔨 Start out with something small and easy, such as a candle votive or a bud vase. Candle votives are a neat project because they don't use much alabaster, and are pretty easy to do. Plus, if you put a candle in the alabaster votive, it is real pretty. The bud vase is a fun project because you get to practice gentle curves, etc.

🔨 Sanding is key to getting a good finish. I hate sanding, but it is important. :-) So, if your tools are sharp, you won't have to start with as low of a grit. However, I have found that sheetrock sanding "mesh (or screen)" works awesome for sanding alabaster. It never clogs up and it removes the alabaster "ridges" pretty quick. It comes in the rougher grits. Then, I sand up through 320 without skipping grits (don't go from 100-220, for example. Go 100-120-150-180-210-220, etc. I then wet sand the rock from 320-1500. You can go higher if you like, but it's up to you. I've also had good luck using different "grits" of steel wool to help polish the stone.

🔨 Stop the lathe often and check for cracks and fissures. These can/will blow apart on you if you don't fill them with CA. As you remove more of the stone, these cracks can appear (some are caused by the heat of sanding, for example). Nothing is more frustrating than when you spend hours on a piece and it falls apart on you because of a small crack in it that would have taken only a few seconds to stop the lathe and fill it.

🔨 If you add a wood rim or base to your piece, the wood **MUST** be segmented. Wood moves and changes shape... Stone does not. Your pretty piece will fracture, or your wood will crack.

🔨 Finally, have fun (in a safe way). Turning alabaster is a blast. I love taking a piece of stone that looks like a large chunk of chalk and turning it into a beautiful bowl.