

Beginner's Guide: How to make a paint from pigment powder

If you buy or make a raw powdered pigment, it's really easy to make this up into a paint that can be either used immediately or stored until needed. A paint is defined as a pigment plus a medium. The pigment of course is responsible for the colour of the paint, the 'chromophore', but you may also wish to add further fillers – these are also dry powders. The purpose of fillers are to bulk out the paint or change properties such as increasing the opacity or workability of a paint. The medium is the material that makes the paint flow and will define the behaviour of the paint. Oil paints use plant oils as a medium, typically linseed oil. Water colours (despite their name) use gum Arabic mixed with a small amount of glycerine (or honey) as a medium. Other materials that can be used as media include egg yolks (for egg tempera), wax (encaustic) and casein (an extract of milk protein) which is used in casein distemper paints. Watercolours are the easiest paints to make and so the recipe below is to make these paints, which are also easy to store when finished. However the same basic method can be used using all traditional media as well as modern media such as acrylics.



Useful fillers

Most raw pigments will make a decent watercolour on their own with no need to add anything more. Many water colours are very transparent so if you want to make a more-opaque paint try adding some titanium oxide white pigment. Zinc white will preserve transparency if your chromophore is also transparent. Substances such as starch and chalk are also good for bulking out pigments. You can also add fillers which produce an extra effect too, for example pearlescent, metallic or phosphorescent pigments. Of course you may want to mix more than one chromophore to get a different colour.

More about media

The recipe here uses a shop-bought medium. You can of course make your own media from raw materials, with varying degrees of difficulty depending on how much processing is required. There are plenty of recipes out there on how to do this. If you're making egg tempera, just separate the egg yolk from the white and pierce the membrane which holds the yolk and pour it into a jar, and you're ready to go. Raw materials such as solid gum Arabic can also be bought from suppliers of art materials and processed relatively easily. Use 2 parts gum Arabic to 1 part glycerine and dissolve in ~ 4 parts hot water; you can add a little more water if required to get the consistency you want. Ready-made media are also readily available and of good quality and easy to use. The type of medium you use will define the method and technique of painting you will make and will also have an effect on the time taken for the paints to dry. Egg tempera paints for example, dry extremely quickly, and are unforgiving therefore if you want to make changes to your painting. Oil paints are quite the opposite, taking a long time to dry and allowing for easy manipulation or even removal of paint.

You will need

Dry pigment powder ($\pm$ filler)

Medium (the recipe below uses ready-made Winsor & Newton gum Arabic)

A smooth slab of glass or polished stone of size at least 30 x 50 cm.

A palette knife

A muller

Pans, shells or beer bottle caps for storing excess paint.



The only specialist piece of kit here is the muller (left). This is a mushroom-shaped glass tool which is used for thoroughly mixing the pigment powder with the media, so that every individual pigment grain is coated with medium. It is not used for grinding pigment powders (use a pestle and mortar for that). This will ensure a smooth homogeneous paint. You can get by with mixing the medium and pigment using a palette knife but if you are making larger amounts, it's worth getting a muller. These again, can be bought from good artists' materials suppliers and come in a range of sizes. If you're just intending to make small batches of paints, buy the smallest available. The base of the glass muller

should be perfectly flat and frosted, as should the glass slab on which you process the paint. If they are not, you can create this surface using a very fine-grained sandpaper (wear a mask whilst you're doing this!).



Step 1. Start small. Practice with 1 teaspoon of pigment $\pm$ fillers etc. Put this on your slab and make a small well in the centre and pour in about 1 teaspoonful of gum Arabic. Start to mix together using a palette knife, holding this so that the blade is parallel to the surface of the slab. As you go on, you can, if required add more pigment and gum Arabic. Aim for a consistency like runny honey.





Step 2. Start to mull the paint using the muller. Using a circular or figure-of-eight motion rub the muller over the paint. If you feel it's getting spread out too far, scrape it back to the middle using the palette knife. But this is a good thing, getting a thinly spread layer of paint ensures that all the pigment particles are well-coated with the medium. Keep going until you feel the paint is well-mixed and consistent. Your paint is now ready to use.

Mix with water to further thin the paint and to apply to your surface (that's where the water in watercolours comes in).

Step 3. To keep your paint for later use, scrape it into some empty watercolour pans. Again you can buy these from art shops, but you can also use items like seashells (i.e. scallops, cockles, clams and mussels) or the caps from beer or fizzy drinks bottles. Tap the pan/shell on a hard surface to get the paint to sink to the bottom and top up the pan. You may find your paint will shrink and crack as it dries. If you're having big problems here, try adding a drop more glycerine or honey to your mix. You can also buy empty paint tubes too which are a bit easier to fill and don't have the cracking problems. If you're using linseed oil to make oil paints, then you're best off getting some tubes to store it, or you can go Medieval and use a pig's bladder ...

