A quick guide to choosing and using artist's pigments

I wish I had had somebody to demystify this subject for me when I was starting out. I hope to do you a big favour and save you a lot of money and frustration with this quick run-down.

Where to buy

You will have to go to a specialist art shop to buy pigments, or find an on-line supplier. In the UK there are many such shops (mainly in London), and most of them do mail order. Alternatively there are several on-line art specialists from whom you can purchase, whether in UK/Europe or in the US (see my 'useful suppliers' list). A firm such as Kremer (German) sources, processes and supplies its pigments. A supplier such as Cornelissen (London) sources pigments from many suppliers and repackages them. There are various other big names – Sennelier (French), Maimeri, Roberson, Sinopia (US). Often one firm's version of pigment may differ greatly from the next, and as you gain experience you may want to switch brands, for example to find a yellow ochre of a more brilliant colour or finer texture. Some companies package pigments in sample-size pots of 10g or 25g, which can be convenient: bear in mind that a little pigment goes and very long way and 10g might be a lifetime's supply if you only paint miniatures once a week!

Where to start

If you walk into a specialist shop such as Cornelissen and see all the wonderful colours ranged in the pigment jars it can be quite overwhelming: you are likely to end up spending more than you planned to and end up with an impractical selection. Initially it would be sensible to confine yourself to a small range of colours. Earth colours (I explain the term below) are the least expensive, and it is quite possible to paint with only five or six. Personally I find I do most of my work using only six pigments: titanium white, yellow ochre, English Red light/Venetian red, raw umber, burnt umber and terre verte. With the addition of a blue, this palette is adaptable to many purposes. As you start experimenting with your box of colours, you will gradually learn the different characteristics of each pigment, how it behaves on the brush, whether it is opaque or transparent, and its best uses. You will then probably want to add pigments specially suited for your art - maybe pinks and yellows for botanical work, or different greens for landscapes.

Handling and disposal

Beginners be warned, pigments are highly concentrated and very staining – protect your clothes, furnishings and carpets as the smallest grain will make a mark you can never get out. Keep them out of reach of children and pets, be extra careful if pregnant, and bear in mind that any powder is harmful if inhaled. Many people are under the impression that egg tempera materials are organic, eco-friendly and harmless to the health. This is not the case, and you should know what chemicals you are using, and also think about what substances you may be flushing into the waterways when you rinse your palette. Most of the earth pigments are entirely non-toxic and mix with each other without creating untoward chemical reactions, but other pigments

commonly used can contain heavy metals and poisonous compounds. True vermilion and certain other historical colours contain deadly poisons such as mercury, lead and arsenic. Pigments bought from reputable suppliers carry warnings if toxic, and information on things like lightfastness. This is not the case, however, if you are purchasing pigments in more exotic locations while on your travels. Be sure that it is artist's grade pigment you are buying and not some coarser variety of ochre intended for colouring cement or render, and also be sure that you know the chemical contents. I once had a student arrive at a class with a box of unmarked pigments bought in India – many of them proved unsuitable to paint with and quite possibly there were highly toxic substances in the set. Short of sending them to a lab for analysis there would be no way of knowing.

Different types of pigment

Most artist's pigments fall into four basic categories:

1. *Earth pigments and ochres* – these are essentially coloured clays or iron oxide deposits from the soil which are purified and ground fine enough to be mixed with a binder as paint. Often their name reflects their place of origin: umber and siena from Italy, bohemian green earth, English red. They are generally inexpensive and mostly non-toxic. A starter palette of half-a-dozen earth pigments can provide a surprising range of colours which harmonise with each other: this is especially valuable for icon-painters, for whom the symbolism of using earth pigments is important. You can mix these colours with each other without any fear of chemical reaction or fading in sunlight.

2. *Mineral pigments*: these are stones such as lapis lazuli, malachite, azurite or cinnabar (true vermilion) which are ground fine enough to use as a pigment. These provided the brilliant colours you see in medieval illuminated manuscripts. Such pigments can still be bought (often you will find them listed under 'historical colours') but they are often very expensive and can be quite difficult to paint with. Some minerals, particularly lapis, lose their colour when ground too fine and a gritty texture is the price you pay for that beautiful scintillating blue. On the other hand true vermilion (beware, mercury compound and extremely poisonous) is better the finer it is ground. Some artists grind their own pigments of this kind, quite an undertaking in time and equipment: I think you would need to be a great enthusiast or a professional to take that route.

3. *Chemical compound pigments*: under this title I am lumping together the historical compounds (such as realgar, orpiment, veronese green – hideously poisonous historical colours made from lead, arsenic and such) and the modern chemical colours which have largely superseded them. Many of these are inert (such as titanium dioxide white, which has largely superseded lead white) or fairly innocuous. Some, such as the widely available cadmium reds and yellows, are more suspect: word is that EU legislation on toxicity may make these more difficult to come by soon. How many (if any) of these kind of pigments you require will of course depend on what you want to paint. A

landscape artist or icon painter may only want a single blue shade, a floral artist may need yellow, orange, purple, turquoise and pink shades which earths cannot readily supply. When using chemical pigments you should be aware of their chemical composition and reactivity: for example the colour of ultramarine is affected by some mixes due to the sulphur used in its manufacture; the cadmiums are heavy metal-based and adversely affect the environment if flushed down the drains. You can find this kind of information by searching on line.

4. Dye-based pigments ('lakes'): these are colours which are in solution, sometimes plant-derived (madder, indigo), or else chemical (alizarin crimson, quinacridone red). Having no body of their own they have to be mixed with what you might call carrier granules and then dried out to make a pigment. They can be awkward to mix, often needing a wetting agent and pre-grinding in use. They are generally very translucent, best used in watercolour paint or in glazes to modify a coloured ground.

A note on mixing
In most cases, what you see is what you get with artist's pigments: that is to say, the colour in the jar doesn't change when mixed with binder. Shade and texture can very greatly across different suppliers, however, and you may come across one which is too coarse or gritty for your taste: try a different brand. To ensure a smooth mix, some artists pre-mix all their pigments - that is mix them to a paste on a glass slab with a muller - and store them wet for mixing with binder later. This is not the same as grinding a pigment finer, and will be time consuming and wasteful if you only want small quantities of paint. The aim is find a pigment already ground fine enough to mix easily in the palette using a brush.

A quick look at some useful pigments

Ochres and oxides:

- Yellow ochre: look for a clean yellow colour and a texture which is not too gritty
- English Red Light/Venetian red: I prefer these to red ochre - pretty much like an earth red but a lighter tone and less opaque and gritty.
- Raw umber: a smooth-mixing opaque mid-brown
- Burnt umber: when raw umber is heated it changes to a darker shade. Burnt umber is much more translucent than raw umber and has many uses in glazing and colour mixing
- Terre verte (or other green earth): a naturally green clay pigment. Comes in many shades from clear leaf green to a muddy olive shade. Sometimes it's better in a mixture than on its own

Chemical pigments:

- Titanium White: fine, brilliant white and very opaque. This is the non-toxic replacement for lead white, and it has many other applications from household paints to sunscreen and even foodstuffs.
- Ultramarine deep: a fine pigment and transparent blue, very good for glazes
- Cobalt blue deep: a different shade of blue, slightly greener than ultramarine. Opaque, so may be easier for a beginner.
- Cadmium yellow: this comes in many shades from deep orange to lemon. C yellow 'light' is more of a 'true' yellow
- Cadmium red: ranges in colour from near purple to scarlet. C red 'mid' is most useful in mixes.
- Viridian: a beautiful emerald green, quite impossible to achieve by mixing other pigments. It is very transparent, so is useful for glazes or for tinting other more opaque colours
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Lakes

- Alizarin crimson: a cherry red shade which cannot be achieved by mixing other pigments - gives you pink and purple shades when used to tint other colours or as a glaze.