

Making your own Natural and friendly paints

Colour finishes [paint] 'makes' a room or project for me ... I'm not the type of designer who colours everything white, then adds very expensive furniture, bright fabric, modern art etc. The fine tuning of colour & space is the start of any good design. Many of you ask me for advise on 'getting that look' or "who's the supplier of" on this and that for your special projects & restorations you want to complete yourself - examples are: That little box room, the downstairs loo, the music room or a hideaway cottage. One of the 'fun' things about DIY [Do It Yourself] is getting stuck in and having a go! So lets get to it.

I love paint, paint is good. You can jump in the car and drive here & there to the corner paint shop or the hardware supermarket and "buy" your paint off the shelf. Wall / ceiling paint [Emulsion



paint] can set you back anything from £30.00 (€45.00) to over £50.00 (€65.00) for a 5 Litre container. Besides the colour pigments, binders and chemicals ... much of the paint is 'filler'. This can be anything from chalk to clay. Production paint is good because it's available, it's consistent, colour matching is perfect and it's easy to use / apply. Plus it's reasonably priced. There are many companies selling good (and not so good) paint. Some with more pigments than others, some more flexible, some with double-barrelled names ... approved by this, featured here & there and some with colours named after living or dead animals!

So what did people do 'before' all these paint companies? Well there were local businesses making paint ... or you made your own. Modern paints came about during and after World War Two and really took off in the early 1960's with the advent of plastics, new resins and chemical binders. So for thousands of years before that people made their own paint with what they had to hand or near by. That's what we're going to do! Home made paints have a great deal going for them, more than you would think. The ingredients are natural, sustainable, low carbon and environmentally friendly and found in your kitchen or readily available.

The environment, global warming and ecology have all come to the forefront in recent years and so have companies offering & selling 'Natural', 'Earth', 'Milk' or 'Casein' paints. These types of paint have been used extensively throughout Europe for many lifetimes and are 'tried & tested'. These paints do not use harsh chemicals, solvents or Volatile Compounds. So it does not 'choke' you when you use it. You can of course "buy" paint like this in powdered and liquid form from some very good companies in England and the European Union. Yes I buy it in as well, but I also make it too! For small jobs and that special project. What's in this natural and friendly paint? Lets start with Milk and Lime. When the extracted parts of milk combined with lime they form a natural binding agent or glue that is, in some ways, unmatched by today's modern chemical & vinyl paints. To this natural glue, colour [and fillers] can be added taken from most natural substances (earth powders, vegetable dye, berry juice, rust dust, clay, chalk, marble etc.) or water soluble dyes from the art shop [I've even tried food colours]. When dry the finish is gorgeous and it's not matched by 'modern' paints, even the so-called heritage or traditional paints. And this paint also 'breathes'.



Natural paint coverage

As a guide, my paint formulas below have the following coverage:

Wood	=	5 to 5.5 m ² per Litre
Brick / Masonry	=	4 to 4.5 m ² per Litre
Plaster	=	6 to 6.5 m ² per Litre

Coverage will vary due to absorbency / final opacity and you may cover a lot more or less.



Making the paint - all the Ingredients needed

- Casein from Milk ,Vegetables or purchased wet or dry
- Colour pigment from natural components or the art shop
- Hydrated Lime from your local builders merchants / hardware shop
- Borax (Sodium Borate) from Chemist / pharmacy / hardware shop

Optional extras:

- Salt from sea salt or dish washer salt
- Biocide / anti mould additive Steri-Chelle (non toxic & bio-degradable)
- Filler powder from chalk, clay, stone or marble
- Linseed oil from builders merchants / hardware shop
- Natural Solvent = Citrus thinner / Green Terpene / Zest-it / BioShield thinner

The Interior Paint.

Interior soft matt [often called Milk Paint, Casein Paint, Soft Distemper, Natural Indoor Paint]

Formula ingredients - for making 1.5 Litres to 2.0 Litres

- 40 to 50 g powdered Casein [85 to 100 g extracted milk casein]
- 1 Litre of filtered rain water [or distilled water]
- 440 g to 500 g of Hydrated lime
- 250 g natural salt
- 24 to 25 g Borax powder
- 2 drops of pure lavender or orange oil
- Powdered pigment - no more than 200 to 300 g maximum

For a hint of sheen and a bit harder wearing, you can add 12 ml to 15 ml of linseed oil to the mix

Formula ingredients - for making 2.5 Litres to 3.0 Litres plus

80 to 100 g powdered Casein [175 to 200 g extracted milk casein]
2 Litre of filtered rain water [or distilled water]
880 g to 1.0 kg of Hydrated lime
350 g to 500 g natural salt
48 to 50 g Borax powder
2 to 3 drops of pure lavender or orange oil
Powdered pigment - no more than 500 g maximum

For a hint of sheen and a bit harder wearing, you can add 25 ml to 30 ml of linseed oil to the mix
.....

Formula ingredients - for making 5.0 Litres to 6.0 Litres plus

160 to 200 g powdered Casein [340 g to 400 g extracted milk casein]
4 Litre of filtered rain water [or distilled water]
1.75 kg to 2.0 kg of Hydrated lime
800 g to 1.0 kg natural salt
95 g to 100 g Borax powder
4 to 5 drops of pure lavender or orange oil
Powdered pigment - no more than 750 g maximum

For a hint of sheen and a bit harder wearing, you can add 50 ml to 75 ml of linseed oil to the mix
.....

The Exterior Paint

For my *Sea-Side Cottage*

Exterior soft colour masonry paint:

Formula ingredients - for making 25.0 Litres to 30.0 Litres

11.5 to 12 Litres of filtered rain water [or distilled water]
11.5 kg to 12.0 kg of Hydrated lime
3.5 kg natural salt dissolved in 10 Litres of filtered rain water [or distilled water]
700 g Rice Flour
250 to 300 g of Rabbit Skin Glue [or any 'skin' glue; coastal people used fish glue]
Powdered pigment - no more than 350 g maximum

Enough paint for two coats of a sea-side cottage with a drop to spare.



The salt in the formulas is traditionally used as a natural antiseptic / biocide against mould & fungi. I now use a more modern approach by using 'Steri-Chelle', developed in the Seychelles, it is non-toxic and bio-degradable, so very safe and easy to use around the house. Follow the product instructions. If you want to omit the salt from my 'Sea-Side Cottage' paint for Steri-Chelle. Then of the 10 L used for dissolving the salt, just use 4 Litres and go from there. All the water used for making the paint must be free from chlorine and chemicals.

As with all my formulas above, the final mixture should have the consistency of quality "Paint"! So like salad cream on the brush. You obtain this viscosity in the blending process by adding water, mixing and waiting and so on. Do not add too much water or pigment. As your paint will be difficult to apply and turn to dust on the wall.

Method of combination

[wear protective gloves, eye wear and a mask ... plus wellies and a plastic apron for the full kit].

Use a good gram scales to measure out the ingredients

In plastic containers and buckets with wooden or plastic utensils;

Warm the water to be used to room temperature [no more than 40 to 45 C].

Warm the milk (if creating your own Casein) to room temperature [no more than 40 to 45 C].

Slowly combine some of the pigment with the water to 'slake' it into a paste

Slowly combine some of the Casein (if using the purchased variety) with the water into a thin paste and allow to stand a while [Doing this the night before is best].

Slowly combine some of the Hydrated Lime with the water into a thin paste.

Slowly combine the borax into a good amount of the warm water to dissolve it thoroughly.

With the drained but wet Milk curds you've made (or the prepared from dry casein mixture), add this to the lime mixture, stirring consistently - it should be smooth and thick. Now add the borax and stir in, add the salt liquid and stir in followed by some of the pigment paste. Add water occasionally to keep the consistency like a thick cream. Continue adding the pigment paste until you have the colour you want. Add a drop or two of the natural lavender or orange oil. Now add water to get the right 'paint' consistency (also add in the linseed oil if you want the finish, just before this step). Wait for five minutes and check the consistency again.

If you are not using the 'salt', omit that step above and add your Steri-Chelle when your adding the lavender oil.

Try your paint on a piece of mounting card / plaster board / rock-wall and let it dry (use a hair dryer on cool or put it outside in the breeze). You will notice that the dry colour is soft and slightly different to the wet paint mixture -- now is the time to add extra of your pigment paste to the mix if you want to. The water we use is the 'carrier' or solvent for the paint. Use your paint within 'Two Days' of mixing [if kept cool] and always stir before use. Once the water has evaporated you have your final colour ... allow the paint to 'fully cure' for about a month.

The mixing method is the same for the Sea-side cottage paint ... the tip is to mix up your dry ingredients well with some warm water 'first' before they are combined in the sequence.

You can 'add' a filler to the interior paint so as to make it go further (if you must) this can be in the form of chalk, powdered clay, marble or stone powder. You can try this ... try it as 20 to 25% of the lime weight as filler. It also alters the final paint finish and texture.

Making your own casein from Milk

To obtain 'Casein' we can extract it from skimmed milk, purchase it in powdered form or pick it up in the cheese aisle of health type supermarkets - commonly called Quark often from vegetables. Powdered Casein is available from art shops too.

To obtain casein from milk we use fresh skimmed milk that will be turned to curds with the addition of white [clear] vinegar (or you can try filtered lemon juice). We add this to curdle the milk and create the milk protein Casein (Quark), this is concentrated within the milk curds.

Allow 4 litres of skimmed milk (with no additives or vitamins) to stand and warm to room temperature. It should not become 'hot', so no warmer than 40 to 45 C degrees to protect the integrity of the casein. With the milk in a large plastic container, stir in the 0.47 to 0.5 litre of white [clear] vinegar. Curdling will begin immediately. Allow the mixture to sit in a warm place overnight or for up to one day, stirring gently occasionally. You will notice that the milk solids separate from the liquid, creating solid curds and whey liquid.

Line a colander completely with some cheesecloth. Place the colander in the sink and pour the curds and whey slowly into it to drain the whey off. You now have small, easy to dissolve quark. Rinse the quark with cool water to remove any residual whey and neutralise the vinegar. Allow it to drain, but keep the curds dripping rather than becoming too dry. You will get around 500 ml from 4 litres of milk that's about 400g to 550g.

Cleaning up

Once you have made your paint, clean up and wash off equipment and utensils with lots of soapy water.

When your painting project is complete - wash out your brushes with soapy water again. Allow any paint left over to 'dry in the plastic container'. Once dry you can shake out the solid paint onto news paper and dispose of responsibly through your local bio-degradable rubbish site.

For over coating the interior casein paint or for painting doors, trim and woodwork. Here's a simple oil paint that will add that finishing touch to your project.

Simple Oil Paint

Ingredients

50% Linseed oil

50% Natural solvent

Add in pigment for a glaze or colour coat.



Oil paint is great for exterior surfaces and these oil painted surfaces can be cleaned without damaging the paint. Oil paint takes a very long time to dry, it's never completely dry – this is the property that gives oil paint its elasticity which helps it move with surfaces as they naturally swell and shrink with the temperatures.

Organic raw linseed oil and a natural solvent such as citrus thinner are the typical ingredients for natural oil paints. If you intend to paint bare wood and want to cover the grain of the wood, prime the wood prior to painting. This will help seal the wood against moisture and will create a better bond with the paint. Oil glaze can be used over my rice flour and casein paints to increase their resistance to water and abrasion. Clean up oil paint utensils with news-paper and natural solvent, then soapy water. Basic oil paint makes a nice stain with or without added colour.

If made to formula and applied to sound walls and woodwork, you can expect this finish to last for between 4 and 6 years often longer. A good example of this paint's longevity is to look at the wall coating and wall paintings in old churches. Even at 300 years old it still looks good.

If you want the interior paint to crackle and split in places, for a period look or ageing, apply it thickly. If you want a wash [glaze], add less pigment and more water [but not too much]. Part of the fun is having a go, experimenting; so don't get too frustrated if it doesn't come out the way you wanted. You know you can always paint over it!

Happy Days!

Colin Perry.