



Recipe FOR SUCCESS

Discover what is in a tin of paint and how ingredients create the perfect finish



When buying a tin of paint, it can be easy to take for granted, or simply not wonder, what ingredients might be inside. As a material that is going to be used to envelop our lives, covering the vast majority of surfaces in our homes, it is perhaps surprising we may not give as much consideration to what goes into it as we do to the food we eat, the body lotions we use, or the detergents we use to clean our clothes.

Much progress has been made in the industry in recent years to move towards more environmentally friendly processes and materials. Terms such as 'natural', 'eco', 'bio' and 'plant-based' are being used to describe a variety of paints, but what do they mean and how does the choice of ingredients impact on the performance, quality, aesthetics and price of a paint? ▶

ABOVE Atelier Ellis lays claim to be the only company to make its own bio-based paint in the UK.

LEFT The palette of colours in the Morris & Co paint collection complements the colours found in the brand's classic Arts and Crafts designs.



ESSENTIAL INGREDIENTS

- **FILLER** – the main base, which in most cases is water, which evaporates during drying.
- **PIGMENTS** – these are usually natural and provide colour and opacity.
- **BINDER OR RESIN** – this holds the paint together and helps it stick to the wall. Often acrylic but can be plant-based.
- **MINERALS** – these include chalk, clay and marble that offer performance and aesthetic finishes.
- **ADDITIVES** – these help preserve and improve performance of the paint.

ABOVE Atelier Ellis paint is made to order in a studio in Bath. Tins are despatched the next day.

BELOW Natural earth and mineral pigments are used to make historic-inspired colours at Edward Bulmer Natural Paint, using a plant-based paint formula.



What is in the tin?

Paint is essentially made of four chief components, the first of which is a filler – main liquid or solvent – which carries the rest of the ingredients and evaporates during drying to leave the solid components present. Historically this would have been solvent-based but technology has improved to allow for many more water-based paints. Farrow & Ball cites that its paint being 100 per cent water based means it is “safer, faster-drying, lower in odour and VOCs, and better for the world we share, with absolutely no compromise on colour or performance.”

Gareth Hayfield, head of research and technical development at Farrow & Ball, reveals that the other main ingredients typically found in paint are: “Pigments – these give the colour and opacity; a binder or resin, which is the glue that holds it together and makes it stick to the wall; minerals, such as chalk, china clay or marble, which can offer aesthetic properties to the finish; and a small amount of additives. The latter can include preservatives, so the paint doesn’t go off or smelly; thickeners, so the paint sticks to the brush or roller and then applies smoothly to the wall; and defoamers, to prevent bubbles forming during application.”

The ratios and qualities of these ingredients will affect the final result. Hayfield likens this to a cookery recipe: “If you adjusted the amounts then the taste and look of a dish would differ; likewise you could use the same ratios but better quality ingredients and it would taste much better. The same is true of paint.” The ratio and choice of the binder or resin will impact the finish of a paint – floor paint will need to be hard-wearing so will require more impact resistance, while outdoor paint will require UV and rain resistance and the ability to stick to masonry. “You can alter the ratio of binder to minerals to change the aesthetic qualities, too,” he adds. “You can create a shinier or more matt appearance and a softer or harder finish depending on the type of mineral and the size of the particles.”

Performance factor

The majority of paints use minerals we are familiar with such as chalk, clay or marble, and which give the desirable chalky or velvety finish, for instance. Mylands is known for its Marble Matt Emulsion, which gives a hard-wearing finish, and has just launched an emulsion that uses powdered olive stones, making use of a byproduct of the olive oil industry. Meanwhile at Earthborn Paints, clay is the mineral of choice, giving a creamier, softer look and offering benefits that surpass the aesthetic finish. Bailey Oates, Earthborn’s colour expert, explains: “The moisture-absorbing properties of clay paint can help regulate the humidity of a room, reducing condensation, mould and mildew, making for a healthier home. The high clay content also helps to destroy airborne contaminants and emits

‘The high clay content helps to destroy airborne colours and contaminants and emits negative ions which are widely accepted as being beneficial to health and well-being’

Bailey Oates, colour consultant, Earthborn Paints



negative ions, which are widely accepted as being beneficial to health and well-being, especially for allergy and asthma sufferers.”

Craig & Rose also uses chalk and has developed its Chalk Wash range to help create paint effects, as Flora Hogg, the brand’s colour consultant, explains. “Chalk Wash boasts a sheer and watery consistency, enabling effortless movement and the creation of unique textures. It’s versatile and buildable, lending itself to various techniques such as stippling, rag rolling, and sponging.” She adds, “When applied on top of our Dried Plaster Chalky Emulsion, our Pink Clay Chalk Wash effortlessly mimics the allure of freshly plastered walls, minus the need for a plasterer.”

Natural connections

Much is made of whether a paint uses ‘natural’ ingredients, though sometimes this can be a bit of a misnomer. Minerals are obviously a natural ingredient, but there are some, like lead and other heavy metals, that would not be desirable in paint, so understanding what is good when it comes to natural, and, conversely, what can also be good to be man-made, is important.

Founder of Lakeland Paints, Ian West, has a party trick of eating a spoonful of its Matt Wall Paint to demonstrate the safety aspects of his formula (a video



ABOVE LEFT Farrow & Ball’s Dead Flat paint, shown here in Red Earth, has been formulated to ensure matt opacity and rich pigmentation in just two coats.

ABOVE RIGHT Atelier Ellis’s curated palette of colours is showcased on hand-painted colour cards.

LEFT Zoffany creates paint colours pigmented to perfectly match its fabric collections.

is available on the website). While a dollop of paint might not be a first choice to serve with strawberries, it does highlight that ingredients matter and have a huge impact on not only the look and performance of a paint but its safety too. Hayfield explains safety is the first consideration in Farrow & Ball’s formulations: “Is it safe to make and safe to use is a primary concern.” Many of us are familiar with the ▶



ABOVE A design house such as Sanderson will ensure its paint colours work in conjunction with its wallpaper and fabric palettes.

ABOVE RIGHT Craig & Rose's Chalk Wash finish can be used to create a plaster effect on walls.

term VOC (volatile organic compound) and these days expect paints to be virtually VOC-free, which the majority are.

Cassandra Ellis, founder of Atelier Ellis, does note though, that a VOC test is performed before pigments are added. "Pigments can be bought at different grades. The grade we use has no VOCs, but just one grade lower will contain some, and so on. The grade we use is twice as expensive as the next one down." Ellis also notes that most pigments will be natural, from umbers or oxides, but, importantly, sometimes man-made alternatives are a better option: "I'd never use cobalt for example, as it is not good to mine, so a man-made alternative is a sensible choice."

Advanced technology

Paint manufacturing is a constantly evolving field, with new finishes and products being launched regularly. This might be to improve performance, for instance, Farrow & Ball has worked to ensure its paint provides excellent coverage and opacity in just two coats, particularly with the recent Dead Flat launch.

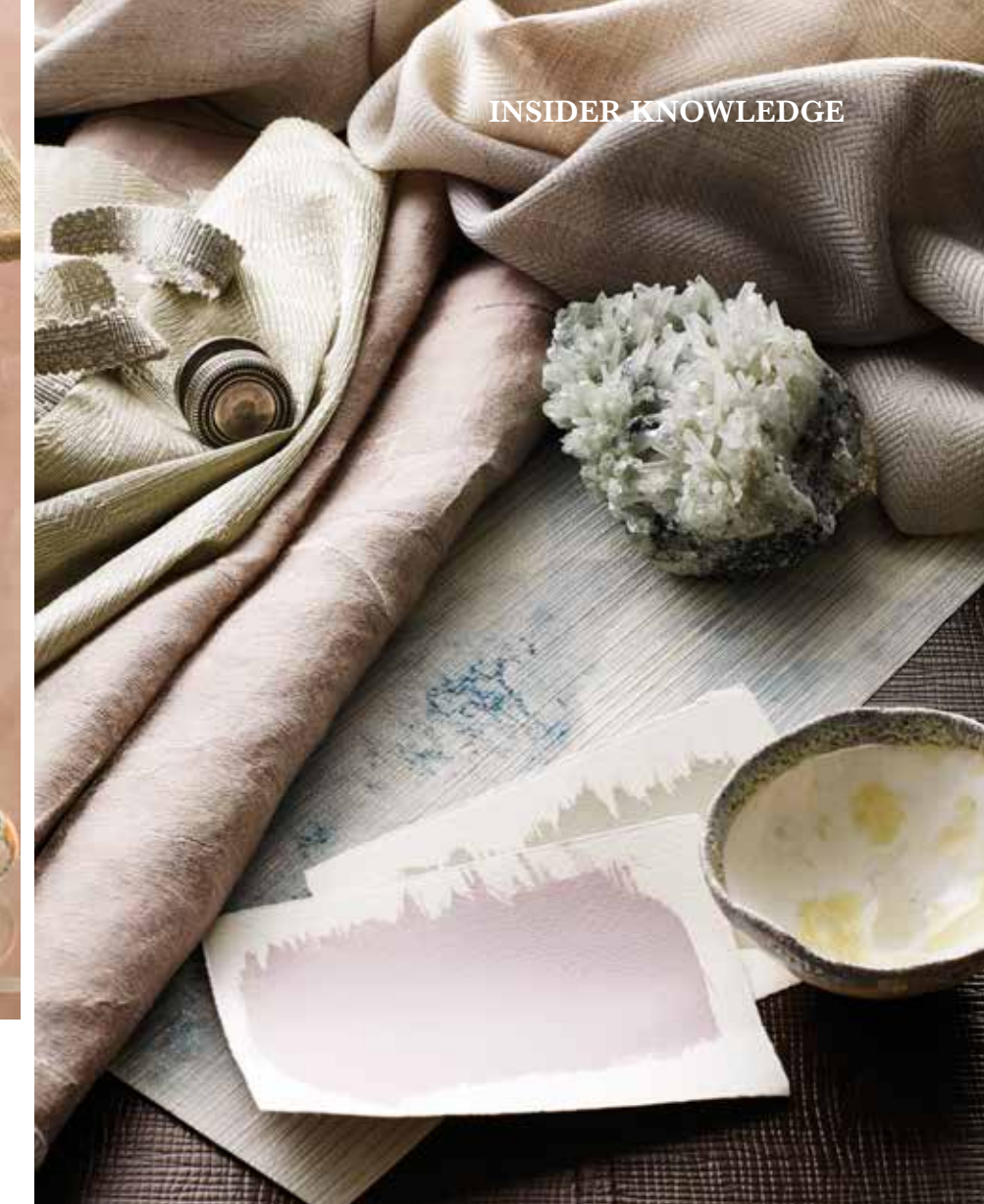
Little Greene has been working on a project for a number of years and has now launched a new self-priming paint to be used on multiple surfaces. The Intelligent Paints collection means furniture, woodwork, walls, tiles, metals and plastics can all be primed and painted from just one tin for an easy-to-apply seamless finish – ideal for the popular colour-drenching look. David Mottershead, founder and

managing director, explains the science behind this innovation: "The key is the binder with very low polarity, which allows the resin to approach the substrate much more intimately, allowing a very tight grip onto the surface. Cross-linking, in the same way as happened in traditional oil-based paints, the paints become tougher about 2–3 days after application."

The health impacts and environmental factors of paint are a priority for high-end producers. Patrick Folkes, CEO of Graphenstone, explains its range of 'air-purifying paints' have no added chemicals or plastics involved in production, which, as well as having breathability benefits, means the product is good for the environment. "According to one recent pessimistic study from Environmental Action in Switzerland, about 58 per cent of microplastic in oceans and waterways comes from paint alone," he says.

Truly organic

Many paints do have acrylic (plastics) in the binder or resin to enable a desired performance, and largely out of necessity because of technology. There are a few producers seeking to change this and move towards using a plant-based binder. Edward Bulmer has long been a proponent of the movement, championing natural paint and using a plant-based binder made in Germany (with plans to make this in the UK), he adds his specialised pigments to recreate historical colours. "Plant-based paint means that the main constituent – the binder – is made from plant material," he



INSIDER KNOWLEDGE

explains. "Most paints will have some 'natural' ingredients, like clay or water, and the term natural can be used to describe these, but they are not the base of the paint, which in nearly all cases now is acrylic, a petrochemical resin."

A plant or bio-based paint is made predominantly from waste material such as vegetable or linseed oil. Ellis has worked over the last few years to develop the first UK-made 'bio-paint', and says: "The Covid period gave me a chance to re-evaluate what we were doing, and I decided we could do better, so set about making our own paint base." For Ellis this meant avoiding fossil fuels completely in the process, so she worked with a chemist and master decorator for two-and-a-half years to develop a "bio-based paint that is sourced and made in the UK (95 per cent of ingredients are from the UK) and made in a way I think is appropriate for the future."

Every decision in the process is crucial for Ellis, not only in choosing environmentally friendly ingredients, but also in considering where they are sourced, how they have been transported and how the paint is made. She notes that at every step there are decisions and considerations to be made, and this obviously has a result on the cost of the product. "I try to liken this to buying a chicken – you can get one for £4 at the supermarket or spend £25 at the butcher. The choice goes far beyond the cost and people understand the difference in what that means for the chicken; the same is true for paint." She goes on to add, "Just as ▶

'Our hierarchy for formulating paint is zero harm, quality, service and, finally, cost'

Gareth Hayfield, head of research and technical development, Farrow & Ball



ABOVE Minerals are often used for pigments. Here Zoffany's paints are perfectly coloured to harmonise with fabric choices.

LEFT Graphenstone's 'air-purifying' paints are good for the environment and for health in the home.

INSIDER KNOWLEDGE



'I would like to see all house paint made without petrochemicals. This will require consumers to be more discerning and to pay the costs associated with premium paints'

Edward Bulmer, founder, Edward Bulmer Natural Paint



when we know at a farmer's market we are choosing to buy seasonally, locally and organically, so we should question and apply the same concepts to other purchases in our lives."

Atelier Ellis paint is handmade to order in Bath, ensuring no wastage: "Customers place an order and we make it that day and send it out. To customers in Bath, we deliver it on a three-wheel bike," Ellis says. "To justify the price, we have to be the best we can, which means being efficient, as well as ensuring the product is up to the job. Testing is vital and we ensure it is robust. We have actual people making the paint and we take great pride and care in what we do."

Colour choice

For most of us the deciding factor in paint is colour, a fact Ellis is very aware of. "If a customer doesn't like your colours, they won't come to you. Colours are an emotional choice and customers have to live with them, so it is important to get those right."

There can seem to be a mind-boggling choice of colours on offer, and it can seem impossible there could be a new 'off-white' or even a new shade of pink. So how are colours developed? Hayfield explains it can take years. "Our creative director, Charlotte Crosby, will be looking at trends for the next four to five years. While we respond to what is popular, we also want colours that will earn their place on the colour card for the long term - there are some on there that were there before I started 25 years ago - so we want to ensure a colour will have longevity, not just be a fad."

The development can go through several rounds before the perfect hue is reached using a special blend and selection of pigments. Every paint company will tend to have a trusted palette and types of pigments that help achieve a signature look. "This is so you can use our colour card and combine colours and they will hang together well. They all have the same provenance," says Hayfield. Other brands, such as those with ranges of fabric and wallpaper too, will want a complementary paint collection. In the case of Morris & Co, this includes a palette that harmonises with the heritage colours used in its iconic Arts and Crafts designs.

Ultimately, choosing paint will come down to the the colour, whether the ingredients are desirable, and perhaps the price. Ellis recognises a premium product comes at a higher cost, but likens this to other aspects of life where choosing quality and the desire to do better in terms of sustainability, healthier choices and environmentally friendly factors can mean the choice might be to redecorate less frequently. "Perhaps consuming less, but consuming better is the right notion," she says.

Edward Bulmer also reveals his hopes for the future of paint: "I would like to see all house paint made in the way we do, without using petrochemicals. This requires a willingness on the part of manufacturers to invest in the research and on the part of consumers to be more discerning and to pay the costs associated with premium paints. Actually, this should not be too hard and is a fairly small price to pay for healthier interiors and a cleaner planet." ■

ABOVE RIGHT

Earlborn Paints uses clay in its paints for a creamy aesthetic as well as for other performance benefits. Balloon Ride is from its brand new capsule collection of five colours.

ABOVE LEFT

Edward Bulmer has been a long-time champion of creating paints without plastics and hopes for a future where all paints are made plastic-free.