



Painting naturally

Choosing paints with low-toxicity solvents – or better, none at all – will help you and the planet breathe easier.

BY NICK GALVIN

Over the course of a long career as a painter and builder, Brad Robinson has used pretty much every type of paint. But now he has no doubt that, given the choice, he much prefers to work with paints made from ingredients such as safflower oil and clay, rather than the mainstream products most of us use.

“I still have to use some commercial paints now and then but I really try to educate the customer if I can and say, ‘This is what I would prefer and this is what would be better for you, me and the planet.’ I haven’t got to the point where I’ll refuse to do the work if they won’t use these paints, but I do try to push them in that direction.”

Robinson became interested in using ‘natural’ paints when he himself began reacting to the solvents in some of the mainstream paints he had to use.

However, Robinson is in the minority. The vast proportion of the more than 200 million litres of paint that we use each year is of the mainstream variety. Quite what that means for our health is

very much open to conjecture and obviously the manufacturers themselves have no doubt their products are quite safe as long as they are applied according to the directions.

Chris Winder is an associate professor in applied toxicology at the University of New South Wales School of Safety Science. He dislikes the terms ‘natural’ and ‘synthetic’ when it comes to paint.

“There is a spectrum of toxicity in synthetic materials and there is a spectrum of toxicity in so-called ‘natural’ materials,” he says. “Some natural materials are really toxic and some synthetic materials aren’t, so I just lump them all together as chemicals.”

Deborah Preston of Painted Earth, a distributor of natural and low-toxicity paints, agrees that there is a spectrum of toxicity. For instance, she says natural solvents like lemon peel oil, orange peel oil, pine oil or paraffin oil can irritate the skin and mucous membranes, and add to indoor and outdoor air pollution “though they are certainly not as hazardous as aromatic hydrocarbons”.

Preston says it comes down to the intention and research of the person and company making the paint or finish – how much consideration they have for the toxicity of the product.

“Often they are balancing or trading this off with performance,” Preston says. “Hence, most industrial level paints will be more toxic than domestic paints. As research and development progresses with the environment in mind, we are able to find ways of having both. So look for the more progressive, environmentally-minded companies.”

What’s in a paint

Paint is typically composed of four different elements. There is a pigment that gives it its colour, a resin that holds the pigment to the surface once it is applied, and any number of generic “additives” that can range from anti-fungicides to drying agents. The fourth element is a solvent, which may be an oil or water.

“You slap the paint on and the solvent evaporates off, leaving the resin and the



Milk paint gives an old-world look.

pigment behind,” says Winder. “Most paints in the past have used a range of different types of solvents and resins. For example, linseed oil and teak oil were solvents a long time ago but they take forever to dry.”

Solvents are also referred to as ‘VOCs’ – volatile organic compounds (organic as in hydrocarbon compounds). As the solvents evaporate – or ‘off-gas’ – from a freshly painted surface, they move into the air creating the new paint smell familiar to anyone who has ever taken up a brush.

Inhaling various types of oil-based solvents has long been associated with potential health problems, most dramatically in professional painters. After years of exposure to certain solvents, they may develop a serious illness known as ‘painter’s syndrome’. This is a disorder of the central nervous system that can lead to headaches and forgetfulness and, at the other end of the spectrum, serious brain damage.

Worksafe Australia also classifies some solvents, including benzene, carbon tetrachloride and formaldehyde as definitely, or probably, causing cancer in humans.

The added problem with paint is that a lot of it is used indoors, which can

Disposing of paint

Ideally, you should buy only the amount of paint you need, so it’s worth planning a painting job well. However, if there are leftovers, pouring paint or any other chemical down the sink or drain is a big no-no. Many local councils have regular collections or drop off centres for paint and chemicals. Alternatively, for water-based paint you should return as much of the paint as possible to the can. Paint any excess paint onto old newspaper, which can be put in the household waste once dry. If you do find yourself having to deal with oil-based paint, use natural thinners, such as those from Bio or Livos.

Of course if you are using a paint made from plant-based material, this can actually be poured onto the earth, but don’t put it in a concentrated area. If you have lots left, don’t waste it – donate it.

Natural paints can produce vibrant colours, such as this uplifting blue.

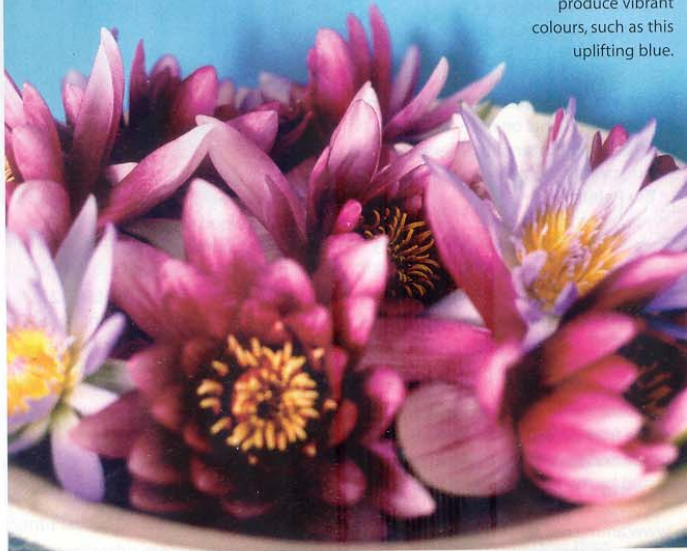


PHOTO: BAUWERK COLOUR PAINTS

result in concentrations of solvents many times that which there would be outside. Put simply, solvents can be very bad indeed for our health, so avoiding breathing them in makes good sense.

Of course, the average person is never exposed to anything like the levels of solvents a painter inhales over the course of a career, and although paints can continue to off-gas for years, the chemicals released are only at tiny levels. “A freshly painted house probably off-gases at a level that would affect the ordinary person for maybe a week but no longer than that,” Winder says.

However, Preston believes that the

more aware people become, the more they will notice the effects. Given that we do not as yet know the full health impact of combined chemical exposure from all aspects of life, she believes it makes good sense to avoid even minor doses.

But there are a small number of people who are unusually sensitive to the sort of gases that paints emit. There has been some controversy in the past about the existence of so-called ‘multiple chemical sensitivity’, but the concept is now beginning to gain widespread acceptance.

Winder says that he has personally dealt with up to 200 people with varying

SELECTED PAINTS AND FINISHES

This is a fairly comprehensive list of non-toxic or low-toxicity paints and finishes sold in Australia. Although this article concentrates on paint, the health and environmental considerations also apply to finishes such as varnishes, stains, oils, sealers, primers and paint strippers. To buy them, try the company or importer websites for distributors, or contact eco stores and on-line directories selling environmentally-friendly products.

Two specialist natural paint distributors that we found are also listed. Cooee is also included as a manufacturer of natural timber treatments that can replace the CCA timber that is now being phased out of parks and school playgrounds over health concerns.

Natural paints and finishes

• Livos Natural Paints

www.anrofloorcare.com.au

Phone: 03 9779 5752

The Livos range is plant-based, non-toxic and bio-degradable. They also list all the ingredients on each tin. The Australian importer of the German-made paint is Anro Floorcare.

• Bio Paints

www.bioproducts.com.au

Phone: 1800 809 448, or 08 8339 1923

Non-toxic and solvent-free, Bio paints are made from plant extracts and minerals.

• Bauwerk Colour

www.bauwerk.com.au

Phone: 08 9433 1008

Bauwerk's wide range of paints are made from limestone and are water-based and toxin free. They are product tested by the Australian Ecolabel Assoc.

• Volvox Clay Paints

www.amma.net.au

Phone: 02 4782 9009

These are odour-free, made from natural clay and are winning environmental awards in Europe. The Volvox Hard Oil Wax Finish is of note as a solvent-free option for floors, furniture and trim. The company website is in Germany (www.volvox.de) but the Australian importers are Amma Earth.

• Natural Paint and Beyond

www.naturalpaint.com.au

Phone: 02 6584 5699

Exclusive importers of Kreidezeit natural paints and finishes.

Synthetic paints and finishes

• Oikos Paints

www.designerpaintco.com

Phone: 1300 303 802

Oikos paints are water-based and very low in solvents (VOCs) with high-yield coverage, making them among the most affordable. They are imported by The Designer Paint Company.

• Cooee

www.cooeeproducts.com.au

Phone: 07 5477 0953

Cooee's Timbertreat is a non-toxic timber and decking preserver that inhibits mould and wood rot.

• Porter's Original Paints

www.porterspains.com.au

Phone: 1800 656 664 or 02 9698 5322

Porters limewash and milk paint bases are traditional zero to low-toxic formulations. However, check toxicity of tints.

• Wattyl Paints

www.wattyl.com.au

Phone: 132 101

Sell the recently released, low-VOC base paint Wattyl i.d. But check toxicity of tints.

• Dulux Paints

www.dulux.com.au

Phone: 13 25 25

Sell their new, low-VOC base paint Enviro2™. Check the toxicity of tints.

Other sources

• Painted Earth

www.house-paint.com.au

Phone: 02 6680 5729

This mail-order service provides a wide range of natural and low toxicity paints with detailed notes on 'naturalness', pricings and coverage.

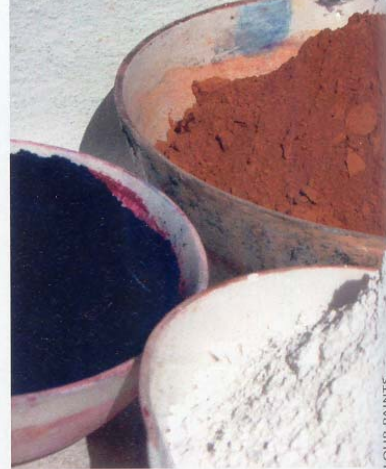
• Natural Paint Place

www.thenaturalpaintplace.com.au

Phone: 02 9519 0433

Sydney-based, specialising in natural paints and finishes. Provides advice to the public about the paints.

A range of pigments used in natural paints.



levels of sensitivity to chemicals from mild to very severe.

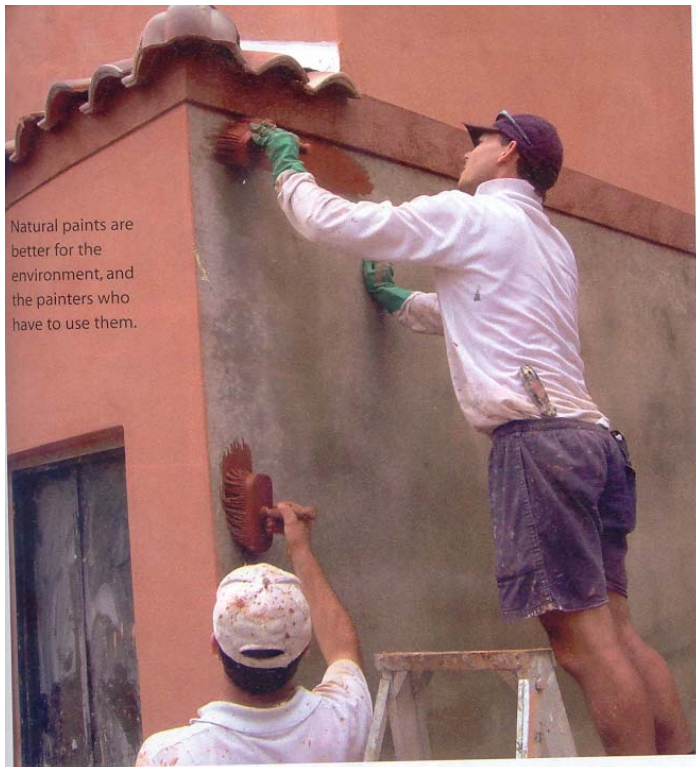
"It goes right up to the guy who can't stand walking behind a woman who had recently shampooed her hair," says Winder. "I've seen people who are so sensitive that they have to move out to the sticks and live in a totally chemical-free house."

In addition to health concerns, paints that dominate the market are predominantly derived from oil, a non-renewable resource, and are energy-intensive to produce. One tonne of paint can produce 10-30 tonnes of non-degradable waste.*

Meanwhile, the wash up of paint equipment is extremely polluting to the septic system and/or groundwater. According to the Greenhouse Trust, even water-based acrylic paints require a dilution ratio of 1 part paint to 40 million parts water to render them harmless for entry into the sewerage system (see box on previous page).

Signs of change

The good news when it comes to paint is that there has been a big push to remove dangerous solvents, replacing old formulations that could be composed of up to 40 per cent solvents, either with lower-risk solvents or water. However, Australia is still way behind Europe



Natural paints are better for the environment, and the painters who have to use them.

which has been legislating against VOCs in paints for a long time – and is the source of many of the non-toxic paints sold here.

“Most [conventional] water-based paints do tend to have lower levels of solvents like toluene and xylene and so on, but that does not mean they are solvent-free,” says Winder. “Often, water-based paints contain other chemicals that are similar to solvents, such as glycol ethers, which will also evaporate off, but they tend to be present in concentrations that do not create as many problems as solvent-based [oil] paints.”

Examples of new-style mainstream paints with lower-risk formulations include Watty's i.d. range and Dulux's EnvirO2, while Porters Original Paints have been making some low- or zero-VOC base paints (in particular lime wash, milk paint) for years. However, the tints for these three companies are not toxin-free, so check first.

Deborah Preston says the new formulations may be equivalent (in their low level of toxicity) to low-VOC synthetic paints such as Oikos, but not once tints are added.

“These paints are often assessed for toxicity on the base paint alone but once a tint is added, the toxicity rises,” she says.

“In contrast, all the Oikos paints, for instance, are lower risk and take into account the toxicity of the tints.”

Going natural

Rick Roberts, owner of The Natural Paint Place in Sydney, is used to dealing with people who are unusually sensitive to solvents off-gassing from paints.

“Most people are not affected by them,” he says. “They might have some small reaction but it doesn't bother them too much and they continue on. But the research I've done suggests about 15 to 20 per cent of people will have some sort of reaction to low exposure to chemicals – they simply can't cope with the off-gassing from synthetic paints.

“A big part of our business is pregnant women. Mums-to-be tend to paint the baby's room or its cot, and that poor little baby with no immune system is breathing in all those toxic chemicals that are in paints.”

Roberts markets a German brand of

paint called Bio (now mostly manufactured in Adelaide), which he says contains only “plants and minerals”. Typical ingredients in Bio's enamel paint include castor oil, soya bean oil, safflower oil, lemon peel oil, ethanol and talc. Roberts points out that most of the 150 raw materials in his paints are “considered to be food grade”.

Bio is just one of a number of the ‘natural’ paint brands now on the market in Australia (see list). These go beyond even the low-toxicity synthetic paints in their gentleness on humans and the environment.

One drawback of paints that use plant oils as a solvent is that the drying times are longer than for conventional paints. It's something Brad Robinson says he has to explain carefully to his customers.

“It does upset some of them,” he says. “We're kind of in a ‘here and now’ society so some people want things done and finished as quickly as possible, and they don't want to wait around until paint dries. The biggest stumbling block is to get people to realise that it is going to take a little longer.”

However, for wall paints we are talking hours rather than days in most cases, with a low-VOC acrylic taking approximately two to four hours longer, and a totally natural paint perhaps four to six hours. Also, the colour range of natural paints is often less than conventional paints, although some can be colour matched to other charts.

There is also a cost factor – the paints are typically around the price of ‘premium’ conventional paints, and may cost more in labour to apply because of the additional drying time.

However, for Robinson at least, there are still plenty of people who are not in too much of a hurry and who prefer their freshly painted house to smell of, say, lemons.

“I'm booked up right through to next year,” he says.

*(Edwards and Lawless, 2002; The Greenhouse Trust, 2004).

