



Colour your world green

by Angela Petruzzi

Can the paint I use make a difference to my health and the environment?

Yes it most certainly can. By reducing the negative impact of paint, we can end up having a neutral or positive effect on our personal health, our home environment and the environment in general.

Typically, paints are made up of four basic elements:

- pigments to achieve colour;
- resins to hold the pigment to the surface after application;
- solvents VOCs (volatile organic compounds) which may be oil- or water-soluble;
- and numerous 'additives' such as drying agents and anti-fungicides.

Once the paint is applied, the solvents evaporate, leaving behind the pigment, resin and some of the 'additives'. This evaporation results in the creation of the 'new paint' smell. Solvents are necessary for paints and oils to allow for easy applications. This is where the types of VOCs used are very important. Unknown to many, conventional solvents used will continue to 'off-gas' for a long time, even after the smell has disappeared. It is estimated that more than 80,000 tonnes of VOCs are released annually into the atmosphere above Australia. These VOC emissions, which are not plant-based, contribute to harmful ozone formation and of course are detrimental to our health. Inhaling this potpourri of chemicals has also been linked to sick building syndrome and painters syndrome – disorders that may cause damage to the kidneys, liver, respiratory system as well as leading to headaches, forgetfulness and, in the worst cases, serious brain damage.

But there is good news!

As people are becoming more aware of the risks associated with conventional acrylic, petrochemically-based paints, many are turning to the natural alternatives. 'Green Paints' are becoming more popular and more readily available. Europe has led the way in introducing less harmful, plant-based solvents in paints and finishes for many years. However, even natural solvents such as turpentine and orange peel oil may be harmful to human health. These can be highly irritating to the skin and may cause other conditions if used in high quantities or in industrial strength. For this reason, one manufacturer of natural paints introduced the isosalphates – synthetic solvents that are also used in the pharmaceutical and food industries and which have a very low level of toxicity. Isoaliphates are now well-established as paint solvents in European natural paints. Australia has begun looking at these products, but we still have a long way to go.

Some benefits of choosing natural, plant-based paints with low VOCs are reflected in your health. Reduced toxins aid everyone, not just those of us that have allergies or sensitivities. The pleasant and natural smell during application of natural paints allows the painted areas to be occupied sooner with no headaches, dizziness or nausea. The reduced use of synthetic chemicals also lowers water- and ozone-depleting contaminants, thereby helping to reduce our environmental impact. Furthermore, they are fully biodegradable and are certainly not detrimental to our waterways as many of the synthetic water-based paints are.

Natural and low-VOC paints and finishes are now receiving more publicity in the media, not just through magazines such as this, but more and more in what we describe as the 'mainstream press. Whilst there are slightly higher prices attached to these types of paints and finishes, this can be balanced with the benefits to our health and the world. Furthermore, the extra cost can be offset by the extremely low consumption of those natural paints.

If you compare the price of a 1 m² painted surface, you'll find that you need much less natural paint than synthetic paint. Not to mention the potential medical bills which you may incur from using 'conventional' paints and finishes. If the environmental benefits do not sway us to pay a bit more, then surely the question, "What price do we put on our own health?" is a very convincing argument.

Water-based paints and varnishes are seen as an alternative. If we are to use water as a solvent for vegetable oils, you need even more chemicals because water and oil do not mix. We have all seen evidence of this in our school science experiments. It is a fundamental fact. By using all those 'necessary' additives, you are formulating a product which contains a high number of chemicals and which does not evaporate quickly but stays in the dried film. There it is, off-gassing for a long time, and people living in that area will inhale those toxic chemicals over a long time period. This could contribute to asthma and other diseases of the bronchial tract.

Consider what happens with paint run off – especially when these products reach our waterways. They may break down to a degree, but they can cause waterways to become murky,

preventing plant life from performing photosynthesis. In addition, these paint particles become trapped in the gills of fish, choking them and causing fish-kill. How often have we heard in the media of contaminated waterways and dead fish being found? How many painters and DIY hobby painters still wash their brushes down the drain?

It is interesting to note here that there are over 100,000 chemical compounds used in building materials and finishes. Unfortunately for us, scientists only know the toxicological data for less than half of these. Their knowledge of how they react in a certain combination or how they affect humans or the environment is even sketchier.

There are many other technical and chemical factors to consider when searching for the right paint product. What evidence is there that there are no solvents (water is also a solvent), or other sinister emissions left behind after the drying process? No or low smell does not necessarily mean no chemicals.

What to look out for

The use of language is quite tricky when looking at product information. For example 'low-odour' does not mean 'no VOC'. Some manufacturers use other chemicals to mask the odour. The VOCs are still there, however. Unfortunately the label does not always contain much useful information.

Do some research. Obtain a data sheet; this is a good place to start. The pace of change has become so rapid that new products are being introduced into the marketplace at an alarmingly high rate. The labelling laws in Australia still do not require a listing of the ingredients used, let alone the VOC contents of a product as is required by European laws.

This is where our level of trust is tested against our motivation to do research. There are many chemicals used that require knowledge of their short- and long-term effects before an accurate decision can be made. If we do not wish to do all this research, then we are in the same position as most of the population. We need to trust the labelling and, given that producers of conventional paints are minimalists when it comes to labelling, we need to think a bit harder. Most of the producers of natural paints and finishes are keen for us to have all the information we need. If we check the level of ingredients listed and use some of the basic information in this article we are on our way to making an informed choice, a choice that will benefit our health and the environment.

The variety of low VOC and natural paint finishes is growing. They are more accessible than ever. Learning about your options and the benefits and risks of conventional vs natural paints is not difficult and the benefits will, in the long run, make it very much worth your while indeed. Have fun with your next painting project.

Angela and her husband Robert have had extensive experience in using the Livos range of products. Their passion is to provide healthier alternatives that work.
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