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We at dogbog.com hq are sourcing the best materials we can for our products, and printing our tees with PVC Phthalate free inks – and here's why.



PVC and Phthalates ^ The Facts

PVC, polyvinyl chloride, has been in the news quite a lot in recent years because of its impact on the environment. Pressure groups have been campaigning against its use, and there is also a trend among large, environmentally sensitive companies to reduce its use where possible.

Where is PVC used?

PVC is a very popular plastic. Most people will be aware of unplasticised PVC (uPVC) for building purposes which is a high volume use of this plastic. As well as construction, other users of large quantities include transport, packaging, medical and the electrical industries; all of these have borne the brunt of pressure to replace it with alternatives. The same will apply to printers.

One area where PVC resins are very common (along with phthalates) is in plastisol textile inks. This is an area where the reduction in the popularity of PVC as a substrate will not have an impact on the inks but there is pressure from end-users to move away from both PVC and phthalates.

The Environmental Health and Safety Issues

The issues related to PVC are numerous, they relate to the manufacturing process, the additives used with the plastic and the final disposal.

Differently from other plastics, PVC has a number of negative aspects related to its manufacture. They include the use of chlorine (given that other chlorine containing chemicals have been reduced e.g. CFCs and PCBs), the production of hydrogen chloride and chemicals like dioxins as by-products. Dioxins and similar chemicals have been associated with adverse effects on the human body and more evidence to back this up is continually being discovered.

Dioxins are also a problem if PVC is not disposed of correctly; if an inefficient incinerator is used then these chemicals can result.

Other disposal issues are that PVC is difficult to recycle and, is not biodegradable.

The most common concern raised about PVC relates to the additives that are used with it. Additives are an essential aspect to PVC as it is the additives that often make it so versatile. Such additives include stabilisers, plasticisers, pigments and fire retardants. Many of these additives have adverse safety and environmental impacts, although over the years this has been recognised and lower toxicity additives have become the standards. The main concern over the additives used in PVC has centred on the plasticisers used, typically phthalates, to allow the plastic more flexibility. The more that is included in the mix the more flexible it is.

What are phthalates?

In textile printing, they are used in plastisols as the carrier for the resin and pigment etc. They are essentially a non-volatile equivalent to the solvent in solvent-based inks and paints. Phthalates are claimed to be endocrine disruptors. These are chemicals that have been linked with generating either sex changes, or unbalanced levels of certain sexes within the marine environment. Phthalates, when ingested into the body, are under investigation as they could potentially be harmful. It is because of this that phthalates are currently being removed from childrens toys as a precautionary measure, in particular from dummies or pacifiers. It is also currently recommended that garments for children under 2 years old (e.g. Öko-Tex Standard class 1 'Baby wear 0-2 years') should not be printed with phthalate based plastisols for the same reasons.

How PVC compares with other plastics?

In general, the latest evidence suggests that production, disposal and recycling of alternative plastics such as polyethylene and polypropylene are less environmentally damaging but the additives used in them are the often the same as those used in PVC. That is why more and more studies are being undertaken to try and allow for informed decisions to be made. In the meantime, the best advice is to minimise the use of such materials, recycle plastics as much as possible and if that is not possible then make sure that they are disposed of correctly.