



- ▶▶ [Home](#)
- ▶▶ [What are Phthalates?](#)
- ▶▶ [Phthalate Types](#)
- ▶▶ [Applications](#)
- ▶▶ [Health and Environment](#)
- ▶▶ [REACH regulations](#)
- ▶▶ [EU Risk Assessments](#)
- ▶▶ [Classification Labelling](#)
- ▶▶ [Eco-Profiles](#)
- ▶▶ [Alternatives](#)
- ▶▶ [Media Comment](#)
- ▶▶ [Questions & Answers](#)
- ▶▶ [Technical Papers](#)
- ▶▶ [Links](#)
- ▶▶ [Press releases](#)
- ▶▶ [Notification by RSS](#)



## What Are Phthalates?

Phthalates (pronounced THAL-ates) are organic chemicals produced from oil and are the most commonly used plasticisers in the world. They are a family of chemical substances that have been in use for about 50 years, primarily to make polyvinyl chloride (PVC) soft and flexible. Although the various kinds in use today have some structural similarity, each one is different in the way it performs.

Phthalates look like clear vegetable oil and have little or no smell. We are all familiar with the products that are produced using plasticisers but we often take for granted the benefits they bring ... flexibility, durability, longevity, and low cost.

Phthalates are not used alone as they are always incorporated into an end product such as something that is made of PVC. This can include everything from PVC flooring and cable sheathing to life-saving medical devices. When phthalates are added into the vinyl manufacturing process they act as a softener and a lubricant.

Thanks to plasticisers the range of applications in which PVC is used have been greatly extended. They have been part of the revolution to provide low cost, high performance materials that make our everyday lives much easier.

Not all phthalates are used as plasticisers for PVC. Different phthalates keep nail polish from chipping, make perfume linger longer, or make tool handles strong and more resistant to breaking. Others help adhesives, sealants, paint pigments and many other materials perform their jobs better.

Because phthalates are so widely used, they have undergone extensive testing for possible [health and environmental effects](#) and are among the most widely researched of all chemical substances. Research findings and current assessments of the health and environmental effects of phthalates clearly show that they do not pose a risk to human health or the environment.

Phthalates do not persist in the environment; they biodegrade readily. They do not accumulate in animals or humans; inside the body, they break down quickly and are excreted. Most important, in their long history of beneficial use, there is not one known case of them ever having caused anyone any harm. To the contrary, they have contributed not only to our increased well-being in everyday life but they are also important and often unique components of many of today's life saving medical devices.



- ▶ [Home](#)
- ▶ [What are Phthalates?](#)
- ▶ [Phthalate Types](#)
- ▶ [Applications](#)
- ▶ [Health and Environment](#)
- ▶ [REACH regulations](#)
- ▶ [EU Risk Assessments](#)
- ▶ [Classification Labelling](#)
- ▶ [Eco-Profiles](#)
- ▶ [Alternatives](#)
- ▶ [Media Comment](#)
- ▶ [Questions & Answers](#)
- ▶ [Technical Papers](#)
- ▶ [Links](#)
- ▶ [Press releases](#)
- ▶ [Notification by RSS](#)

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## EU Risk Assessments

**The five main phthalate plasticisers, DINP, DIDP, DEHP, BBP and DBP have all undergone comprehensive European Union Risk Assessments conducted under European Union Regulation 793/93. This legislation, which is now replaced by the new EU chemicals legislation REACH, sets out a framework for the evaluation of the risks to human health and the environment from substances.**

Under the Regulation 793/93, substances were prioritised for risk assessment on the basis of their production volumes. For each prioritised substance, experts from one national government volunteered to draft the European Union's assessment of the substance.

In each case the rapporteur country worked with other national experts, industry and third parties to collate data and draft an assessment in the form of a draft risk assessment report.

This comprehensive assessment of all existing scientific evidence examined the properties of the respective phthalates, the levels at which the substance may cause adverse effects and the worse case scenarios of exposure.

This assessment of exposure examined both regional exposure levels and exposure via routes such as consumer articles. The draft report was then agreed by consensus with technical experts from all European Union national governments.

### Scientific review

The Risk Assessment Report was then peer-reviewed by the European Union's highest source of independent scientific advice at that time, the Scientific Committee on Toxicity, Ecotoxicity and the Environment, which gives its opinion to the European Commission on the quality of the risk assessments.

### Conclusions of the Reports

On the basis of the Risk Assessment Report, national experts either recommended that there was no need to adopt any further measures than those currently in place to protect human health or the environment, or they proposed measures to be taken to reduce the risk.



The conclusions were agreed by European Union national governments and the European Commission and were subsequently published in the Official Journal of the European Union and on the European Commission's Joint Research Centre website.

### OECD

The Risk Assessment Reports are also presented to the Organisation for Economic Co-operation and Development as a contribution to the Chapter 19, Agenda 21 goals for evaluating chemicals, agreed at the United Nations Conference on Environment and Development, held in Rio de Janeiro in 1992.

The risk assessment reports, summary reports and the announcements in the EU Official Journal are available on the following web pages:

- [DINP](#)
- [DIDP](#)
- [DEHP](#)
- [BBP](#)
- [DBP](#)

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**British Polymer  
Clay Guild**

## Fimo polymer clay workshops December 13/14th 2007 Neumarkt, Germany

by Pat Goodall-McIntosh

Philippa Todd

Angie Scarr

[Home](#)  
[Forum - Members only](#)  
[Website - Members Only](#)  
[Announcements](#)  
[Articles](#)  
[Regional Activities](#)  
[Midlands Region](#)>  
[...Programme 2009](#)  
[London Region](#)  
[Mid-Southern Region](#)  
[Non UK](#)  
[Activities](#)  
[Polydays 2008](#)  
[Polydays 2005](#)  
[Polymer clay](#)  
[Membership](#)  
[Membership Application](#)  
[Tutorials](#)  
[Hints & Tips](#)  
[Gallery](#)  
[Clay Suppliers](#)  
[Links](#)

Three of us - Angie Scarr, Philippa Todd and Pat Goodall-McIntosh - travelled to Germany before Christmas at the invitation of Eberhard Faber, the manufacturer of Fimo polymer clay. We had met with Nils Henssen (Director Marketing) and Kerstin Humplmair (Product Manager) in Birmingham in September where we had discussed our concerns about the formula changes in Fimo Classic polymer clay. The trip to Germany was a follow on from that initial meeting.

It was very gratifying how seriously Eberhard Faber were taking our concerns. Not only had the three of us come from England but three professional German makers - a miniaturist and two jewellery makers - had also been invited. The plan was that we would take part in workshops where we could demonstrate our difficulties concerning the new formula Fimo Classic. The workshops were over two days and many of their staff were involved. What with Eberhard Faber chemists, quality controllers and creative people, plus three of their senior directors, there were eighteen of us taking part in the workshop.

It was explained that the changes in the formulation of Fimo Classic had been dictated by changes in the European Law concerning the uses of Phthalates (a constituent of the plasticizer used in polymer clay) in items classified as a toy. Any item that will be used by children under 14 has to comply with these standards. What's more, European law defines all clay-like materials that can be baked in a home oven as toys, and this of course includes Fimo Classic. It is therefore not possible for the "old" formula to be produced anymore. Curiously, American law is the exact opposite; Polymer clays must be described as "art and craft materials", not as toys, but their manufacture is controlled by equally stringent regulations. The changes in colour (especially in Bordeaux Red) are due to changes in the availability of certain pigments.

Eberhard Faber had taken advantage of the opportunity afforded by the necessity to change the formula to address complaints (especially from American artists) concerning the

firmness of Fimo Classic. They therefore designed a clay that does not harden off as it ages, that is consistent in its manufacturing process and is softer and therefore easier to condition

However I think it came as a surprise to them that the very properties they were trying to resolve (i.e. the firmness of the clay and its tendency to become firmer as it aged) had been the very properties that the fine scale modellers and some caners and jewellery makers looked for, and why Fimo Classic had been their clay of choice.

The opportunity to actually demonstrate our concerns was invaluable to all parties. It is difficult to describe in words why, for example, a cabbage leaf modelled in the "old" formulation works and the one from the new formulation does not. In this case, it was certainly true that a picture is worth a thousand words. Similarly the complaint "the clay is too soft" is not very helpful when that is all the information they are given.

Angie and the jewellery makers demonstrated their difficulties with the caning properties of the new formula Fimo Classic, and the difficulties associated with Fimo Translucent (now in the "Effects" range). Pat and Philippa concentrated on the difficulties when using Fimo Classic for fine scale modelling.

We also expressed concerns about the reduction in the baking temperature of Fimo classic (from 130° C to 110° C) with the resulting incompatibility with Liquid Fimo that has a baking temperature of 130° C. We were reassured that, whilst the scientific instruments show that the optimum baking temperature for Fimo Classic is 110° C, it is entirely safe to bake it at 130° C.

Where do we go from here? The folk at Eberhard Faber were attentive to our concerns, and now have a much clearer idea as to what our complaints mean and what we wish for in a polymer clay. Whether they can accommodate the requirements of what is a niche market (i.e. the fine scale modellers and caners) we will have to see.

We would like to thank Nils and Kerstin for making our stay such fun. Not only did they take us to the famous Christmas market in Nuremburg, but they wined and dined us and added a serenade or two. Thanks also to Herman Bauer, International Sales Director, for his generous hospitality. Our

thanks to Dr. Gunther Pabst who not only listened to our concerns but showed us round the factory (watching pencils being made is, I admit, much more fun than watching Fimo being mixed!) Our thanks also to Rachael Woolley, Brand Manager, Staedtler (UK) Ltd. who escorted us with such grace and charm.

Philippa Todd  
Pat Goodall-McIntosh  
Angie Scarr

[Back to Articles](#)

This page was last updated on 05-Feb-09

[Back to Top](#)

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## Polymer Clay Safety - reassuring words from the Doc!



By DocSarah

Doc Sarah is the self-described “Guild Cheerleader and Web Tinkerer” for the [PAPCG \(Philadelphia Area Polymer Clay Guild\)](#) and as her username indicates, a medical doctor. Recently, in a discussion about the safety of polymer clay, and concerns over the fumes released when it burns, she had this to say:

“The fumes of burning clay are an airway irritant. (The burning generates a low level of hydrochloric acid in gaseous form.) Basically that’s a fancy way to say the fumes stink and cause irritation. It is short lived. Of course children have smaller airways and may be more sensitive so

it's a good idea to keep up the ventilation to dilute the air. (if there is a risk of burning.) But don't worry, there is no hidden toxic effect or delayed issue. If you don't have any problems now, you won't have any. Furthermore, if there is any irritation, when it's gone it's gone. You can't take a product certified non-toxic and do anything to it to make it toxic. Burning will make it an irritant, but NOT a toxin per se (using medical definitions.)"

Doc Sarah is a helpful and sensible voice on the Polymer Clay Central forums, and she would probably want me to remind you that it is a good idea to wear some sort of dust mask when working with any mica powders or other particulate matter. That will keep your lungs happy and smiling like the ladies she made from her first face cane! (pictured above - she gives Barbara McGuire credit for helping her overcome her face cane fears!)

Visit the PAPCG Guild's blog at: <http://papcg.wordpress.com/>

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