

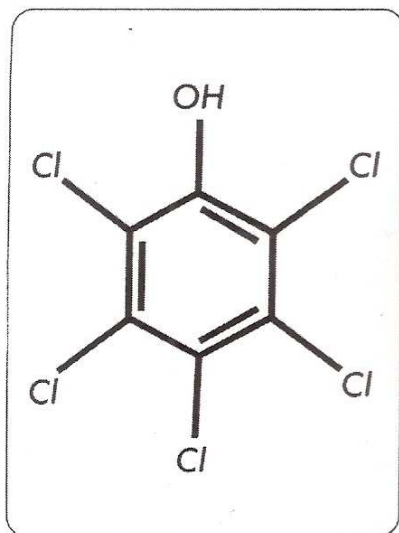
**FOCUS**

Figure 4: Structure of pentachlorophenol

and tributyl tin (< 25 parts per billion). In the absence of a harmonised standard SATRA has developed its own internal method for the determination of organotin compounds (SATRA TM 277: 2004).

**Pentachlorophenol (PCP)**

Historically used as a preservative in many natural products (such as leather, cotton and wood) pentachlorophenol (Figure 4) has been shown to be a carcinogen and is restricted in Europe under Council Directive 91/173/EEC. This prevents its use in concentrations greater than 0.1% (1000ppm) by mass in any products, substances or preparations placed on the market.

An EC Council Directive is an instruction requiring that member states implement national legislation in order to fulfil the decision of the directive.

A so-called safeguard clause exists to allow individual member states to impose tighter regulations than those required by the directive where they consider the limits set do not fully address the risks. Germany has used this clause in the case of pentachlorophenol and implemented national legislation that limits the presence of pentachlorophenol to a maximum of 5ppm. This level has effectively taken over as the EEC limit.

**Perfluorooctanoic acid (PFOA)**

Also known as C-8 this is used as an intermediate chemical in the

manufacture of items such as non-stick cookware and stain-resistant clothing. Studies have shown this to have potential as a bioaccumulative toxin, with some showing it to be a potential carcinogen. A recent announcement by the USA Environment Protection Agency (EPA) called for a reduction in the levels of PFOA emitted to the atmosphere by manufacturers.

**Pesticides**

Recent EU regulations have seen the withdrawal from use of a number of domestic and agricultural pesticides because of environmental and health concerns. Other regulations exist to control and regulate the manufacture and use of those pesticides that are still permitted.

These regulations, however, do not control the use of pesticides in other countries, nor do they take into account material present in the environment from past use.

Many suppliers stipulate that finished goods — for example, those made from cotton — shall be free from pesticide residues.

The European Eco label provides lists of those pesticides considered as being restricted for the different material types and can be taken as a guideline.

**Phthalates**

There have been concerns for a number of years over the use of certain phthalates as plasticisers in flexible PVC, with restrictions being placed on their

use in children's soothers and teething since 1999.

EC Council Directive (2005/84/EC) was approved on December 15, 2005, and addresses phthalates in toys and childcare articles. This now extends the restrictions of three of the phthalates to all toys. Table 1 shows how these new regulations will affect the use of phthalates.

Guidance on those items covered states that an item is classified as being able to be placed in the mouth if a single dimension is less than 5cm. Although children's footwear is not specifically listed within the scope of the directive, SATRA recommends that, under the requirements of the General Product Safety Directive, footwear intended for young children should comply with these regulations.

**Toluene**

In April 2004 the European Commission adopted a proposal to restrict the marketing and use of toluene following studies showing that with repeated use it has acute toxic and narcotic effects, while contact with the eyes causes irritation. Due to its excellent solvent properties toluene has found a wide variety of use in consumer products such as paints, adhesives, thinners, degreasers, varnishes, inks and other formulated products requiring a solvent carrier.

EC Council Directive 2005/59/EC amends the Marketing and Use Directive for the 28th time and states that toluene may not be placed on the market or used as a substance or constituent of

Phthalate	Abbreviation	CAS number	Restrictions
Bis (2-ethylhexyl) phthalate	DEHP	117-81-7	No greater than 0.1% (1000ppm) by mass of plasticised material in toys and childcare articles
Dibutyl phthalate	DBP	84-74-2	
Benzyl butyl phthalate	BBP	85-68-7	
Di-isononyl phthalate	DINP	28553-12-0 68515-48-0	No greater than 0.1% (1000ppm) by mass of plasticised material in toys and childcare articles intended for children under 36 months and which can be placed in the mouth
Di-isodecyl phthalate	DIDP	26761-40-0 68515-49-1	
Dioctyl phthalate	DOP	117-84-0	