

Pretty Nasty - questions & answers about phthalates

What are phthalates?

Phthalates are a large family of synthetic (industrially made) chemicals. Eight billion kilograms are manufactured every year.

How do you pronounce phthalates?

Tha-lates. The ph is silent.

What are they used for?

Phthalates are primarily used as 'plasticisers' to make polyvinyl chloride (PVC or 'vinyl') plastic flexible. Ninety percent of global phthalates use is for this. Phthalates are a principle component in flexible PVC products such as toys, clothing, flooring, wallpaper and medical products.

They are used in cosmetics to add flexibility, to give an oily 'moisturising' film and help dissolve and fix other ingredients. They are also used as solvents in fragrances and to 'denature' the alcohol content of cosmetics (make it unpalatable so people won't drink it).

Alternatives to this potentially harmful phthalate addition, such as lavender oil, exist.

What is the problem with them?

Phthalates are the most abundant industrial pollutants in the environment, and are widely present in air, water, soils and sediments. Some have been measured in virtually all fresh water and marine environments including Antarctic pack ice and deep-sea jellyfish. Phthalates are released into the atmosphere during manufacture, can leach from products that contain them, can contaminate food and can be ingested, breathed or absorbed into the body.

Various animal tests* have shown they can cause reproductive and developmental harm. These effects include:

- Decreased fertility in females
- Foetal and birth defects
- Reduced survival of offspring
- Altered hormone levels and uterine damage
- Damaged prostate, penises and testicles in male foetuses and infants

Several regulatory agencies have concluded that these studies are relevant to humans. They also correlate to some human effects, such as pregnancy problems observed in one group of women living near a pvc factory and in workers exposed to high phthalate levels.

All this is against a backdrop of disturbing trends in reproductive health, such as rising rates of testicular cancer - up 84% in the UK since the 1970s - and declining sperm counts across Europe since the 1930s.

Toxic effects on the liver, kidneys, heart lungs and blood have also been observed in animal studies.

The plastics and cosmetics industry have disputed that phthalates are a risk. They cite the opinion of the EC's scientific committee on cosmetic products and non-food products intended for the consumer, which declared in June 2002 that DEP (see below) was safe for cosmetics use¹. In the United States the Cosmetic Ingredient Review panel declared three phthalates safe just days after 'Pretty Nasty' was published. The panel of medical experts and scientists is funded by the cosmetics industry but with Food & Drug Administration and consumer representatives attending².

A recent study by researchers at Harvard University, published in December 2002, suggested a link between exposure to DEP and DNA damage to human sperm.

They plan to extend their research to test the preliminary findings³.

How do I know if a product contains phthalates?

Because most products do not require labels to identify whether they contain phthalates, **you probably can't tell**. Perfume ingredients don't have to be listed at all. If they are present as a by-product of processing, they won't be listed. If they are deliberately added for other purposes in cosmetics they should be listed: look out for chemical names or initials such as butyl benzyl phthalate (BBP), di(n-butyl) phthalate (DBP), di(2-ethylhexyl) phthalate (DEHP), diethyl phthalate (DEP), di-n-hexyl phthalate (DHP), di-isodecyl phthalate (DIDP), di-isononyl phthalate (DINP), dimethyliso phthalate (DMP), di-n-octyl phthalate (DNOP), mono-n-butyl phthalate (MBP), monoethylhexyl phthalate (MEHP) and monopentyl phthalate (MPP).

What is 'Pretty Nasty - phthalates in European cosmetic products'?

A report on tests commissioned by Women's Environmental Network, Swedish Society for Nature Conservation and Health Care Without Harm, Europe, on 34 top-selling cosmetic products on sale in the UK and Sweden. Products included perfumes, deodorants, hair sprays, hair gels and hair mousses. They included top-name brands by Boots, Chanel, Christian Dior, L'Oreal, Lever Faberge, Procter & Gamble, The Body Shop, Tommy Hilfiger and Wella.

What did it find?

- Phthalates were found in four out of five (79%) of the products tested
- More than half (53%) contained more than one phthalate
- Fourteen (40%) contained either one or both of two phthalates the European Union has recently decided should be removed from cosmetics (see below). All the perfumes, deodorants and hair sprays tested contained phthalates.
- In one product, phthalates made up nearly two percent of the whole.
- The most common phthalate found was DEP
- Phthalates were found in all five perfumes, all 10 deodorants and all five hairsprays
- Seven products were phthalate free. This shows phthalates are not essential - similar products can be made without them

Are phthalates legal?

Yes but

- In 1998 the Oslo and Paris Commission (OSPAR) listed DBP and DEHP among substances for priority action
- In 1999 the European Union passed an emergency ban that prohibits the use of DEHP, DBP, BBP, DINP, DNOP and DIDP in PVC toys designed for the mouth
- In 2001 the EU added DEHP and DEBP to its list of substances that may cause harmful reproductive effects. It classified them as 'category 2', which means they should be regarded as if they impair fertility or are toxic to development in humans
- The EU Scientific Committee on Cosmetic Products and Non-Food Products Intended for consumers (SCCNFP), the expert committee that assesses such matters, gave its opinion in September 2001: "SCCNFP considers that the presence of carcinogenic, mutagenic, or substances toxic to reproduction in cosmetic products is of concern to the health of the consumer."
- A European ban on DEHP & DBP use in cosmetics became law in Spring 2003. No cosmetics on sale in Europe after 11 March 2005 should contain DEHP or DBP.

Is the law adequate?

No.

Phthalates don't have to be listed on the label so you cannot be a responsible consumer and choose to avoid them.

The current safety regime takes insufficient account of real-life exposure to multiple phthalates from multiple sources every day, on top of exposure to other potentially toxic substances in general use.

Under the EU cosmetics directive (76/768/EEC) the industry is 'self-regulating'; they are responsible for safety assessments but generally only have to assess individual ingredients, not the whole product (except where skin penetration is more likely or if interactions between ingredients might form new potentially toxic substances); consumers can't see the results; cosmetics don't have to be reviewed by regulators or authorised before going on sale.

'Tolerable intake' or exposure levels are based on old information. For instance, the US Environmental Protection Agency (EPA)'s tolerable intake level is based on a study conducted in 1953, before evidence about the reproductive and developmental toxicity of DBP existed.

The general approach to testing within the industry is based on presumptions that:

- Chemicals that have been in use for years must be safe
- Lack of proof of harm proves a chemical is safe

Yet evidence of the potential risk some chemicals pose has either only come to light in recent years or hasn't been looked for at all. Closing your eyes so you can't see it doesn't make the monster go away.

What does 'Pretty Nasty' recommend?

Manufacturers should

- Clearly label all phthalate-containing products immediately while reformulating
- Test the ingredients in their products for phthalates or demand this information from their suppliers.
- Pledge to remove all phthalates from their products and perform appropriate quality control to ensure they are not present
- Apply the precautionary principle when formulating products by avoiding ingredients when there is evidence that they may cause harm, even if their effects are not fully understood.

The European Union should

- Introduce an unconditional ban on all substances, including phthalates, which cause concern for human fertility and development, and have toxic, mutagenic and/or carcinogenic effects
- Introduce regulations that require all ingredients in a product, including phthalates, to be clearly listed on the label
- Ensure the forthcoming framework legislation for chemicals, known as REACH, covers cosmetic products.

What consumers can do

- Send a "phthalate free now!" message to the manufacturers whose products tested positive
- Send a message to the EU Enterprise and Environment Commissioners calling for the above measures to be introduced
- Take the list of products with you when you go shopping, show it to the store managers and ask for their help in convincing cosmetic companies to produce phthalate-free products.

- Choose products from manufacturers that have already pledged not to use phthalates⁴

- Green People have pledged that they "have never used phthalates and never will"
- Hemp Garden has pledged the same
- The Body Shop has pledged "to avoid the use of phthalates in all our new perfumes used in products" and "aim to phase out the phthalates that remain in existing perfumes as soon as practicably possible."

*WEN is against animal testing and believes alternative methods of testing should be found. We recognise that tests on animals are not always relevant to humans. However, if tests have already been done, and no alternative tests results exist, and the results can reliably be taken to apply to humans, we will refer to them.

Sources

All information taken from 'Pretty Nasty: Phthalates in European Cosmetic Products', WEN, SSNC and HCWH Europe © HCWH, November 2002, except:

1. Cosmetic, Toiletry & Perfumery Association Ltd, letter to WEN 22/11/02.
2. Phthalates Esters Panel, American Chemistry Council, news release, 19/11/02
3. Duty SM, Singh NP, Silva MJ, Barr DB, Brock JW, Ryan L, Herrick RF, Christiani DC, and Hauser R. 2003. 'The Relationship Between Environmental Exposures to Phthalates and DNA Damage in Human Sperm Using the Neutral Comet Assay.' Environmental Health Perspectives, US Department of Health Dec 2002.
4. Correspondence between WEN & companies, Nov-Dec 2002.

Phthalates Q&A, © WEN, January 2003, updated May 2004.

Pretty Nasty - test results

The table below lists all the products tested for the report, 'Pretty Nasty: Phthalates in European Cosmetic Products' (November 2002).

WEN wrote to all the manufacturers of products bought in the UK about what had been found. Body Shop has pledged to remove phthalates from all existing and new formulations. Procter & Gamble has responded that it has a programme to remove phthalates from all its products. Lever Faberge has said there is no information in the report to change its belief that its use of phthalates in its products is safe. Boots retested their products and checked the production line for the source of the contamination. If they use phthalates they say they will declare it on labels.

* = contained phthalate/s (DEHP & DBP, banned in Europe with effect from March 2005).

Contains Phthalates	Phthalate Free
Products are listed under each heading in order of phthalate concentration.	
Perfumes	Perfumes
*L'Oreal: Lancome Tresor	All of the perfumes tested contained phthalates
*Unilever: Calvin Klein Eternity	
*Christian Dior: Poison	
Tommy Hilfiger: Tommy Girl	
*Chanel: no 5	
Deodorants	Deodorants
Lever Fabergé: Rexona 24 hr intensive	All of the deodorants tested contained phthalates
NOIRO: Herbina antiperspirant	
*Beiersdorf: Nivea "decompact"	
*Lever Fabergé: Impulse Oxygen Body Spray	
Lever Fabergé: Degree Fresh	
Lever Fabergé: Sure Ultra Cotton Fresh	
Lever Fabergé: Dove Original	
*The Body Shop: Aloe Vera	
ACO Hud AB Deodorant: ACO snabbtorkande	
Cederroth AB Deodorant: Bats, extra effektiv	
Hairspray	Hairspray
*L'Oreal: Elnett Satin	All of the hairsprays tested contained phthalates
*Wella Super Strong	
*Procter & Gamble: Vidal Sassoon	
*Boots: Essentials Natural Hold	
Procter & Gamble Hair spray: Pantene Pro-V Extra Hold.	
Hair gel	Hair gel
Lever Fabergé: Finesse Gel super strong	Boots: Stuff Rok; Coop: Blavitt Hargel; L'Oreal: Studio Line Creating Gel, super strong; P&G: Pantene Pro-V Classic Care; Wella: Shockwaves ultra strong max hold, Wella Styling Gel super strong.
Hair mousse	Hair mousse
Lever Fabergé: Fructis styling volume mousse	P&G: Pantene Pro-V smooth and sleek.
*L'Oreal Hair: Studio Line styling mousse	
Lever Fabergé: Finesse volume mousse	
*Wella AG: Wella Volume mousse	
Boots: Essentials	
*Wella AG: Shockwaves strong, big body mousse	