STILL DIRTY

A REVIEW OF ACTION AGAINST TOXIC PRODUCTS IN EUROPE

A report for WWF-UK by Philip Lightowlers
March 2004


STOP THE CHEMICAL CONTAMINATION OF OUR WILDLIFE AND CHILDREN
WE ARE ALL CONTAMINATED BY HAZARDOUS
STOP THE CHEMICAL
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Contents

Executive summary

Chemicals are an integral part of modern life: everyday products from computers to food packaging and detergents contain chemicals which can contaminate our environment and our bodies. Few have been adequately assessed for safety, yet exposure to these substances may be a key factor in rising rates of cancer, declining fertility and other reproductive problems affecting western societies.

This report illustrates the occurrence of hazardous chemicals in everyday products and reports on which EU member states have taken proactive measures to help protect their citizens and wildlife. In addition, it examines the scope for more precautionary action at the EU and member state levels. In particular, it highlights how little action the UK has taken to help reduce the chemical contamination of people and wildlife across the country.

Phthalates used in plastics and cosmetics have been linked to reduced sperm counts. LAS, a major washing powder ingredient, is poorly broken down in rivers and soils, and may be toxic to soil organisms. Lead is still in use and is particularly toxic to children and wildlife. Alkyl phenols and alkyl phenol ethoxylates, industrial chemicals used in plastics, pesticides and detergents, are toxic and mimic the female hormone oestrogen, causing feminisation of male fish. Brominated flame retardants, persistent chemicals widely used in electronic equipment, fabrics and plastics, are now found in human breast milk and wildlife, even in remote areas. Although little is known about their long-term toxicity, there are concerns about their potential effects on learning behaviour.

However, national action has been taken, mainly by Scandinavian countries, to help reduce our exposure to some of these highly toxic chemicals. Countries such as Denmark, Norway and Sweden have carried out research into the presence of chemicals, initiated public information campaigns, produced priority lists of hazardous chemicals, facilitated eco-labelling schemes, supported the development of safer alternatives, implemented awareness-raising programmes, established voluntary agreements with industry and implemented national bans on certain products. Examples include:

- a phase-out of phthalates in toys, initiated by Denmark;
- a virtual elimination of LAS from Swedish washing powder;
- the removal of lead metal and lead compounds from products in Denmark;
- the innovation of a safer alternative to lead flashing in Denmark;
- the mandatory phase-out of alkyl phenols and alkyl phenol ethoxylates in virtually all applications in Norway;
- campaigns to highlight the risks and presence of brominated flame retardants in certain products in Sweden;
- written action plans on brominated flame retardants in Norway and Sweden; and
- the substitution of brominated flame retardants for a phosphate-based alternative in electrical products and the removals of all brominated flame retardants from products sold by furniture retailer IKEA.

The UK

The UK government is failing to take action to help reduce its citizens' exposure to hazardous chemicals, despite high production levels of certain hazardous chemicals and independent studies that show contamination in people and wildlife.

Chemical contamination appears to be on the increase. Butter produced in the UK contains the highest levels of BDE (a brominated flame retardant) in the world, and rivers in the north-east as well as the North Sea are also contaminated with BDEs.

Furthermore, the UK has failed to carry out adequate research into the presence of hazardous chemicals in people, wildlife and the environment. Its list of priority chemicals is limited in scope and does not include substances deemed hazardous purely on health grounds, such as those that are carcinogenic, mutagenic or impair fertility.

Recommendations

Despite successful unilateral action in some EU countries, action would be more effective if it were initiated at the European level.

The proposed EU chemical regulations – the Registration, Evaluation and Authorisation of Chemicals (REACH) – will provide governments across Europe with a unique opportunity to help phase out some of the most hazardous chemicals and replace them with safer alternatives.

REACH must:

- phase out chemicals that are persistent and bioaccumulative;
- phase out endocrine disrupting chemicals; and
- substitute these with safer alternatives. Continued use should be allowed only where there is an overwhelming societal need, where no safer alternatives exist, and where measures to minimise exposure have been put in place.

The UK government should lead the way by supporting a robust European chemicals regulation to protect future generations of people and wildlife. By incorporating mandatory substitution, REACH could provide an improved framework for innovation in the chemicals sector and contribute to the development of safer chemistry. It could also strengthen the competitiveness of the chemicals industry and provide new markets for safer and more environmentally friendly products.

The UK government should:

- prioritise the needs of public health, wildlife and the environment;
- recognise the business, health and environmental benefits of the EU chemical regulations;
- commit clearly to robust EU chemicals regulations, which incorporate the substitution principle and phase out the most harmful chemicals where safer alternatives exist; and
- use its leverage in the EU to press other key member states to support a similarly robust position.

1 Introduction

The environment in which we live has changed radically since the birth of the chemical industry in the early 20th century. Through the air we breathe, the water we drink, the food we eat and the products we buy, we are now exposed to chemicals that were unknown only 50 years ago.

Some of these compounds persist in our bodies. Some are passed on to children in the womb and in breast milk. Some affect hormone levels – the chemical signals that regulate our bodies' growth and development. Yet we are largely ignorant about the long-term health and environmental effects of these chemical assaults.

Although the chemical industry has contributed to the prosperous lifestyles we enjoy in the West, our expectations of long life and good health are marred by signs that all is not well. Male reproductive health appears to be in decline, breast cancer affects one woman in nine and testicular and prostate cancers are on the increase, along with asthma and allergies such as hay fever and multiple chemical sensitivity.

The last 60 years have been studded with chemical disasters – most notably DDT, PCBs and dioxins, the nightmare chemicals which concentrate in fats, biomagnify in food chains and turn up in human breast milk. Carcinogenic chlorinated solvents pollute groundwater for generations. Fluorinated organic compounds are carried by us all in our blood. Persistent and bioaccumulative chemicals contaminate our children even before they are born. And endocrine disrupting chemicals, which interfere with the signalling systems in our bodies, have the potential to cause permanent harm at very low doses.

There are some 30,000 industrial chemicals being manufactured in volumes of more than a tonne a year, and many more are made in smaller quantities. Few have been adequately assessed for safety and for most, not even a basic set of toxicity information is available. Although there have been attempts to redress the balance and get the industry to provide data on its products, under the current system it may take many years to evaluate and, where necessary, ban a chemical or restrict its uses.

The European Commission's latest proposals for the Registration, Evaluation and Authorisation of Chemicals (REACH) represent a rare opportunity to ensure that hazardous compounds are recognised and withdrawn from the market. Even so, the time when all chemicals on the market are safe is many years away – so how can we protect ourselves in the meantime? Can we be given better information so that we can make better choices and reduce our risk?

This report examines examples of what EU member states with most proactive chemicals policies have been able to do to protect their citizens from chemical hazards, it asks what benefits have resulted from such action, and it examines the scope for precautionary action at the EU and member state levels.

2 Case studies

2.1 TOYS AND COSMETICS

Ubiquitous threat

Toys and cosmetics may both contain phthalates – a family of chemicals used as softening agents (plasticisers) in plastics and as solvents in personal care products. They are present in flexible PVC products such as vinyl flooring, food packaging, plastic bottles, plastic bags, blood bags, dialysis tubing, garden hoses, rubber gloves and toys. They can also be found in deodorants, perfumes, nail varnish, hand creams and body lotions.

Everyone is exposed to phthalates. They leach out of plastics into our food and water, they may be present in the air in our homes and cars, and we absorb them through our skin from cosmetics.

Some phthalates are reproductive toxicants, endocrine disruptors and possibly carcinogens. They cause deformities in developing animal foetuses and are particularly toxic to the testes. They feminise male animals and reduce sperm counts by blocking the male hormone testosterone. The young are particularly susceptible. Certain phthalates also attack the liver and cause liver cancer in rodents, although there is some debate about whether this is likely in humans.

Human exposure to phthalates is strongly suspected of being a factor in declining sperm counts, rising rates of male genital deformities such as hypospadias and undescended testes, and testicular cancer – a group of related disorders now known as testicular dysgenesis syndrome. Medical specialists such as Dr Richard Sharpe of the Medical Research Council's Human Reproductive Sciences Unit in Edinburgh have drawn attention to the rising incidence of these problems in western countries and the "intriguing parallel" with the effects of phthalates in laboratory animals.[1]

Phthalates have hit the headlines in the UK on several occasions in recent years, notably in a scare about levels of the compounds in formula baby milk,[2] exposure of infants and adults via medical products[3] and children's exposure from plastic teething toys[4]. Manufacturers and the plastics industry have always maintained that exposures are well within safe limits.

Phthalates in toys

Studies by Professor Nils Skakkebaek showed that young men in Denmark had low sperm counts and the highest rates of testicular cancer in the world. It is not surprising that the Danish public are particularly concerned about phthalates. The Danish Environment Protection Agency

[1] Sharpe, R. 2001, Toxicology Letters, Vol. 120, pp 221-232.

[2] ENDS Report 255, pp 5-6, Phthalates shock for food industry, April 1996.

[3] ENDS Report 335, p 35, DoH joins quest for non-PVC medical devices, December 2002.

[4] ENDS Report 268, p 30, Fresh squeeze on PVC industry over phthalates in baby products, May 1997.

decided to examine the potential exposure of young children to phthalates from plastic teething toys.

Its results, published in 1997, showed that three PVC baby teething rings could leach large amounts of phthalates if chewed by children, who would ingest phthalate doses well above safe limits. Many retailers removed these and similar products from sale.

Later that year, the Danish government responded by proposing a ban on phthalates in toys. The agency drafted rules, finally agreed in March 1999, that ban the use of phthalates in any toys designed for children aged up to three years.[5]

The ban has certainly achieved its aim of reducing infants' exposure to phthalates from toys and helped to ensure their reproductive development is not impaired. Toys containing phthalates are now found only occasionally in Denmark: the Chemicals Inspectorate carries out annual monitoring and chemical analyses of suspicious toys. Hanne Thygesen of the Inspectorate said that the first survey of infant toys in 2001 analysed 20 suspect toys, of which eight were found to breach the regulations. A second survey in 2003 also found eight toys in 34 suspect items examined.

Whether the reduction in phthalate exposure from toys will have any impact on the reproductive health of the next generation will only be apparent in the next 25 to 100 years, Mette Boye of the Danish Consumer Council (FBR) admits. Nevertheless, she believes that the ban is fully justified: "It is very important from a consumer point of view. It is clear from the scientific evidence that phthalates are toxic and migrate from teethers and there is a clear case for application of the precautionary principle. The Danish government is now exploring extending the ban to toys designed for three- to six-year olds.

"The ban is an important symbol that consumers can affect product policy to improve safety. Although the scientific evidence [on phthalates] was poor at first, the action has been justified by the conclusions of a recent draft risk reduction strategy for [the most widespread phthalate] DEHP which proposes to ban DEHP use in many consumer products including medical equipment."

One company which has welcomed the ban and even benefited from the measures is Coop – a leading retailer operating several chains of stores including Kvickly, Irma and SuperBrugsen. The company sells around 20 kinds of toy affected by the ban.

Coop director Mogens Werge said the company had realised there was an issue with phthalates in 1998, and even alerted the Danish and Swedish authorities. "I saw media reports about phthalates in underseal and car interiors. I realised if they can be washed out of those, then what about toys? We moved ahead of the legislation and stopped selling the toys in 1998. We got some credit from the authorities and we tried to make it known to the customer that we didn't sell them."

[5] Statutory Order no.151 of 15 March 15 1999.

Removing phthalate toys for infants did not prove difficult for the company. “It took only a few weeks,” Mr Werge said. Some suppliers had no idea whether their products contained phthalates. In some cases the packaging boasted it was PVC-free while the product itself was made of PVC plasticised with phthalates.

In taking a proactive stance, the company was able to get what amounted to free advertising from Green Information, a state-funded group which runs a popular website alerting consumers about environmental issues and highlighting safer products.

However, the ban has not been welcomed by all retailers. Annette Skjoldager, a political adviser to Danish Commerce and Services (DHS), an industry organisation representing 25,000 commercial and service enterprises, says that the ban has made it difficult for retailers to buy products on the international market. “The Danish market is not that big – only 5 million people – so it is very difficult when Denmark goes ahead alone. We would prefer legislation to be at EU level – that would shift the problem on to [multinational] companies like Hasbro and Mattel.” They would then be forced to reformulate their products for the EU market, she believes.

Phthalates in cosmetics

In the UK and most other countries, phthalates are widely used as carriers in perfumes, as denaturing agents in products containing alcohol such as deodorants and hairsprays, and as plasticisers in nail polish. A survey by environmental groups in 2002 found that 80 per cent of the cosmetics they sampled contained phthalates, including products made by Boots, Proctor & Gamble and Lever Fabergé.[6]

Research in the US has shown that women of child-bearing age have relatively high exposure to phthalates, probably because they are major users of cosmetics.[7] Another shock from a national US monitoring study is that children have higher exposure to many kinds of phthalates than adults.[8]

As well as removing phthalates from infants’ toys, Coop has also removed them from all its own-brand cosmetics. This has put pressure on other cosmetics brands to follow suit, and it has not been the only retailer to take action.

Matas, a big Danish personal care and pharmacy retailer similar to Boots in the UK, has removed phthalates from its range of own-brand products. Phthalates are no longer allowed in perfumes and their use as alcohol denaturants has been replaced with Bitrex – a safer alternative often added to household products to make them unpalatable to children. Bitrex is already used by retailers such as Marks and Spencer, Safeway, Sainsbury’s and Tesco.

Matas’ environment director, Henrik Engberg Johannsen, explained that the company was planning to mount a campaign to get all its suppliers to phase out phthalates in the autumn of

[6] Pretty nasty: Phthalates in European cosmetic products, available at www.wen.org.uk/health/prettynasty.htm

[7] ENDS Report 308, pp 12-13, Phthalate exposure study points to cosmetic sources, September 2000.

[8] Second national report on human exposure to environmental chemicals, available at: www.cdc.gov/exposurereport/

2004. Coop has also written to the government to question the widespread use of phthalates as denaturing agents.

The case of phthalates demonstrates that it is generally easier for EU states to act together in banning hazardous substances so that their combined market power makes it difficult for even global corporations to ignore concerns over chemical safety. On the other hand, even individual companies can seize market advantage by being proactive and phasing out hazardous chemicals in the products they formulate and sell.

The Danish experience also underlines the importance of proactive research into chemicals in products, and the necessity of policing chemicals in products in the marketplace.

2.2 DIRTY WASHING

Clean clothes, dirty water

Linear alkylbenzene sulphonate, known as LAS, is the major surfactant in washing powders and liquids in the UK. LAS persists in river sediments and accumulates in sewage sludge. When the sludge is spread on farmland, LAS may be toxic to soil organisms.

Large quantities of LAS are discharged into the environment via the sewage network, although detergent manufacturers are reluctant to disclose exactly how much. According to a recent Danish study, some 320,000 tonnes were sold in the EU in 1998. [9]

LAS is the single most abundant organic chemical found in sewage sludge in the UK.[10] But major manufacturers such as Lever continue to use LAS in their products, even though they admit that other surfactants are more biodegradable.[11]

In Scandinavia, LAS has been the subject of environmental debate for more than a decade. The Swedish Society for Nature Conservation (SSNC) began a campaign to promote more environmentally friendly laundry detergents in 1991. LAS was one of several chemicals in the products which the society felt were unnecessarily harmful to the environment.

Consumer power

The SSNC's campaign was based around research which identified products that did not use LAS or other poorly degradable chemicals. And the SSNC had the support of three of Sweden's largest retailers – ICA, KF/Coop and Dagab/Axfood – in promoting those brands which met the criteria. Laundry detergents were among the first products in Sweden to carry yellow labels on the supermarket shelf bearing the words "Bra Miljöval" or "Good Environmental Choice".

Bra Miljöval

[9] ENDS Report 296, pp 31-32, Scandinavia leads attack on major surfactant, September 1999.

[10] ENDS Report 295, pp 16-17, Tougher standards recommended for sludge use in agriculture, August 1998.

[11] ENDS Report 231, p 27, Lever claims upper hand in "green detergent" war, April 1994.

It was the start of something big – an eco-labelling scheme which was to change the Swedish marketplace for ever by giving customers information about the environmental performance of the products on the shelf. Eventually the "Good Environmental Choice" label was transformed into the logo which now appears on hundreds of goods in Sweden.

To begin with, only 1 per cent of washing powder brands on the market carried the label – all were made by small manufacturers rather than the giants such as Lever and Proctor & Gamble.

Despite enormous interest by the Swedish public, major manufacturers were reluctant to become involved with eco-labels. So SSNC precipitated a head-on clash with Lever by calling for a boycott of its leading brand Via because the company refused to make its products more environmentally acceptable.

Retailers threatened to stop buying detergents that did not meet the SSNC criteria, and public support for greener products led to a sharp fall in market share for the major companies. Manufacturers of environmentally approved products saw their sales soar until they took almost 10 per cent of the market.

In 1992, the Swedish government launched its own eco-label, the Nordic Swan. This also set criteria for laundry detergents which excluded LAS. By the end of the year 20 per cent of these products carried either the "Good Environmental Choice" or the Nordic Swan eco-label. By the end of 1994, more than 90 per cent of the products were eco-labelled. Today, LAS has virtually been eliminated from Swedish washing powders.

Cleaning up the cleaners

Between them, "Good Environmental Choice" and the Nordic Swan have cleaned up the detergents industry in Sweden. An investigation by the SSNC in 1999 into the impact of eco-labelling on the market for household cleaning products found that 91 per cent of washing powders and liquids sold by major retailers carried one or other eco-label.[12]

Although the requirements of the two eco-labels are slightly different and there has been some jockeying of brands between one eco-label and the other, the net impact has been startling. This is particularly because the transformation was achieved with little support or enthusiasm from the major manufacturers.

The lesson for the EU is that where public interest is strong enough, providing consumers with relevant information, such as through eco-labelling schemes, can force the market to provide products that are safer, healthier and better for the environment.

[12] Changes in household detergents, 1988-1996, SSNC 1999, available at www.snf.se/pdf/bmv/rap-bmv-statistics.pdf

2.3 A FAMILIAR THREAT: A VALUABLE LESSON

A familiar threat

Lead is a well-known and well understood toxic metal, but health research continues to show that society has underestimated the threat it poses. Low levels of exposure cause damage to the nervous system, particularly in children. Lead causes long-term impairment of intelligence and reduces the speed at which the nerves transmit impulses. It also causes hypertension and kidney damage and is a reproductive poison causing reduced sperm counts and miscarriage or stillbirths.

Leaded petrol was a major source of exposure and has now been phased out in most western countries. However, important exposure routes remain. Drinking water which has been in contact with lead pipes or leaded solder joints is one principal source, and another is house dust containing lead which may originate in products such as paints and plastics. Lead in ceramic glazes, glassware or lead-soldered cans can contaminate food.

Lead is also toxic and undesirable in the environment. Lead in fishing weights and shot are well documented causes of poisoning in wildlife, particularly swans.

Lead is pervasive. It has been in use for hundreds of years and is still in specialist use where it may well be contributing to human exposure and environmental contamination. A recent example to hit the news headlines in the UK is its use in candle wicks. It is now clear that these candles, when burnt in the home, contribute to lead exposure through fumes and house dust – both of which are particularly likely to be significant for children.[13]

Another example is the illegal but common use of lead solder in Scotland. A recent survey showed that 30 per cent of new houses in Scotland have lead solder in their drinking water pipes.[14]

Alternatives to lead exist in virtually all products. Denmark was the first country to pass legislation systematically to remove lead metal and lead compounds from products. In November 2000, the Danish environment ministry passed a regulation which set deadlines for phasing out the import and marketing of products containing lead.[15]

The order prohibited the use of lead compounds in products after March 2001, allowing only some limited uses to continue. The importing and sale of products containing lead metal was also prohibited in applications such as curtain weights, fishing weights, roof flashings and solders.

The effect of the order has been to ban the great majority of the uses of lead compounds, and to prohibit any new uses or any uses that have not already been declared to the authorities. For metallic lead, the number of approved uses has been further restricted.

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[13] Opinion of the EU Scientific Committee on Toxicity, Ecotoxicity and the Environment, 6 February 2003.

[14] Scottish new homes lead survey, stage 2, available at www.show.scot.nhs.uk/scieh/

[15] Statutory order no. 1012 of 13 November 2000.

Costs and benefits

It is too soon to say exactly what effect the ban is having on lead exposure or releases to the environment, but Denmark's Environment Protection Agency does have good information on the situation before the ban. It conducted a "mass flow analysis" of lead to trace the sources and fate of lead in the environment.[16]

The analysis suggests that substantial reductions are likely: for example, up to eight tonnes of lead have been used in fireworks every year. Releases from fireworks could be twice as large a source of lead in the air as waste incinerators – the next largest source.

Other examples where substantial emission reductions will be achieved are lead weights in fishing gear and ammunition. Some 290 tonnes of lead are lost to the sea and inland waters from fishing weights in Denmark every year – the largest input to the water environment. And up to 70 tonnes of lead is used in lead shot which is likely to end up in the soil.

The ban on lead has posed some problems for companies, reports the Danish Chamber of Commerce, which represents some 14,000 business including importers. Mette Herget highlighted particular problems with some specialist PVC-coated cables where lead is used as a stabiliser in the plastic. Cables for high specification lighting applications needed to be more heat resistant and these were not available in lead-free versions, she explained, so some companies were forced to disobey the legislation because alternatives were simply not available.

Another problem area is paint – many metal products are painted and it is difficult to discover whether lead is used in them, Ms Herget said. "It is not possible to have a red Ferrari in Denmark because these paints contain lead. Also the yellow paint used on construction and earth-moving machinery contains lead. It is no use to say you want one without lead paint – the suppliers just say 'Excuse me?'. The Danish authorities have to close their eyes because it is impossible and not practicable."

However, she concedes that there are always positive outcomes. "Whenever there is new legislation, somebody wants to supply the new products while some companies go broke." But the market does not provide all the solutions: a country such as Denmark, with its small market, has limited power to influence the global marketplace. It is therefore vital that the EU agrees unanimous precautionary action on hazardous substances to put powerful pressure on multinational companies to produce safer products.

Promoting alternatives

Although some manufacturers or importers may feel disadvantaged by action to phase out hazardous chemicals, making less hazardous alternatives can be the basis of a profitable and sustainable business – even for small to medium-sized enterprises (SMEs).

The prospect of tougher legislation on lead roofing materials inspired Danish inventor Poul Meier to develop a lead-free flashing material known as Perform.

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[16] Miljøprojekt Nr. 789 2003, Mass flow analysis for lead, 2000. Available at www.mst.dk

Poul Meier was struck by the clumsiness and difficulty of using lead as a roofing material while installing a stove in his summer house in Jutland in 1999. He bought lead flashing to seal the joint between the flue pipe and the roof: “It didn’t look good,” he explained. “The joint between the lead and the pipe had to be welded and I had health and safety concerns about that. Also the joint is not strong. I realised I was using a technology that dated back to Roman times and there should be a better way.”

As a materials expert, he had the right skills and contacts to develop Perform – a composite of aluminium and polyurethane rubber. Perform can be made to look like lead, can be fitted in the same way – formed into shape with a soft hammer – and needs no gluing.

With help from the Danish Environment Protection Agency, the product was put into commercial production in August 2002. Two entrepreneurs formed a small company called Robert & Kjær to manufacture Perform.

Lead was finally banned for roofing materials in Denmark after December 2000, except to replace flashings in old buildings. Anders Jørgensen, one of Robert & Kjær’s directors, said that Perform had taken 90 per cent of the new market for lead-free products.

This example shows that industry fears that the European Commission’s REACH proposals will put intolerable burdens on companies – especially SMEs with limited resources – are unfounded. Tougher regulation of hazardous substances will create business opportunities in providing safer products and create new and sustainable jobs.

Lead underlines the need for concerted EU action on hazardous substances. The EU’s considerable market power should be utilised to force international action to end the unnecessary use of toxic chemicals.

2.4 HORMONE DISRUPTING DETERGENTS

Dirty cleaners

Alkyl phenol ethoxylates (APEs) are cheap but effective surfactants, long recognised as being poorly biodegradable and toxic. As long ago as 1976, the use of APEs in UK domestic cleaning products was voluntarily restricted by major manufacturers because of concerns about persistent foaming in rivers receiving sewage effluent.

APEs discharged into sewers are broken down to alkyl phenols such as nonyl phenol or octyl phenol, which are quite persistent and toxic. In the early 1990s scientists began to realise that alkyl phenols mimicked the female hormone oestrogen and caused endocrine disruption in fish.

They found that male fish exposed to sewage effluents produced egg proteins in their blood – normally only found in mature female fish. Other symptoms included egg cells among the tissue that normally produces sperm, and the worst affected fish developed tubes for egg laying. It is now clear that the ability of these fish to reproduce is severely impaired.

APEs and their breakdown products are one of the causes of oestrogen mimicry in sewage effluents, along with synthetic hormone residues from contraceptive pills and natural steroid hormones excreted by people.

APEs and alkyl phenols can still be found in sewage and rivers at toxic levels despite the fact that they are hardly used for domestic cleaning. The compounds have been widely used for industrial and institutional cleaning, in car care and DIY products, in paints, in pesticide formulations and in some personal care products. Alkyl phenols have also been used as stabilisers in plastics and can leach out of products and packaging.

German scientists recently demonstrated that nonyl phenol is found in all kinds of food.[17] Quite high levels were found in fatty food such as cheese, chocolate and butter, which is not surprising because alkyl phenols are soluble in fats. However, relatively high levels were also present in tomatoes and apples, suggesting contamination due to the use of APEs in pesticides.

Although current scientific knowledge suggests that alkyl phenol levels in food are not likely to be harmful, the chemical was also found in baby food and even breast milk – so even the very young are being exposed to these oestrogenic compounds. Alkyl phenols and other oestrogenic chemicals have been reported to affect health at very low doses.[18] [19] [20]

In short, APEs and alkyl phenols are common contaminants in the environment which can disrupt endocrine systems and are toxic to wildlife. They may have the potential to harm

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[17] ENDS Report 327, p 13, Nonyl phenol 'ubiquitous in food', researchers find, April 2002.

[18] Sharpe, R.M. et al. 1995, Environmental Health Perspectives, Vol 103 (12), pp 1136-1143.

[19] Nagel, S C et al, 1997, Environmental Health Perspectives, Vol 105(1), pp 70-76.

[20] National Toxicology Program Low Dose Peer Review, available at http://ntp-server.niehs.nih.gov/htdocs/liason/LowDosePeerFinalRpt.pdf

humans as well as animals and plants. There is a strong case for action to limit levels in rivers and in food contact applications such as packaging and pesticides.

Action so far

In 1992, nonyl phenol was identified by OSPAR, the international treaty governing pollution of the North Sea and north-east Atlantic, as a priority substance to be phased out by 2000. The chemical has also been subject to a risk assessment under the EU's existing substances programme. The assessment concluded that bans on the use of nonyl phenol and its ethoxylates in many applications were needed to protect aquatic life.

The European Commission has introduced regulations which will ban the use of nonyl phenol and nonyl phenol ethoxylates in cleaning products, and in industries such as leather finishing and metal working.[21] The ban will come into force in early 2005, but will not cover use in pesticide formulations. It will also allow the continuing use of octyl phenol and octyl phenol ethoxylates – compounds which although chemically distinct, have almost identical environmental, toxicological and endocrine disrupting properties.

Like many other countries which signed the OSPAR Convention, Norway took national measures to attempt to phase out nonyl phenol and its ethoxylates. A 1996 voluntary agreement with industry to phase out the compounds by 2000 met with limited success. While the cleaning agents sector achieved a 93 per cent success rate, other sectors fared poorly, with the car maintenance sector achieving only a 27 per cent reduction.

The Norwegian government responded with proposals for a mandatory phase-out in November 2000,[22] and the legislation came into force at the end of 2001.[23] The ban applies to the production, use and sale of both nonyl and octyl phenols and their ethoxylates in pure form or in products, the only exception being in paints, lubricants and solid products. These uses represent only a minor source of emissions to the environment and substitutes in these applications have not yet been developed.

APEs, like lead and phthalates, are another example of a single country moving ahead of EU legislation and imposing a ban on a hazardous group of compounds. Norway, although not a member of the EU, has successfully instituted measures which are unlikely to be in place in the EU for many years – showing that this can be a successful strategy for individual countries to reduce chemical risks.

Norway's products register also means that consumers can be confident that the ban is being respected. The register requires all manufacturers or importers of products containing hazardous ingredients to submit a declaration of ingredients to the authorities every year.

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[21] Directive 2003/53/EC of 18 June 2003 amending Council Directive 76/769/EEC relating to restrictions on the marketing and use of certain dangerous substances and preparations (nonylphenol, nonylphenol ethoxylate and cement).

[22] Norway moves to ban nonyl phenol ethoxylates, Environment Daily 878, 20 November 2000.

[23] Regulations relating to restrictions on the use, etc. of certain dangerous chemicals, Norwegian Ministry of the Environment, 20 December 2002, available at www.sft.no/english/legislation/get.cfm?1=1&kat=122&sprak=en

In contrast, the UK has attempted to introduce voluntary restrictions in advance of EU legal controls via the Chemicals Stakeholder Forum. However, this initiative was very late to bear fruit, with the chemical industry only claiming to have implemented it in January 2004 – one year before the EU legislation is due to come into force. Many stakeholders are likely question whether the effort involved was really worthwhile.

2.5 TELEVISIONS AND SOFAS

A threat to children

Brominated flame retardants (BFRs) are a family of chemicals widely used in plastic computer and television cases, printed circuit boards, expanded polystyrene packaging and insulation, fabrics and upholstery foams. There are around six different compounds in common use which are persistent in humans, wildlife and the environment. Their toxicity and health effects are little understood.

BFRs are released into the environment through their manufacture, processing, use and disposal in products. They accumulate in wildlife and biomagnify in food chains. Modest levels of contamination in algae and invertebrates become multiplied in fish and predators, culminating in substantial burdens in animals at the top of the food chain such as seals, dolphins, polar bears and humans.

The chemistry and environmental behaviour of BFRs can be compared with that of PCBs. They are just as persistent and some are highly bioaccumulative, although little is yet known about their toxicity.

Recent research highlighted an exponential increase in one group of BFRs, brominated diphenyl ethers (BDEs), in seals from the remote Canadian Arctic.[24] If present trends continue, burdens of BDEs in Arctic seals will exceed PCB burdens by 2050. Very high levels of BDEs have also been reported in porpoises found stranded around the UK coast.[25]

The UK is one of the few European countries to manufacture BFRs. A site operated by the US multinational Great Lakes Chemical in Newton Aycliffe, Co Durham, has contaminated the rivers and the North Sea with BDEs.[26] The plant is still operating and now manufactures another equally persistent BFR called hexabromocyclododecane (HBCD). The plant has also caused significant pollution through its releases of this compound.[27]

BFRs are widely present in fatty food such as fish, meat and butter. Given the manufacture and use of BDEs in the UK, it is not altogether surprising that one study found that butter produced in the UK contained the highest levels of BDE contamination in the world.[28] But the UK

[24] Ikonomou, M G et al. 2002, Environmental Science & Technology, Vol 36(9) pp 1886-1892.

[25] Law, R et al. 2002, Chemosphere, Vol 46, pp 637-681.

[26] ENDS Report 323, pp 3-4, Chemical firms persistent North Sea pollution, December 2001.

[27] ENDS Report 337, p 11, Great Lakes' flame retardant faces restrictions, February 2003.

[28] ENDS Report 324, p 12, Evidence mounts on flame retardants in breast milk and food, January 2002.

government has not systematically collected information on levels of BDEs or other BFRs in UK food or in our bodies.

Swedish researchers have raised the alarm over rapidly increasing levels of BDEs in breast milk. Researchers at the Karolinska Institute in Stockholm found that levels rose exponentially between 1972 and 1997, reflecting the increasing use of these substances.[29] A recent study funded by Lancaster University found women in the UK had levels of BDEs in their breast milk 1.5 times higher than Swedish women. But women from the United States had even higher levels – almost 20 times those found in Sweden.[30]

A major use of BFRs is in the plastic parts of computers. Swedish scientists have shown that people who work with computers are particularly likely to carry higher levels of contamination in their bodies. For example, computer technicians had five times the level of BDEs in their body fat than office clerks or cleaners.[31] Computer technicians and people working in a computer recycling facility have also been shown to be exposed to a wider range of BFRs, including tetrabromobisphenol A (TBBPA), which is mainly used in electronic circuit boards.

The health impacts of BFRs are poorly understood. But some studies have shown that developing mice exposed to BDEs suffered behavioural changes and impaired learning ability.[32] These changes are remarkably consistent with the well documented neurological effects seen in children exposed to high levels of PCBs in the womb.[33]

Action so far

The case for action to ban environmentally persistent BFRs is very strong. The European Commission has included the commoner BFRs in a risk assessment programme which has already decided to ban penta- and octa-BDEs across the EU.[34] However, the ban will not come into effect until 15 August 2004, and other products such as deca-BDE, HBCD and TBBPA will remain on the market for the foreseeable future.

The countries with the most forward-thinking chemicals policies have been frustrated by the continued use of brominated flame retardants. Sweden has done more than any other country to highlight the risks posed by these compounds and promote international action. Although it has threatened to impose a unilateral ban on several occasions, the Swedish government now appears to have decided that this would be ineffective. It believes, with some justification, that it is unlikely that major manufacturers would be prepared to alter their products to comply with new regulations in a relatively small market such as Sweden. The government is now determined to press for concerted EU action to reduce the use of BFRs.

Anna Nylander of the Swedish National Chemicals Inspectorate (KEMI) explained: “We import most BFRs in products. Only a very small proportion is incorporated [into products] in Sweden.

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[29] Meironyte D. et al. 1998, Dioxin 98, Organohalogen compounds Vol 35, pp 387-390.

[30] ENDS Report 344, p4, High levels of flame retardants contaminate UK breast milk, September 2003.

[31] Jacobssen, K et al., 2002, Chemosphere, Vol 46, pp 709-716.

[32] Eriksson, P et al., 2001, Environmental Health Perspectives, Vol 109, pp 903-908.

[33] Schantz, S L et al., 2003, Environmental Health Perspectives, Vol 111, p 357-376.

[34] EU Directive 2003/11/EC, 6 February 2003.

We think the most efficient way to control these substances is to regulate them through the EU. Global action would be even better."

Although KEMI would like to see a national ban on all BFRs, it is optimistic that risk assessments at EU level will eventually decide to ban the other three major BFRs – deca-BDE, HBCD and TBBPA. However, this is by no means certain.

KEMI also fears that if and when these compounds are banned, other BFRs may simply take their place. In a report to the Swedish government last year, it noted that BFRs are a chemically diverse group and that every compound would need to be investigated separately and legislation drafted to restrict their use – a process that would take many years to complete. During this time, producers would be free to make and sell potentially hazardous BFRs.

Denmark and Norway share Sweden's view and frustration. BFRs are exactly the kind of problem that the European Commission's REACH proposals need to address. Many of these compounds are a continuing threat to the environment, and international action is required. REACH should enable the EU to lead a global move to replace these chemicals with safer alternatives.

While working for action to be taken at EU or wider international level, the Nordic countries have not been idle in minimising the risks BFRs pose to health and the environment within their own borders. One important means of achieving this has been through eco-labelling.

The Nordic White Swan and the TCO eco-label both prohibit the use of all brominated flame retardants in electrical or electronic goods in any component weighing more than 25 grams. This means that small components – over which manufacturers may have little control – are exempt but the compounds cannot be used in major items such as casings where alternatives are available. Brominated flame retardants such as TBBPA can also still be used in printed circuit boards.

Another means of creating a shift away from the use of suspect chemicals has been to list them on national "observation" or "undesirable" substance lists, which serve as a warning to users and manufacturers. Sweden placed penta-, octa- and deca-BDEs, HBCD and TBBPA on its observation list in 1998.[35] The Danish List of Undesirable Substances includes a blanket coverage of all brominated flame retardants.[36]

The two governments have also written action plans on brominated flame retardants.[37],[38] These detail a host of measures that have been brought to bear on the compounds to increase public safety, discourage manufacturers from using them and encourage importers to look for products that do not contain them.

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[35] Swedish National Chemicals Inspectorate observation list, available at www.kemi.se/default_eng.cfm?page=Prodreg/default_eng.htm

[36] List of undesirable substances, available at www.mst.dk

[37] Action plan for the reduction of emissions of brominated flame retardants, Norwegian Pollution Control Authority, 2003. Available at www.sft.no/nyheter/dokumenter/brominatedflameretardants_actionplan2003.htm

[38] Action plan for brominated flame retardants, Danish Environment Protection Agency, 2001. Available at www.mst.dk

Key steps included in the action plans include:

- BFRs and any wastes containing them are classified as hazardous and must be labelled and treated accordingly;
- action to promote international regulation and cooperation;
- support for national research into environmental levels and impacts;
- information campaigns levelled at retailers and the public;
- support for the development of cleaner products;
- eco-labelling;
- voluntary agreements with industry to avoid the use of BFRs; and
- green procurement initiatives: public sector groups and government pledging to support products that do not contain BFRs

The case of BFRs shows that there is much that can be done in the absence of EU legislation to reduce the risks posed by hazardous chemicals. Eco-labelling, lists of undesirable substances and action plans are all alternative methods that can encourage reductions in the use of hazardous compounds.

One final and important measure of use in Norway is the substitution principle. This is a general legislative requirement to replace hazardous compounds in products with the least harmful ones. Norway's Product Control Act requires companies using BFRs to apply the principle and examine whether safer chemicals exist and can do the same job.

The substitution principle is a fundamental concept that should be a foundation stone in the European Commission's REACH proposals.

Results

Government programmes in the Nordic countries mean that the problem of hazardous flame retardants in products is becoming more widely understood by industry. The result has been that a large number of Nordic companies have taken action to remove BFRs from their products.

One example is Danish electronic goods manufacturer Bang & Olufsen. The company stopped using BFRs in the plastic casings of its products in the mid-1990s and replaced them with a phosphate-based alternative. Its test and approval manager, Jesper Olefsen, explained: "We see ourselves as a leading brand, so we have to do more than our competitors. Our environmental policy of minimising impacts is not something we advertise – our customers are not interested and they have other concerns. But maybe later they will ask questions about environmental issues and we will be able to answer them."

According to KEMI, other companies taking action on BFRs in Nordic countries include the multinational furniture retailer IKEA, which banned all of the compounds in its products in 2001, and construction firms Peab and Skanska, which are seeking to remove BFRs in buildings. Other companies working to substitute BFRs in Sweden include electronics companies Electrolux and Sony-Eriksson, vehicle manufacturers Saab, Scania and Volvo and the engineering companies ABB, Atlas Copco, Delaval and Emerson Energy.

In the UK, action on reducing or phasing out BFRs is limited to only a few companies such as Argos, B&Q and Marks and Spencer.[39],[40] However, other companies including Japanese office equipment manufacturer Brother, and Swedish electrical appliance manufacturer Electrolux, have been taking action, often with a view to gaining acceptance in overseas markets.

[39] ENDS Report 331, Retailers pledge to report on use of hazardous chemicals, August 2002.

[40] ENDS Report 332, p 34, Argos, Homebase join FoE chemicals initiative, September 2002.

3 Reducing risks: tools in the tool box

The case studies in the previous chapter demonstrate that there are many opportunities for the EU and member governments to reduce the risks posed by hazardous compounds in products. This chapter examines the policy options in detail and sets them in the context of current chemicals policy.

3.1 PUBLIC INFORMATION CAMPAIGNS

Telling the public about the risks products pose to their health and the environment helps people to help themselves and reduce their own exposure to hazardous substances. There are several ways in which this can be achieved – government communication channels, for example, might offer information about chemicals in products.

An example from Denmark is the EPA's telephone advisory service on chemicals. People can call for advice and information on chemicals in consumer products from toothpaste to garden pesticides.

Public awareness campaigns are another means of influencing consumer behaviour. A further example from Denmark is Green Information, also known as the Information Centre on Environment, Health and Consumption. This small organisation is financed by central government but is independent and run by a board comprising a mix of stakeholders including industry and non-governmental organisations.

Green Information has direct contact with the public through a telephone help line, its website and an e-newsletter. Its aim is to help people become more environmentally aware in their shopping habits through its own leaflets, factsheets and reports.

The group has established public trust and a reputation for plain speaking. Its advice is factual – "product A contains compound X, product B does not" – though likely to be unpopular with some manufacturers and retailers. But a major benefit is that it has the confidence of the media and a public profile which is much greater than any advertising campaign could hope to achieve.

Products threatening public health and the environment through hazardous ingredients are issues keenly followed by the media. Green Information has found that it is possible to use the media's natural focus on these issues to further a wider agenda of promoting least damaging goods.

Green Information has made particular use of the Danish Environment Protection Agency's list of undesirable chemicals (see 3.3 Priority listing of undesirable compounds). Mette Boye of the Danish Consumer Council believes that Green Information has "done a wonderful job and something the [Environment Protection Agency] could never do itself". She believes it has been highly influential in raising public awareness and reducing exposures to hazardous chemicals including heavy metals, phthalates and endocrine disruptors such as bisphenol A and parabens.

3.2 RESEARCH ON EXPOSURE TO HAZARDOUS COMPOUNDS

Reliable information on the environmental occurrence of chemicals in the environment, and the exposure of humans and wildlife, is essential to guide policy on chemicals and consumer products. Although the responsibility for providing this information should lie with chemical manufacturers, they are often remote and may not provide reliable information about key routes of exposure in European countries.

Research programmes need to be proactive. With ever increasing numbers of chemicals in use, environmental surveillance is needed to scan for hazardous chemicals turning up in the environment and in humans. Many chemicals accumulate in fats and the highest levels are likely to occur in animals at the top of the food chain such as otters, seals and predatory birds. Tissue monitoring of such animals should be carried out routinely to characterise levels of chemicals in the environment and to help pinpoint possible sources of contamination. Such tissues are also a likely place to find new environmental contaminants and are worthy of detailed studies.

Humans are also at the top of the food chain and a regular programme of human tissue monitoring should be a very high priority. It was such a programme that alerted Swedish researchers to the presence of increasing levels of brominated flame retardants in breast milk (see 2.5 Televisions and sofas). Breast milk is a particularly useful indicator because it not only indicates the mother's exposure but also monitors the exposure of the foetus. Care should, however, be exercised when communicating the results of such monitoring because breast feeding is beneficial, and it is the unborn child that is most vulnerable to exposure to hazardous chemicals.

Looking for new contaminants also involves a greater research effort to develop analytical methods to detect compounds and monitor their fate in the environment. The Danish EPA's report on phthalate exposures from baby toys is an example of a proactive move to identify previously unrecognised routes of public exposure to hazardous compounds (see 2.1 Toys and cosmetics).

The Danish EPA has a monitoring programme aimed particularly at chemicals in products which amounts to a surveillance system to flag up potential health or environmental issues. The programme has produced nearly 30 short reports over the last two years, including investigations into chemicals in oil-filled decorative lamps, organotin preservatives in bedding materials, chemicals in glues, chemicals in earplugs, perfluorinated compounds in stain prevention products, stabilisers in PVC plastic articles and so on.

Mass flow analysis for toxic compounds is a useful exercise which should be regarded as essential for common toxic substances. It involves identifying all uses and man-made inputs of a substance to the environment, and can flag up unsuspected sources of exposure. The Danish EPA's mass flow analysis of lead, for example, highlighted the previously unrecognised use of lead in fireworks (see 2.3 A familiar threat: a valuable lesson).

3.3 PRIORITY LISTING OF UNDESIRABLE COMPOUNDS

An official listing of substances which are hazardous to health or the environment can act as a line in the sand – a warning to manufacturers to avoid or reduce the use of these compounds in their products (see 2.5 Televisions and sofas). Denmark is one of several countries to adopt this idea with its "list of undesirable substances", first published in 1998.[41]

Chemicals are included in the list if they are highly toxic, cause cancer or heritable genetic damage, if they are toxic to reproduction, cause allergies or have unacceptable environmental impacts. The list is prioritised by including only those substances which are used in quantities of more than 100 tonnes a year.

The latest version of the list was published in 2000 and contains 1,404 substances. It is posted on the Danish Environment Protection Agency's website as a public document and it has become a central plank of the country's proactive chemicals policy[42].

Green Information has used the list as a lever against manufacturers. It has conducted its own analyses of products and highlighted those containing listed substances. The publication of the results on its website and in leaflets has attracted a great deal of media attention and put strong pressure on manufacturers to avoid undesirable substances.

A result has been proactive action by retailers to remove all listed compounds from their products. Morgens Werge, director of Coop, which owns several prominent Danish retail chains, says the company has a policy of withdrawing products containing listed substances or else warning consumers: "I think we have now only three products which are all chlorine bleaches. We have used leaflets written by the Environment Protection Agency telling people to use them carefully and try to find other solutions or alternatives."

One example of the list's effectiveness is phthalate exposure from cosmetics and personal care products (see 2.1 Toys and cosmetics). Coop has removed phthalates from all its own-brand cosmetic products.

The UK has developed its own list of "chemicals of concern", drawn up by the Department for Environment, Food and Rural Affairs (Defra) Chemical Stakeholder Forum.[43] The list was published in June 2003 and includes about 100 compounds.

Although a welcome step forward, the UK list differs from Denmark's in several important respects. First, the criteria for the Danish list are more wide-ranging, so that compounds deemed to be a hazard for particular environmental compartments, such as groundwater or anaerobic sediments, can be included. The UK list only includes compounds that meet pre-defined persistence, bioaccumulation and (usually) toxicity criteria.

Second, the UK list does not include substances which are deemed hazardous purely on health grounds – those that are carcinogenic, mutagenic or impairing fertility such as naphtha,

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[41] Denmark prioritises chemicals to be reduced, Environment Daily 305, 14 May 1998.

[42] List of Undesirable Substances, available at www.mst.dk

[43] ENDS Report 338, p 12, UK 'chemicals of concern' to be published, March 2003.

creosote, azo dyes, gas oil and phthalates, for example. And third, the UK Chemical Stakeholder Forum's list may be perceived as having less than official status because it does not originate directly from government.

The UK's approach to drawing up a list of undesirable compounds is second best because the government has neither taken full ownership of the list nor endorsed it. Indeed, it seems that the government considers that it does not even have the legal powers to adopt it as an "official" government list.[44] Wide-ranging national schemes, such as those in the Nordic countries – or even better, an EU-wide listing – would be more appropriate to send clear signals to chemical manufacturers and product formulators across the EU and the rest of the world.

3.4 ECO-LABELLING

Allowing consumers to make informed decisions about the products they buy can be a powerful tool to reduce exposure and persuade manufacturers to phase out hazardous chemicals. Eco-labels tell consumers which products have the best environmental profile and allow them to avoid those containing compounds hazardous to health and the environment.

Typically, eco-labels take into account the environmental impact of a product from its manufacture to its disposal. This includes the energy and natural resources used in manufacture, consumed in its use and during its disposal, as well as the environmental impact of its packaging, and whether the manufacture or use of the product releases harmful chemicals into to the environment.

There are four well-known general eco-labelling schemes in Europe (see table 1). All began in the late 1980s or early 1990s. Only one is applicable in the UK – the EU flower – but this has been very slow to take off. However, there are various specialist eco-labels such as the FSC sustainable timber logo and the TCO eco-label, used mainly on computers and other electronic goods.

[44] Protecting people and the environment from hazardous chemicals, available at www.defra.gov.uk/corporate/consult/synthetic-chemicals/index.htm

Table 1: Eco-labels in Europe

Label	Countries	Date started	No of product groups	No of licences
Blue Angel	Germany	1987	80	3,700
Good Environmental Choice	Sweden	1990-92	13	411
Nordic Swan	Norway, Sweden Finland, Iceland, Denmark	1990	60	562
EU flower	EU	1993	19	155

Eco-labelling was highly effective in removing the poorly biodegradable surfactant LAS from laundry detergents in Sweden (see 2.2). At the same time, eco-labels also substantially reduced levels of other harmful or unnecessary compounds in the formulations such as fillers, perborate bleaches and the bleach activating chemical EDTA.

Providing consumers with information at the point of sale through eco-labelling or other rating schemes is a powerful tool to change the market in favour of safer products, even if major players are not willing to participate voluntarily.

The European Commission should urgently consider how best to revive and improve the EU eco-label scheme, perhaps by requiring certain products to carry chemical rating scores for safety to health and the environment, similar to the energy rating scheme now in place across the EU. Such schemes have the advantage of including all products, and manufacturers do not have the option of ignoring them.

3.5 SUPPORT FOR DEVELOPING CLEANER PRODUCTS

Hazardous chemicals in products can only be avoided if there are safer alternatives to replace them. Action to promote the development of alternatives can therefore help the market to respond to concerns over hazardous substances.

The Danish EPA, for example, has a cleaner products support programme which grants subsidies to projects that develop and promote replacements of the most undesirable chemical substances. The development of Perform, the lead flashing replacement, is one example of a product developed with support from the EPA programme (see 2.3 A familiar threat: a valuable lesson). The programme has also supported projects designed to find replacements for HFC refrigerants, which are powerful greenhouse gases, and phthalates.

3.6 VOLUNTARY AGREEMENTS WITH INDUSTRY

Voluntary agreements have been a favourite tool of many EU governments. The UK, for example, charged its Chemicals Stakeholder Forum with seeking voluntary agreements to limit the use of chemicals which it identified as being persistent, bioaccumulative or toxic.

The emphasis placed on voluntary agreements has been remarkable considering that that there is much evidence to show they are rarely successful. A study commissioned by Defra into nonyl phenol ethoxylates, for example, found that voluntary agreements across Europe had been only "partially effective".[45] Some 3,000-4,000 tonnes of the compounds remained in use in domestic cleaning products in 1997 despite national agreements to phase them out before 1995, in line with the an international Paris Commission agreement.

Norwegian attempts to persuade the cleaning products industry to dispense with nonyl phenol ethoxylates met with limited success. Take-up varied across different industry sectors and the agreements did not achieve a complete phase-out (see 2.4 Hormone disrupting detergents).

A recent study by the OECD is dismissive of voluntary agreements.[46] Often the agreements offer no more than "business as usual", it suggests, and the most successful schemes carry embedded "threats" – that regulation will follow if certain objectives are not achieved.

One possible advantage, however, is that voluntary agreements may allow more rapid action to reduce chemical risks because they do not rely on the passage of legislation. But experience suggests that the European Commission and national governments should be wary of committing to voluntary agreements for the longer term, and should aim to back up voluntary agreements with legislation.

3.7 NATIONAL BANS

A national ban on the use of chemicals has been a useful sanction for EU member states that wish to move ahead faster than the EU itself. Unilateral bans on phthalates in baby toys have been successfully applied by Denmark (see 2.1 Toys and cosmetics) and Austria, Finland, France, Germany and Greece.[47] This widespread action across Europe prompted the European Commission to institute a temporary EU-wide ban, which has been repeatedly renewed since 1999.

Similarly, Denmark has successfully banned the use of lead metal and compounds in many areas (see 2.3 A familiar threat: a valuable lesson). Denmark has also imposed stricter regulations than the EU in areas such as cadmium in products, and the solvent content and labelling of paint.

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[45] 'Risk reduction strategy proposed for NP, NPEs', ENDS Report 295, pp 44-45, August 1999.

[46] Voluntary approaches for environmental policy: Effectiveness, efficiency and usage in policy mixes, available on www.oecd.org

[47] Germany finalises phthalates ban for baby toys, Environment Daily 581, 26 July 1999.

Unilateral bans on chemicals in products are legal under EU law, provided they are imposed for reasons of public health and the correct protocol is followed under a 1998 Directive.[48] Governments must immediately notify the European Commission and other member states of the proposed regulations and, in the case of hazardous compounds, circulate details of the reasoning, the availability of substitutes and so on. At least three months must then elapse to allow other member states to submit comments, which must be taken into account.

The Danish EPA, which has shepherded through several such actions, has found the process successful but time-consuming. Such bans are less effective in a global marketplace than a ban across the entire EU.

3.8 ENFORCING PRODUCT SAFETY

Imposing restrictions on the use of chemicals in consumer products assumes there will be a mechanism to enforce them. In the Nordic countries this work is undertaken by national agencies: the national chemicals inspectorates of Sweden and Denmark, for example.

The Nordic model allows national governments to take action against hazardous chemicals in a way that has never been attempted in the UK. In Denmark, for example, national concern over phthalates in baby toys progressed from research to legislation and finally to surveys of products in the marketplace to ensure that the legislation was being obeyed.

Products that were not compliant with the Danish national – and later EU – ban on phthalates in toys were highlighted by the EPA and Green Information. The result was that not only was the ban enforced, but the public could also see that the legislation was being enforced and the threat removed.

3.9 GREEN PROCUREMENT SCHEMES

Government adoption of sustainable purchasing or environmentally-responsible procurement policies sets a strong example to consumers, manufacturers and retailers about the need to bring environmental and chemical safety considerations into the marketplace. The Danish government's support for electrical goods which contain no – or very few – BFRs is a case in point (see 2.5 Televisions and sofas).

Eco-labelling is a useful tool for implementing such policies because they provide clear benchmarks to guide purchasing across government departments. The prospect of increased business for greener products is also a clear incentive for manufacturers and suppliers to produce and stock these products.

[48] Directive 98/34/EC laying down a procedure for the provision of information in the field of technical standards and regulations.

3.10 TAXING HAZARDOUS SUBSTANCES

The Danish government has used taxes as a means of putting pressure on manufacturers to substitute hazardous compounds. One example is a tax on three chlorinated solvents which, according to the EPA, has resulted in a 70 per cent-drop in consumption over three years. The government has also imposed a tax on PVC – particularly designed to keep the plastic out of waste incinerators – and a tax on phthalates in soft PVC articles.

Taxes on hazardous compounds can send clear price signals to manufacturers and will certainly provide an incentive for them to reformulate their products so as to avoid hazardous ingredients.

4. Discussion and conclusions: Lessons for Europe

The European Commission's REACH proposals for a new chemical testing strategy present a rare opportunity to remove hazardous chemicals from products, increase consumer safety and satisfaction, and reduce growing public unease about chemicals. The Commission needs to resist industry pressure to weaken its proposals, and it must ensure that the legislation's objectives and key principles are preserved.

The issue of chemicals in products may be much more critical than many stakeholders realise. Mike Barry, sustainable development manager at Marks & Spencer, is one of the most outspoken commentators on chemicals: "Issues such as GM and BSE have made consumers very nervous about food issues. When that happens we are forced to ridiculous extremes like burning all the cattle. I'm concerned that chemicals could follow GM in this. But it doesn't have to. All of us who make and use chemicals have a role to play in addressing this issue head on, and in putting a system into place that will stand the test of time."

The European Commission, Parliament and national governments will play an important role in deciding whether the issue of chemicals in products can be managed to the satisfaction of industry, retailers and consumers, or whether it flares up into a consumer and retailer revolt – as has recently happened with GM food.

The case studies in chapter 2 suggest that key areas which need to be incorporated in the proposals are the ones outlined below (4.1-4.5).

4.1 COMMUNICATING WITH STAKEHOLDERS

The Commission and national governments need to send clear and consistent messages to manufacturers, retailers and the public about the importance of chemical safety. In countries with a significant chemicals industry, there is often too much emphasis on protecting the narrow economic interests of chemical manufacturers and downstream users of manufactured chemicals without thought for the need to help the industry grow towards sustainability by developing safe and sustainable products and services.

The UK is a prime example of a country where the narrow interests of the chemicals industry have taken the upper hand in forming chemicals policy (see Chapter 5).

Fortunately, the Nordic countries with smaller chemical industries have developed a culture which puts a greater emphasis on product safety and the protection of public health and the environment. They provide a very different model for how the industry should develop.

The EU needs to develop a chemicals strategy with a broad focus by listening to all stakeholders in order to achieve a balance in its policies. It also needs to put in place systems which communicate public concern about hazardous compounds to manufacturers and encourage proactive chemicals management by chemicals companies and downstream product manufacturers.

Listing hazardous substances

One way of sending a message to manufacturers and retailers is to publish an official "list of undesirable substances" or "chemicals of concern" (see 3.3 Priority listing of undesirable compounds). The list would serve as a basis for product planning by retailers, and a guide to what should be avoided by product formulators and consumers alike.

It is important that any list should be comprehensive, and include not only persistent, bioaccumulative and toxic compounds but also carcinogens, mutagens, reproductive toxicants, endocrine disruptors and sensitisers which may provoke allergic reactions or asthma.

Listing also needs to be done on a precautionary basis. Too often the information about chemicals is so inadequate than they cannot even be placed on an "undesirable" list. When in doubt, the compounds should be included so that precautionary action can be taken. Listing should act as a spur to encourage manufacturers to provide data on the safety of potentially hazardous compounds or find safer alternatives.

Developing EU action plans

In Denmark and Norway, action plans have proved a useful means of organising measures to reduce the risks of hazardous chemicals (see 2.5 Televisions and sofas). These plans consist of a timetable for action on particular hazardous compounds which will be followed by the regulators, allowing chemical producers and product manufacturers to plan their business activities and strategies. They can encourage the timely phase-out of hazardous compounds and ensure that demand for hazardous compounds reduces in line with the risks they pose.

The EU should use action plans to communicate its intentions to all stakeholders. They should include the following measures:

- products and waste containing hazardous chemicals should be classified, labelled and treated accordingly;
- measures should be taken to encourage international regulation and cooperation, for example through treaties on persistent pollutants and prior informed consent;
- support should be provided for research into environmental levels and impacts;
- information campaigns should be levelled at retailers and the public to increase awareness;
- support should be provided for the development of cleaner substitute products;
- eco-labelling should prohibit the use of hazardous compounds in products; and
- green procurement initiatives should be used to raise awareness and encourage the purchase of alternative products.

4.2 THE SUBSTITUTION PRINCIPLE

The European Commission needs to embrace the fundamental principle of chemical substitution: REACH needs to be built on the principle that the least toxic, least environmentally harmful chemicals possible are used in consumer products.

The Commission should build the substitution principle into its chemical safety legislation at ground level, as the Norwegian government has done in its Product Control Act (see 2.5

Televisions and sofas). The substitution principle must be acknowledged as a foundation stone of environmental policy, exactly like the polluter pays principle.

4.3 POLICING CHEMICALS IN THE MARKETPLACE

A strong policy on chemicals in products needs to be enforced in the high street. Consumers must be able to see that restrictions imposed on the use of chemicals in products are being observed, and they expect to see a process of enforcement in action.

REACH should oblige member states to have effective chemical agencies which would police chemicals in products in the marketplace. In Denmark, for example, the National Chemical Inspectorate performs annual checks on phthalates in children's toys to ensure that phthalate plasticisers are not being used (see 2.1 Toys and cosmetics). In Sweden, the role falls to the National Chemicals Inspectorate (KEMI). In the UK, however, the responsibility is devolved to local level and rarely carried out (see chapter 5).

4.4 ENVIRONMENTAL RESEARCH AND MONITORING

Considering the size and importance of the EU chemicals industry, insufficient research is being carried out to ensure that the use of chemicals is not causing adverse impacts on health and the environment. Where chemicals are potentially hazardous, persistent or toxic, we need to have a clear focus on where these chemicals are being used, whether they are present in products and at what levels, and what the exposures of people and the environment are likely to be.

The onus should be on industry to provide this information. But this alone will not be sufficient to satisfy the public that chemicals are safe. It is in the interests of all sides in the debate that these research projects are funded by industry but directed by independent scientific panels which include representatives from industry, environmental groups, retailers, trade unions and health professionals.

The EU also needs to have a chemical monitoring programme to guide its policy on chemicals and consumer products. The current research effort is full of holes and there is little sign of any collaboration or coordination between member states on chemicals in products. Research into the health impacts of environmental chemicals has often been neglected.

One example is the failure to monitor breast milk for brominated flame retardants – even though there is ample evidence of contamination in Sweden and data that suggests UK exposures are very high (see 2.5 Televisions and sofas). What little monitoring data *is* available has often been provided not by industry or government, but by academics or non-government organisations. Recent examples include data on flame retardants in UK breast milk produced by Lancaster University,[49] the study of toxic chemicals in European products released by Greenpeace in October 2003[50] and WWF's own research into human body burdens of toxic chemicals.[51]

[49] ENDS Report 344, p 4, High levels of flame retardants contaminate UK breast milk, September 2003.

[50] Hazardous chemicals in consumer products, available at

Charlotte de Roo, environment, safety and health adviser at the European Consumers' Organisation (BEUC), commented: "I think we need to look at the human body the way we look at the global environment. What are the effects of using these products? What are the exposures from this product and that product? We need to look at chemicals in the human body. What is its carrying capacity?"

Marks & Spencer's Mike Barry described the UK and EU research programmes as "very reactive". As a retailer he is more interested in emerging issues such as fluorocarbons and nitromusk fragrances, arguing that there is little or no information about levels of these compounds in the environment, or on consumer exposure, which could guide government or retailers on the risks these chemicals pose.

"There should be far more information about our exposure to chemicals of concern," he declares. "Too much action is based on precaution. Government can play an important role in saying 'this is what is in breast milk' and then leave it up to retailers and other users of chemicals to find a way out."

Even in cases involving long-established pollutants, there are glaring gaps where research has never been followed through. Mercury, for example, no longer appears to be a threat because emissions from coal-fired power stations have reduced dramatically in many countries including the UK. But toxicologists are reducing the tolerable mercury limits for pregnant women following evidence of effects on the brain of the foetus. And mercury continues to enter the environment from waste disposal, dentists' surgeries and in products such as thermometers in many countries – despite the fact that more forward-thinking countries like Denmark and Sweden have long restricted mercury in such applications.

The EU needs to have an overall view of where pollutants such as mercury are being used in products, emitted by industry and likely to be concentrating in the environment. Mercury is a classic case of a chemical that needs the mass flow analysis approach that is successfully employed in Denmark for lead, for example (see 2.3 A familiar threat: a valuable lesson).

The European Commission needs to:

- develop mechanisms whereby chemicals producers and users are obliged to contribute funds to independently-led research programmes aimed at ensuring the safety of synthetic chemicals for human health and the environment;
- establish periodic screening programmes for man-made chemicals in human breast milk, human blood and in wildlife;
- require industry to develop validated analytical techniques to enable their chemicals to be monitored in the environmental media and in human or animal tissues;
- fund research into the effects of key industrial chemicals on health and the environment where it is clear that industry studies are inadequate or unreliable;

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www.greenpeace.org.uk/

MultimediaFiles/Live/FullReport/6043.pdf

[51] WWF-UK national biomonitoring survey, available at: www.wwf-uk.org/filelibrary/pdf/biomonitoringresults.pdf

- conduct mass flow analyses on key chemicals of concern to establish their sources, fates and environmental levels;
- fund surveys into chemicals used in products where it is suspected that these may be significant sources of human exposure to potentially toxic compounds; and
- fund pump-priming research into alternatives to hazardous chemicals in consumer products to brief retailers on the potential for substitution.

4.5 ECO-LABELLING

The European "flower" eco-label took years to get going because industries and retailers across the EU could not agree on appropriate criteria. The first criteria were set in 1993 and 21 product groups are now covered.

However, take-up has been slow and poor across many parts of the EU. France, Italy and the Netherlands have the largest numbers of licensed products, with 27-30 products each. At the other end of the spectrum are countries such the UK where there are only seven products sporting the label – five textile products, one fridge-freezer and Waitrose own-brand toilet paper.

Eco-labelling cannot function effectively with such a low level of participation. In many countries, consumers are ignorant of the concept of eco-labelling and equally ignorant of what the EU flower looks like.

Many people now believe that 10 years after its birth, the EU eco-labelling scheme is close to failure. Even the EU eco-labelling board's own discussion papers now talk of the scheme being doomed without a major re-think.[52]

In the UK, Defra's Advisory Committee on Consumer Products and the Environment (ACCPE) concluded in 2000 that all-embracing eco-labels were "old-fashioned" and preferred the idea of single-issue eco-rating schemes, such as the EU Energy Label scheme for electrical appliances and the UK scheme rating the impact of cars on climate change.[53]

The advantage of such schemes is their inclusivity. "Rather than a scheme where 1 per cent of products carry a label which says nothing about the other 99 per cent, I would like to see a sliding scale like the energy efficiency label, banding all products," Mike Barry says. "For example, you could have an eco-label on washing powders that focused on 10 parameters, including wash performance and chemicals."

Introducing such a scheme across the EU would be a major undertaking. Charlotte de Roo of BEUC does not oppose such a plan but estimates that it might take 25 years to develop. She points to the current EU eco-label which has taken 10 years to get to its present, far from perfect state.

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[52] ENDS Report 340, p 36, EU eco-labelling scheme warned to revamp or die, May 2003.

[53] Choosing green – towards more sustainable goods and services, ACCPE October 2000, available at www.defra.gov.uk/environment/consumerprod/accpe/report01/index.htm

Some retailers have an open mind on eco-labels. Sue Jordan of DIY retailer B&Q considers that anything that gives products a "gold mark" is a good idea, but admits that the company has not investigated the idea thoroughly. "Eco-labelling for paint we would consider, but the current standard is not good enough on volatile organic compounds. We would want a better scheme."

However, others are sceptical. Phil Stubbs, Boots' head of group environment, commented: "Very, very few customers purchase on environmental grounds. I don't think eco-labels will make a difference, and I'm not convinced they are the answer. It says this product is green and by implication the others are not, so it is a problem for the Boots brand."

Mike Barry is in substantial agreement: "Eco-labelling is rarely the answer – British consumers don't respond to that level of detail. They want just want to be told 'Shop with the Co-op, B&Q, Boots or M&S and we will manage these things for you'."

Consumer groups do not agree. They want customers to be given more information – not only through eco-labels but also via complete labelling of all chemicals in products so that consumers can make informed decisions.

Charlotte de Roo is keen to see the EU scheme expanded to cover 100 product groups, particularly everyday purchases such as soaps and shampoos, to help eco-labelling become part of shopping culture. She also admits to being "irritated" by retailers' and manufacturers' environmental claims, which often cannot be trusted. "How can we police them? Where are the benchmarks? Such claims should be made in reference to the eco-label criteria. The only valid green claim in Europe is the eco-label."

But a major problem with eco-labels, Ms de Roo believes, is that they cover only environmental effects and not health. She cites the example of a product which carried the Nordic Swan eco-label, yet contained highly allergenic substances. "When it comes to human health, most eco-labels are in severe difficulty. If you want to stimulate a bigger group of consumers you have to broaden this out."

To stand a chance of success, any new eco-labelling scheme has to address current consumer concerns. The chemical safety of products such as detergents, cosmetics and personal care products is one such issue in the light of potential exposure to toxic, allergenic or endocrine disrupting chemicals which may have long-term consequences for health and fertility.

A mandatory rating scheme carried by all products has the advantage that it cannot be ignored by sceptical manufacturers or those intent on avoiding making their products safer by exploiting the ignorance of consumers.

The process of educating consumers into shopping for sustainable, less hazardous products is a gradual one and will not be achieved overnight. Like persuading the public to recycle household waste, it takes time for such a culture to take root. The European Commission should provide consumers with simple information on the chemical safety of products so that consumers can make considered, informed choices. It should also respect their right to know and support moves to ensure that on request, the public can get a list of the individual chemicals contained in

products, while enabling the exact amounts used to be kept secret to protect commercially sensitive information.

Although retailers want to protect and build their brands, this should not be at the expense of eco-labels or other devices that give appropriate information on chemicals, health and the environment. Not all shoppers want retailers to take decisions for them, and many consumers will want to think for themselves. There will be instances where retailers will be caught supplying products which turn out to be hazardous. An eco-label should be a guarantee for consumers that products have passed independent scrutiny and are genuinely better than unlabelled alternatives.

The European Commission should therefore:

- redouble its efforts to support the EU "flower" eco-label, informed by discussions with environmental and consumer groups, retailers and manufacturers;
- develop a broad-ranging mandatory rating scheme similar to the energy efficiency scheme but which focuses on the chemical safety of products. This should be developed in close cooperation with environmental groups, consumer organisations and retailers interested in sustainable, safer products. Priority products covered should include household cleaners, toiletries and cosmetics;
- encourage companies to engage with European eco-labelling initiatives by pledging continuing support for public awareness programmes and environmentally-responsible procurement schemes; and
- provide a legislative framework for delivering the public's right to know about the chemicals contained in products.

5. Discussion and conclusions: Lessons for the UK

Many conclusions in the previous chapter apply equally to individual EU member states. The UK in particular should note the following points:

5.1 COMMUNICATIONS

The UK government is one of those failing to send clear and consistent messages to manufacturers, retailers and the public about the importance of chemical safety (see 4.1 Communicating with stakeholders). It is concerned primarily with protecting chemicals manufacturers whose products are often the cause of health and environmental problems, rather than encouraging innovation and a move towards sustainable products, services and new markets.

The retailer is one of the stakeholders to lose out. Mike Barry of Marks & Spencer observed: "The government is focused on talking to the chemicals industry rather than to other stakeholders. It wants to minimise the regulatory burden and I can understand that – the chemicals industry is very important to UK plc – but it has to spend more time talking to other stakeholders."

In fact, parts of the UK retail sector are heavily engaged in the chemicals debate. One of the most lively areas of the British Retail Consortium is its group dealing with chemicals in products.

One of the group's members is Phil Stubbs of Boots. He identifies chemicals in products as "a key sustainability issue" for the company. Boots, along with companies including B&Q, Marks & Spencer and Sainsbury's, is leading the UK retail industry in this area.

Mike Barry, also on the BRC chemicals group, says: "We have recently been invited onto the Department of Trade and Industry's Chemical Industry Growth Team. Some people were asking 'What's M&S doing here?' but every one of our 30,000 products contains chemicals. If consumers become worried about chemicals, we will be the ones on the front line."

It is time for the UK to redraw its chemicals strategy with a broader focus – listening to all stakeholders and achieving a better balance in its policies. Defra's Chemicals Stakeholder Forum has been useful in promoting dialogue between parties involved. If it is to be replaced, as the government review now appears to be suggesting, some other forum for debate is surely needed to replace it.

Mike Barry believes that the Forum has made a big difference but feels it might have done more: "I think it needs to spend more time looking at the big issues rather than getting bogged down in the detail. The Forum has a limited resource, yet much of it appears to be being spent on highly detailed discussions about the merits of specific chemicals."

The government has also failed to address the public directly on chemicals in products and on consumer issues in general. The nearest it came was its "Are you doing your bit?" campaign in 1998. The campaign's aims were noble – to draw people's attention to the link between their behaviour as consumers and environmental impacts such as climate change, but it was half-hearted in its scale.

In 1999 the House of Commons Environment Committee recommended that the campaign be given "substantially increased resources and political backing".[54] It never happened. A survey in 2002 concluded that although the campaign achieved a considerable public profile, few people reduced their energy consumption for environmental reasons.[55]

There is a general consensus that government campaigns of this kind have failed to make an impact. They lack resources, which reflects a lack of political will.

Mike Barry says that the government's campaign efforts have not worked. "The key issue is that the government has failed to make people realise that product sustainability is a big issue. It is up to business to deliver that, but at the moment we have our hands tied. The government should be saying to customers 'demand information from your retailer and the manufacturer'."

Phil Stubbs at Boots agrees: "I don't think the existing information campaigns have done very much at all. [The government's Advisory Committee on Consumer Products and the Environment] recognises the importance of consumer behaviour but it doesn't have enough resources to make a difference."

A key lesson is that the government has been half-hearted in supporting public information campaigns in the past. Any new attempt is likely to be foiled by the dead hand of Whitehall, and the government could learn from Danish experience by establishing an independent body to run this key area of chemicals policy (see 2.1 Toys and cosmetics). However, the government needs to be clear that funding will be permanent and sufficient for the task, and that the body's board must set its own priorities.

Lists and action plans

One way of sending a message to everyone from manufacturers to retailers is to publish a "list of undesirable substances" or "chemicals of concern" (see 3.3 Priority listing of undesirable compounds). This would signal that chemicals need to be reduced or phased out, and could be used as a basis for product planning by retailers, avoidance by consumers and product formulators alike.

Defra's Chemicals Stakeholder Forum has published such a list, but it is too remote from government. The government must support – and be seen to be supporting – this list directly, thus sending a clear message to all stakeholders of its intention to establish the foundation stone of a safer chemicals policy.

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[54] 11th report, Session 1998-99, Reducing the environmental impact of consumer products, The Stationery Office.

[55] Survey of Public Attitudes to Quality of Life and to the Environment: 2001, DEFRA, available at www.defra.gov.uk/environment/statistics/pubatt/content.htm

In any event, the CSF list is too narrow. In addition to being defined on criteria of persistence, bioaccumulation and toxicity, it should also include chemicals which are allergenic, carcinogenic, mutagenic, toxic to reproduction or capable of disrupting endocrine systems.

Further signposts may be needed for chemicals of particular concern where it is apparent that there is a serious threat to health or the environment which needs attention. In such cases the government should publish an action plan with timetables for further risk reduction measures.

The UK government therefore needs to:

- widen its communications and its listening to include all stakeholders in the chemicals debate, not merely the chemicals industry;
- Redraft its chemicals strategy to embrace the substitution principle to ensure that chemicals in products should be substituted with the least toxic, least environmentally harmful compounds that are compatible with an effective formulation;
- establish an independent consumer-focused campaigning body to promote sustainable consumption with long-term and adequate funding. The body should be run by a board containing representatives from all stakeholders including manufacturers, retailers, consumer and environmental groups;
- instruct the Chemicals Stakeholder Forum to expand its list of chemicals of concern to include allergens, carcinogens, mutagens, reproductive toxicants and endocrine disruptors;
- adopt and publish the Forum's expanded list of chemicals of concern along with a statement to the effect that such compounds are undesirable and that manufacturers and retailers should seek to substitute them with safer alternatives wherever possible; and
- draw up and publish action plans with timetables of the measures it intends to take to reduce the risks posed by chemicals of particular concern.

5.2 PROACTIVE MEASURES

Voluntary agreements to restrict the use of hazardous compounds have been popular with the UK government in recent years, despite limited success in the past. But unless they have teeth, they are distrusted by environmental groups, consumer associations and retailers alike.

Voluntary agreements may have a role to play in cases where hazardous properties are uncertain or where industries need time to adapt and find safer alternatives. In many cases voluntary agreements might pave the way for EU legislation restricting the use of particular chemicals – but the government needs to consider appropriate penalties if manufacturers fail to deliver on their undertakings when negotiating these agreements.

The government's 1999 chemicals strategy envisaged a need to "consider alternative measures at a national or European level" if voluntary agreements proved to be "insufficient or impracticable".[56] That strategy has now been overtaken by the European REACH proposals and

[56] Sustainable production and use of chemicals – a strategic approach, available at www.defra.gov.uk/environment/chemicals/strategy/index.htm

it remains to be seen whether these deliver more rapid progress on chemical testing and authorisation. But the government should not forget that it has regulatory powers to impose national restrictions on the use of chemicals if the process of agreeing EU legislation proves difficult or protracted (see 3.7 National bans).

National bans would be welcomed by some retailers as the appropriate action for hazardous compounds. Phil Stubbs of Boots thought that the most hazardous compounds should simply be removed from the market and that no other action was appropriate. Others see things more in shades of grey. Mike Barry said: "I think bans should be limited to extreme cases such as mercury and cadmium. They take time and can be fought in the courts. You need to have irrefutable evidence and you need to structure the legislative process so that it's more precautionary."

The UK government needs to be more ready to use national bans to follow through voluntary agreements and to deal with threats that may take many years to be resolved at European level. Ultimately the government should be guided by the substitution principle: hazardous substances should be substituted with safer alternatives wherever these are available.

Enforcement action

Consumers must be able to see that restrictions on the use of chemicals in products are enforced nationally. However, in the UK the role of policing the marketplace falls to local trading standards officers. Despite the existence of the Local Authorities Coordinators of Regulatory Services (LACORS), priorities are set on a local level and there has been little national action.

The lack of a strong national body responsible for chemicals in products means that there is little or no nationwide visibility for enforcement action. For example, the EU ban on the use of phthalates in babies' toys appears never to have been enforced by trading standards officers. The public is consequently left with a sense of unease that toys containing these chemicals may well be still on sale.

Mike Barry agrees there is a lack of direction in the service: "There is no general coordination on chemical safety. And how are trading standards officers to decide on whether products are over-packaged, for example? There is no guidance. At present we have bans on substances, but they are not policed."

This is a very different situation to that in Nordic countries where organisations such as the Swedish Chemicals Inspectorate and the Danish EPA have a national role in enforcing chemicals legislation (see 2.1 Toys and cosmetics).

There is a good case for stronger national coordination enforcement of legislation on chemicals in products, and the government should provide the resources to ensure that this is carried out. One possible solution is for the role to be assumed by the Environment Agency; another is to set up a central body to direct strategic monitoring of chemicals in products. This could work through local authorities' trading standards departments.

The UK government should:

- Make better use of its powers to ban or restrict the use of hazardous chemicals which threaten public health and the environment; and
- put in place regulators to ensure the effective national coordination and surveillance of chemicals in products in the marketplace.

5.3 PROVIDING INCENTIVES

Governments are major consumers of products and have enormous leverage in the marketplace. A fully rounded chemicals policy requires that a government does what it is asking others to do: consider the health and the environment in its actions and its purchasing.

Retailers, consumers and industry agree that the UK government should practise what it preaches. Its record so far has been little short of abysmal.

One key area where environmentally-responsible procurement has taken off is timber. The Prime Minister was lauded for committing government departments and agencies to purchasing timber from sustainable sources in 2000.[57]

However, implementing the policy has proved a nightmare for the government and destroyed its credibility on environmentally-responsible procurement. Greenpeace caught the Cabinet Office installing illegally-logged African mahogany doors in its Whitehall offices in April 2002.[58] And in June 2003, Greenpeace discovered Home Office building contractors using illegally-logged Indonesian timber in its new London headquarters.[59]

Despite such setbacks, the government must carry on trying to encourage sustainable consumption through environmentally-responsible procurement. First, it must concentrate on putting in place systems to ensure that environmentally-responsible procurement is practised by all its departments. Second, environmentally-responsible procurement policies need to expanded to include safer cleaning products, cosmetics, electronic equipment, textiles and other products likely to contain hazardous compounds.

A good starting point would be for the government to signal that it intends to specify that its computer equipment purchases should meet the TCO eco-label or Nordic Swan requirements for brominated flame retardants.

The government has been an enthusiastic advocate of special taxes to further its environmental policies – for example, the landfill tax and a proposed tax on pesticides. Taxes on hazardous substances could be a powerful means of pushing retailers and consumers towards alternatives, particularly where there would otherwise be a price premium on more environmentally-friendly products.

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[57] ENDS Report 306, p 27, Blair praised for commitment on sustainable timber purchases, July 2000.

[58] ENDS Report 327, Spotlight on Whitehall inertia on green procurement, p 34, April 2002.

[59] ENDS Report 341, Second government inquiry into 'illegal' timber, p 35, June 2003.

- The government should redouble its efforts to institute environmentally-responsible procurement across its departments, particularly in regard to purchasing products containing fewer hazardous substances; and
- it should consider imposing taxes on the use of hazardous substances in products.

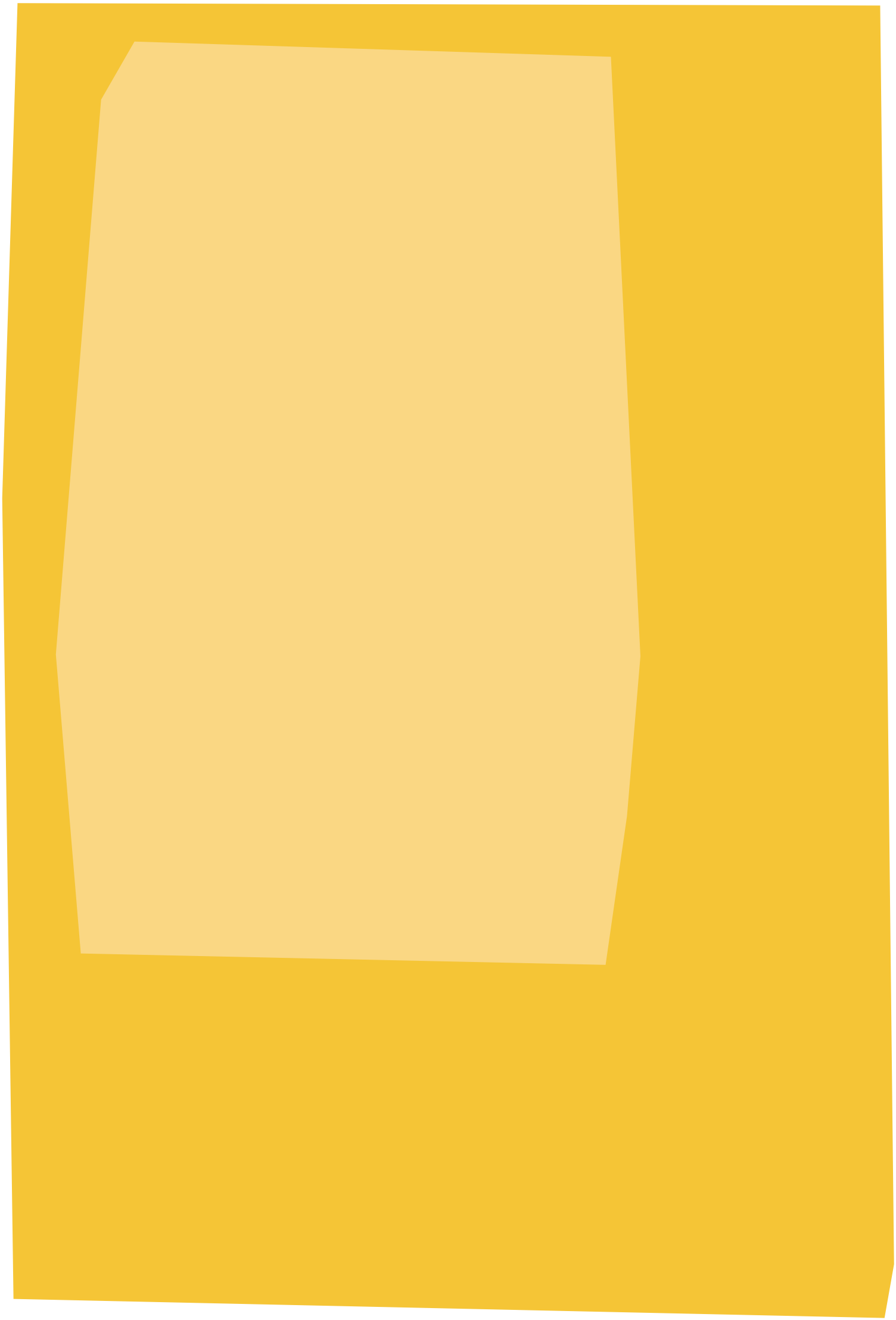
6 Recommendations

6.1 EUROPE

- The European Commission needs to develop an EU list of chemicals of concern to warn manufacturers, product formulators, retailers and the public that certain chemicals should be avoided where possible and may be subject to regulatory action in the near future.
- Action plans should be developed for individual chemicals of concern, so that impending regulatory action can be planned and stakeholders informed.
- The Commission should adopt the substitution principle as a foundation stone of a European chemicals policy.
- REACH should require member states to have an effective national body to ensure that products in the marketplace comply with chemicals legislation and do not contain hazardous or banned chemicals.
- The Commission needs to develop mechanisms whereby producers and users of chemicals are obliged to contribute funds to independently-led research programmes aimed at monitoring the impact of synthetic chemicals on human health and the environment.
- Where it is clear that industry-funded studies are inadequate or unreliable, the Commission needs to ensure that adequate research is carried out into the effects of key industrial chemicals on health and the environment.
- The Commission should establish periodic screening programmes for man-made chemicals in human breast milk, human blood and in wildlife.
- The Commission should ensure that mass flow analyses of key chemicals of concern are carried out to establish their sources, fates and environmental levels.
- The Commission should reguire industry to fund and coordinate schemes to develop analytical techniques to monitor their chemicals in the environmental media and in human and/or animal tissues.
- The Commisson should also ensure that pump-priming research into alternatives to hazardous chemicals in consumer products is funded to encourage innovation and the substitution of hazardous chemicals.
- The Commission should redouble its efforts to support the EU “flower” eco-label, informed by discussions with environmental and consumer groups, retailers and manufacturers.
- The Commission should develop a broad-ranging mandatory rating scheme similar to the EU Energy Label scheme, but which focuses on the chemical safety of products. The scheme should be developed in close cooperation with environmental groups, consumer organisations and retailers interested in sustainable, safer products. Priority products covered should include household cleaners, toiletries and cosmetics.
- The Commission should encourage companies to engage with European eco-labelling initiatives by pledging continuing support for public awareness programmes and environmentally-responsible procurement schemes.
- The Commission should deliver the public’s right to know the constituents of products. Either products should be comprehensively labelled, or the public should have access to such data freely and upon request.

6.2 THE UK

- The government should widen its communications and its listening to include all stakeholders in the chemicals debate, not merely the chemicals industry.
- The government should redraft its chemicals strategy to embrace the substitution principle: that chemicals in products should be substituted with the least toxic, least environmentally harmful compounds that are compatible with an effective formulation. Chemicals of very high concern should only be authorised for use when there is no safer alternative and when there is a genuine overriding societal need for the chemical. In which case, such authorisation should be time-limited and strict risk management measures imposed.
- The government should establish an independent consumer-focused public information body to promote sustainable consumption with long-term and adequate funding. The body should be run by a board comprising representatives from all stakeholders, including manufacturers, retailers, consumer and environmental groups.
- Ministers should instruct the Chemicals Stakeholder Forum to expand its list of chemicals of concern to include allergens, carcinogens, mutagens, reproductive toxicants and endocrine disruptors.
- The government should adopt and publish the expanded list of chemicals of concern along with a statement to the effect that such compounds are undesirable and that manufacturers and retailers should seek to substitute them with safer alternatives wherever possible.
- Where action is necessary to deal with chemicals of particular concern, the Department for Environment, Food and Rural Affairs should draw up and publish action plans with timetables of the measures it intends to take to reduce the risks posed by these substances.
- Where appropriate, the government should use its powers to impose national bans or restrictions on the use of hazardous chemicals which threaten public health and the environment.
- The government should consider new regulatory structures to ensure effective national coordination and surveillance of chemicals in products in the marketplace.
- The government should redouble its efforts to institute environmentally-responsible procurement across its departments, particularly in regard to buying products containing fewer hazardous substances.
- The government should investigate the scope for imposing taxes on the use of hazardous substances in products.



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WWF'S CHEMICALS AND HEALTH CAMPAIGN

Along with wildlife around the world, we are being subjected to an uncontrolled and dangerous global experiment. Exposure to hazardous man-made chemicals is putting us all at risk. Our children and wildlife are especially vulnerable. WWF's Chemicals and Health campaign is seizing a once in a lifetime opportunity to put an end to this threat, by asking people to help us ensure forthcoming European chemicals legislation brings chemicals under control.

WWF is calling for hazardous man-made chemicals to be properly regulated – replaced where safer alternatives exist, or banned where necessary.

CAMPAIGNING TOGETHER

WWF has joined forces with two campaign partners, the National Federation of Women's Institutes and The Co-operative Bank.

Women's Institute

As the largest women's organisation in England and Wales, the National Federation of Women's Institute is working for a safer future for our children and grandchildren.

www.womens-institute.co.uk

The CO-OPERATIVE BANK
Customer led, ethically guided

Through its Customers Who Care campaign, The Co-operative bank is calling for the phase out of persistent and bioaccumulative chemicals.

www.co-operativebank.co.uk/cwc

WWF

The mission of WWF – the global environment network – is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature, by:

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- ensuring that the use of renewable resources is sustainable
- promoting the reduction of pollution and wasteful consumption

Taking action for a living planet

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