PVC-Free Future:
A Review of Restrictions and PVC free Policies Worldwide

A list compiled by Greenpeace International

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Introduction

Greenpeace has been campaigning for the phase out of organochlorines since 1987, because their production leads to the release of hazardous substances which are persistent, toxic or bioaccumulative. The production of PVC plastic uses the largest proportion of chlorine produced (30%) and is a major source of hazardous substances in the environment, both during manufacture and disposal. As well as using chlorine as a raw materials, PVC contains many additives, some of which are also hazardous, such as heavy metal stabilisers or phthalate softeners. Greenpeace has focussed specifically on PVC since the early 1990's and is calling for its material substitution with cleaner alternatives, as a way of eliminating these hazardous substances.

As a result, a large number of governments, local authorities, businesses, and various other organisations have agreed to restrict or phase out PVC and chlorine to various extents. This report is a compilation of these restrictions, to the best of our knowledge. It demonstrates the feasibility of replacing chlorine and PVC with cleaner alternatives and shows that this is actually happening at an increasing level, in a large number of different countries and businesses.

This report is in two sections. The first lists the many international agreements on the elimination and reduction of hazardous substances, in particular organochlorines, and lists specific actions taken by national and local governments, and other organisations, to restrict chlorine and PVC. The second section lists the companies that have taken varying degrees of action to phase out the use of PVC: some have virtually eliminated PVC, such as IKEA and LEGO, others have recently initiated a phase out, such as NIKE.

1 Political

1.1 Summary of Political Initiatives

Over the years there have been a number of international agreements on hazardous substances, and organochlorines specifically. The most notable recent agreement is the **OSPAR** agreement to 'move towards the target of cessation of discharges emissions and losses of hazardous substances by the year 2020', which is known as the **'generational goal'**. This agreement was made by 14 countries discharging into the North East Atlantic, and the EU.

The most significant global initiative on hazardous substances is agreement of a legally binding global convention on **Persistent Organic Pollutants (POPs)** by the United Nations Environment Programme (UNEP), which has prioritised 12 POPs for action, including dioxins and furans. The convention was signed in Stockholm in May 2001.

Restrictions on PVC by cities and communities began in the German town of **Bielefeld** in 1986. Since then numerous restrictions have been enacted in Germany, and there are currently 274 communities and 6 Federal States which have confirmed their policies in writing. In the early 1990's many local authorities in **Austria, The Netherlands** and the **Nordic** countries also restricted PVC. In the late 1990's the trend spread to **Spain**, where 62 Spanish cities have been declared PVC free, and to the **UK, Japan** and the **USA.**

Sweden was the first country to propose **national restrictions** on PVC generally; in 1995 the Swedish Parliament voted to phase out both soft and rigid PVC, which led to following comment by the Swedish Minister for the Environment, Anna Lindh; '*The question is not whether to phase out PVC, but how to phase it out'.* Acting on this commitment was postponed until 1999, when a new chemical strategy was made law in an Environment Bill, to implement the OSPAR generational goal. The strategy includes deadlines for voluntary phase outs of several PVC additives and a ban on phthalates in toys for children under three.

In **Denmark** a new strategy on PVC was announced in June 1999 by Environment Minister Svend Auken, partly in response to criticism of the voluntary efforts to recycle PVC waste that have been in place since 1991 in Denmark. The strategy includes a sales taxes of 2 Danish Kroner per kilogram of PVC and 7 Danish Kroner per kilogram of phthalates. The aim of the strategy is to limit incineration of PVC and includes an action plan for reducing and phasing out phthalates in soft plastics, a coming ban on lead stabilisers, substitution of PVC-products that are difficult to separate from the common waste stream and tight measures to avoid downcycling of PVC waste into products of inferior quality - effectively disqualifying several current downcycling practices.

Most recently, in **Germany** the environment agency published a paper in June 1999 which called for an end to the use of phthalate softeners and a gradual phase-out of the use of soft PVC.

Partly as a response to these various national and local initiatives to restrict PVC in European countries, in July 2000 the **European Union** published a Green Paper on PVC which assesses various environmental and health issues related in particular to PVC waste management and presents a number of options to reduce those impacts. The **European Parliament** debated the Green Paper and called on the Commission to act on a number of issues, including a substitution policy and the replacement of soft PVC.

In December 1999, the **European Union** agreed to an **emergency ban** on six phthalates in soft PVC teething toys. Since 1997, bans on phthalates in soft PVC toys have taken effect in **Austria, France, Greece, Mexico, Norway**, **Sweden**, **Denmark, Finland, Germany**, **Italy, Tunisia** and the **Fiji Islands. Japan** is in the process of implementing a ban. Recommendations for withdrawal of vinyl toys have also been made by the Belgian, Danish, Dutch, German, Filipino, US and Canadian health authorities.

In 2001 the first total ban on PVC was agreed. On May 16 2001 the Parliament in Slovakia voted for a new Waste Management Act. Part of this Act is a **total PVC ban for all products,** including packaging**.**

1.2. International Agreements on Hazardous Substances.

International agreements and conventions have set the direction and priority on how to address hazardous substances. Many of them have identified substances which are persistent, toxic and bioaccumulative, and have specified organohalogens as a priority target. Synthetic chlorine based substances (organochlorines) make up a substantial proportion of organohalogens. Greenpeace is campaigning for these agreements to be implemented through a clean production approach, which targets the substitution of hazardous substances or materials which give rise to hazardous substances such as PVC, as the most effective method of stopping the release of these dangerous substances into the environment.

Organochlorines have been regarded as a dangerous class of compounds by many legislators since the 1970s. Since then many regional forums have recommended the phase-out of discharges of organochlorines to the environment:

Mediterranean

In 1993, the Contracting Parties to the Barcelona Convention on the Mediterranean Sea, in a recommendation adopted on the 'Implementation of the Land Base Sources Protocol and Dumping Protocol,' agreed:

'...to recommend that the Contracting Parties reduce and phase out by the year 2005 inputs to the marine environment of toxic, persistent and bioaccumulative substances listed in the LBS [Land Based Sources] Protocol, in particular organohalogen compounds having those characteristics. In this framework, high priority is to be given to both diffuse sources and industrial sectors which are sources of organohalogen inputs.'

The Contracting Parties to the Barcelona Convention also agreed:

'...to promote measures to reduce inputs into the marine environment and to facilitate the progressive elimination by the year 2005 of substances having proven carcinogenic, teratogenic and/or mutagenic properties in or through the marine environment.' This is to include organophosphorous pesticides.'

The Contracting parties to the Barcelona Convention are Albania, Algeria, Bosnia Hercegovina, Croatia, Cyprus, Egypt, the European Union, France, Israel, Italy, Lebanon, Malta, Monaco, Morocco, Portugal, Spain, Slovenia, Syria and Tunisia.

North-East Atlantic (OSPAR & North Sea Conference)

In 1992, the Contracting Parties to the Oslo and Paris Conventions (OSPAR) for the prevention of marine pollution in the North East Atlantic adopted a series of commitments to reduce and eliminate discharges of toxic chemicals into the sea.

Luxembourg and Switzerland joined the Ministers from the Contracting Parties (13 countries and the European Union)[1], and signed with them the 1992 'OSPAR Ministerial Declaration', by which they all agreed that:

'...as a matter of principle for the whole Convention area, discharges and emissions of substances which are toxic, persistent and liable to bioaccumulate, in particular organohalogen substances, and which could reach the marine environment should, regardless of their anthropogenic source, be reduced, by the year 2000, to levels that are not harmful to man or nature with the aim of their elimination; to this end to implement substantial reductions in those discharges and emissions and where appropriate, to supplement reduction measures with programmes to phase out the use of such substances.'

At the North Sea Conference in June, 1995 the European countries bordering the North Sea signed the following declaration *(Ministerial Declaration of the Fourth International Conference on the Protection of the North Sea. Final Declaration, Esberg, Denmark. June 9, 1995. Paragraph 17.):*

[1] The Contracting Parties to the Oslo and Paris Conventions are Belgium, Denmark, the European Union, Finland, France, Germany, Iceland, Ireland, the Netherlands, Norway, Portugal, Spain, Sweden, and the UK.

‘Ministers agree that the objective is to ensure a sustainable, sound and healthy North Sea ecosystem. The guiding principle for achieving this objective is the Precautionary Principle. This implies the prevention of the pollution of the North Sea by continually reducing discharges, emissions and losses of hazardous substances thereby moving toward the target of their cessation within one generation (25 years) and the ultimate aim of the concentration in the environment near background values for naturally occurring substances and close to zero concentrations for man-made synthetic substances.’

Definition of Hazardous Substances. Annex 2:

‘In the content of the declaration hazardous substances are defined as substances or groups of substances that are toxic, persistent and liable to bioaccumulate. This definition of toxic should be taken to include chronic effects such as carcinogenicity, mutagenicity, teratogenicity and adverse effects on the function of the endocrine system.’

This commitment was consolidated by OSPAR in July 1998, *(Ministerial meeting of the OSPAR Commission, Sintra Statement, 23 July 1998)* which agreed:

‘...to prevent pollution of the maritime area by continuously reducing discharges, emissions and losses of hazardous substances (that is, substances which are toxic, persistent and liable to bioaccumulate or which five rise to an equivalent level of concern), with the ultimate aim of achieving concentrations in the environment near background values for naturally occurring substances and close to zero for man-made synthetic substances. WE SHALL MAKE every endeavour to move towards the target of cessation of discharges, emissions and losses of hazardous substances by the year 2020. WE EMPHASIZE the importance of the precautionary principle in this work.’

To this end, the Commission will:

‘– implement our strategy progressively and with well-defined intermediate targets: this implementation will start from the OSPAR List of Chemicals for Priority Action which we have already agreed, including carrying forward the drawing up of programmes and measures by 2002.’

The OSPAR List of Chemicals for Priority Action includes several substances which are by-products of the production of chlorine and PVC, or additives in PVC: dioxins & furans, chlorinated paraffins, mercury and organic mercury compounds, lead and organic lead compounds, organic tin compounds, certain phthalates (DBP & DEHP).

In addition the Commission stated:

"WE ACKNOWLEDGE the need to provide consumer and purchaser with information on hazardous substances in goods thereby promoting the reduction of risks from the use of such chemicals, and WE WILL DEVELOP, individually or

jointly, further means for disseminating this information."

International Joint Commission - USA/Canada

In April, 1992, the International Joint Commission on Great Lakes Water Quality published its Sixth Biennial Report and stated:

'It is prudent, sensible and indeed necessary to treat these [chlorinated organic] substances as a class rather than as a series of isolated individual chemicals. Further, in many cases, alternative production processes do exist. The Commission concludes that the use of chlorine and its compounds should be avoided in the manufacturing process.

'The Commission therefore recommends that the Parties, in consultation with industry and other affected interests, develop timetables to sunset the use of chlorine and chlorine-containing compounds as industrial feedstocks and examine the means of reducing and eliminating other uses, recognising that socio-economic considerations must be taken into account in developing the strategies and timetables.'

The latest Biennial Report of the International Joint Commission (1996) states (page 32):

'A large and increasing amount of polyvinyl chloride (PVC) is manufactured and used in the Great Lakes basin. The industry states that its production and use is harmless and even environmentally beneficial, that PVC is a stable product and its manufacture does not cause pollution. We are concerned about the growing use of this material and the need to address its eventual disposal and destruction, through incineration or the open environment. We encourage industry and Governments to address these issues within a full lifecycle and cost-accounting framework and continue research to develop more environmentally benign alternatives.'

United Nations Council on Environment and Development (UNCED)

In Agenda 21 in Chapter 17 on 'Protection of the Oceans,' the participants to the 1992 Rio 'Earth Summit' agreed that:

'As concerns other sources of pollution, priority actions to be considered by states may include...eliminating the emission or discharge of organohalogen compounds that threaten to accumulate to dangerous levels in the marine environment.'

UNCED Agenda 21, Chapter 19 calls for governments, through the cooperation of relevant international organizations and industry to:

'adopt policies and regulatory and non-regulatory measures to identify, and minimize exposure to, toxic chemicals by replacing them with less toxic substitutes and ultimately phasing out the chemicals that pose unreasonable and

otherwise unmanageable risk to human health and the environment and those that are toxic, persistent and bio-accumulative and whose use cannot be controlled.'

United Nations Environment Programme (UNEP)

The United Nations Environment Programme Governing Council in 1990 (Decision 16/30 B) recommended:

'...accelerated work on reducing the use and emission of hazardous substances that are toxic, persistent and bioaccumulative with the ultimate aim of phasing out those uses which cannot adequately controlled and obtaining agreed regional timetables for phasing them out.'

UNEP – global action on Persistent Organic Pollutants

As follow-up to the Earth Summit, or the Rio Declaration of 1993, governments agreed in February 1997 to negotiate a legally binding global convention to reduce and/or eliminate persistent organic pollutants or 'POPs.'. At its 19th Governing Council Meeting in February, 1997, UNEP agreed to start negotiations toward this goal and the first meeting of an Intergovernmental Negotiating Committee (INC) took place in June 1998 in Montreal.

On 23 May 2001, the Stockholm Convention on Persistent Organic Pollutants was adopted. The short titles include Stockholm Convention, POPs Convention, and POPs treaty. The POPs Convention will enter into legal force and thereby become part of international law after ratification by 50 countries is received by the United Nations (plus 90 days).

12 POPs have been given priority (the 'dirty dozen').

The production and use of existing intentional POPs listed in Annex A are to be prohibited/eliminated EXCEPT as allowed by Annex A. Annex A includes in Part I, the chemicals Aldrin, Chlordane, Dieldrin, Endrin, Heptachlor, Hexachlorobenzene, Mirex, Toxophene, and PCBs. Part II of Annex A addresses PCBs specifically. Annex A contains general exemptions available to all Parties, and country specific exemptions. The production and use of DDT, is to be restricted rather than eliminated.

The requirements of the Stockholm Convention for releases of dioxins and other by-product POPs (furans, hexachlorobenzene and PCBs) are that each Party "shall, at a minimum reduce the total releases derived from anthropogenic sources of each of the chemicals … with the goal of their continuing minimization and, where feasible, ultimate elimination."

New Chemicals with POPs characteristics are to be banned. Parties are to incorporate into their assessment schemes the criteria contained in Annex D (persistent, bioaccumulative, long-range transport, adverse effects such as toxicity). Chemicals (pesticides and industrial chemicals) being developed that exhibit these POPs characteristics are to be banned from production and use.

Many POPs are chlorine- containing, synthetic compounds, as are all of the 'dirty dozen'. Of the 12, DDT, toxaphene, chlordane, heptachlor, endrin, mirex, aldrin and dieldrin are pesticides. PCBs and hexachlorobenzene are industrial chemicals. Dioxins, furans, PCBs, and hexachlorobenzene can arise as by-products of the production, use and disposal by incineration of chlorine-containing chemicals.

1.3 National PVC & Chlorine Restrictions and Other Initiatives: A-Z

Argentina

a) National Government
In November 1999 the Argentinean Ministry of Health decided to ban soft PVC toys. The ban will initially be for a year while the issue is investigated and a method to quantify migration validated. It will cover all toys and baby articles containing phthalates that could be chewed by children under three.

b) Regional, City and Community
In August 1998 the Senate of the province of Corrientes, Argentina, passed a resolution to maximise controls on PVC products for children under 3, particularly those that could be sucked or bitten, asking retailers in the Province of Corrientes to voluntary withdraw soft PVC toys designed to be sucked by children and deciding to inform cities that are part of the province of Corrientes and the media. A similar resolution was passed by the Council of the city of Santa Fe, on October 7, 1998.

Austria

a) National Government
Austria was the first country to ban phthalate plasticisers in toys for children under three years old (phthalates are most commonly used in soft PVC). The ban came into force in January 1999.

The Environment Ministry has a 'PVC working group', which discusses PVC issues like toys and local construction PVC restrictions. The goal of this working group is to network with local/regional authorities on PVC and PVC alternatives. The longer term goal is to get a proposal from the Environment Ministry on Federal PVC building policy based on all the knowledge available in Austria after over 10 yeas of debate on PVC issues. Greenpeace is a member of the PVC working group. (ref. Its coordinator is Mrs. Eva Reiss, Federal Ministry for Environment, Tel: +43-1-51522-2332)

b) Regional, City and Community
The Austrian city of Linz has recently achieved an 85% PVC phase-out in public buildings. Seven of the nine regional governments in Austria have now placed restrictions on the use of PVC: Vienna, Lower Austria, Styria, Salzburg, Tyrol, Vorarlberg, Upper Austria.

Regional Capitals have also restricted the use of PVC: Vienna, Linz, Salzburg, Innsbruck, Bregenz, Klagenfurt, Graz. Other Smaller communities include: Sankt

Valentin, Traun, Bruck an der Leithha, Judenburg, Hoechst, Wolfurt, Ludesch, Feldkirch, Dornbirn, Wolfsberg, Klosterneuburg.

The public transport system in Vienna is PVC-free, as is the main Viennese hospital.

c) Other organisations
The Austrian Supreme Court ruled on a complaint by the PVC industry about a Greenpeace billboard campaign, summarised the hazards of PVC and stated 'Therefore it can be summarised that the statement of the accused 'PVC is an environmental poison' is not untrue.' (April 1994).

Belgium

a) National Government
On October 3, 1997, Marcel Colla, Belgian Minister of Public Health urged toy retailers to take immediate voluntary measures to cease the marketing of soft PVC toys designed to be chewed by young children.

In December 1997 the Belgian government division 'Kind and Gezin (Child and Family),' which oversees the health and safety of 70,000 children in public and private day care centres and kindergartens in the Dutch-speaking part of Belgium, provided information to parents, especially new mothers, recommending they not buy soft PVC toys. A letter was sent to the owners and operators of the facilities, urging them to 'be critical when buying toys and choose alternatives, and not soft PVC toys.' Lastly, 'Child and Family' called on the toy industry to ban PVC from their production lines. The French equivalent organisation, O.N.E., 'Office de la Naissance et de l'Enfance', acted similarly after receiving advice from its paediatric advisors in the French speaking part of Belgium.

On January 19, 2001 Belgium informed the European Commission that it aims to widen the European ban on phthalate plasticisers currently covering toys designed to be sucked or chewed.

Canada

a) National Government
In June 1996 Health Canada issued a public warning on lead in PVC mini-blinds.

In relation to packaging, Division 23 of Part B of the Food and Drug Regulations under the Food and Drugs Act contains the following clauses:
B.23.002 Subject to section B.23.003 no person shall sell any food in a package that has been manufactured from a polyvinyl chloride formulation containing an

octyltin chemical. (B.23.003 gives some exceptions to the previous section for certain kinds of organotins and certain kinds of foodstuffs.)
B.23.007. No person shall sell a food in a package that may yield to its contents any amount of vinyl chloride (according to a specified test method).

In November 1998, the government health authority, Health Canada, advised parents to throw away soft vinyl (PVC) toys designed to be sucked or chewed, "because there are scientific indications of a potential health risk for very young children (weighing less than 8kg) who have high oral contact with soft vinyl products".

b) Regional, City and Community
In November 1994, BC Environment (the Environment Ministry of British Columbia) issued a 'Backgrounder' entitled 'A Timely and cost-effective Environmental Strategy for the Management of British Columbia's Biomedical Waste Stream'. Under the heading 'Long term actions to be taken', it says:

'We will challenge the hospitals and other users of products made with PVC plastic to use their purchasing power with manufacturers to bring about a transition to non-PVC plastics, consistent with these new plastics meeting appropriate performance specifications'.

Toronto City Council, at its meetings on April 29 and 30, 1996, adopted the following resolutions (amongst others):

'Ensured that when the City of Toronto disposes waste material containing PVC, the material will not be sent to an incinerator, it must be recycled or landfilled.'
'Directed that only ductile iron pipe or concrete will be used for water lines installed in soils that are contaminated with substances, such as solvents or hydrocarbons, that can permeate through plastic or PVC pipe.'

'Requested the Province of Ontario and the Federal Government to introduce legislation or regulations that will prevent the disposal of PVC waste by incinerator.'

'Expressed its continuing support for the virtual elimination of persistent toxic substances such as organochlorines to the environment'.

'Requested the Acting Fire Chief to report on setting up dioxin residue tests for scenes of fires.'

A large fire in Hamilton, Ontario also generated much concern about PVC fires, especially since high levels of dioxins were found in the soot on-site.

Cyprus

Cyprus has banned the sale of baby toys made of PVC (polyvinyl chloride) containing phthalates. Cyprus' Commerce and Industry Minister Nicos Rolandis announced the ban on Friday November 12, which was effective immediately. The ban makes Cyprus the first European Union (EU) applicant state to ban the toys.

Czech Republic

a) National Government
A Waste Bill, signed in May, 1997, stipulates that: 'From the 1st January 2001 it is forbidden to produce and import packaging made of polyvinylchloride (PVC) and products packaged in such material.' (See 4.1). In December 1999, the

Parliament cancelled PVC packaging ban in a new Chemical Act. In February 2000, the Lower House of Parliament adopted a new Waste Act which bans the use of PVC packaging after 2008.

On May 11, 1998, the Chief Health Officer of the Czech Republic, Dr. Jiri Vytlacil, informed citizens that PVC toys for children under one year of age have not been approved for marketing in the country.

In February 2001 an emergency ban on phthalates in PVC Toys similar to the EU emergency ban entered into force. (Regulation No. 84/2001 Sb. Czech Ministry of Health from February 27, 2001)

Denmark

a) National Government

In 1996 the Danish Parliament adopted a Statement on the "Proposal for Parliamentary Resolution for the Phasing Out of PVC". The statement places specific restrictions on the manufacture, use and disposal of PVC. While the Danish government is not ready to call for a strict ban on PVC, the measures adopted address different problems in the PVC life-cycle, from manufacture and use, to disposal. The Environment Committee also called for the elimination of heavy metal stabilisers and phthalates, the minimisation of PVC construction material use in public buildings and the reduction of the incineration of PVC waste. Minister of the Environment Svend Auken predicted that fulfilment of these objectives would likely lead to a reduced use of PVC. The measures follow a report published in January of 1996 which warns of the potential toxic and oestrogen-mimicking effects of phthalate plasticisers used in flexible PVC products.

December 1998, a national **ban on lead stabilisers in plastic and regenerated plastic** waste was notified to the European Commission.

A national **ban on phthalate plasticisers in toys and childcare articles** for infants under 3 came into force on 1 April, 1999. Companies are given one year to clear existing stock, and inflatable toys are allowed until 1 January, 2003.

January 1 1999, a tax of 12 kr/kg (approx. 2 dollars/kg) on all PVC foils (clingfilm or saran wrap) for foodstuffs entered into force. Most packaging materials on the Danish market will be taxed relative to environmental impacts from April 2001. The new measure results in minor reductions in tax rates for PVC from DKr12 to DKr 11 per kilogram.

In June1999 a new **strategy on PVC** was announced by Environment Minister Svend Auken, in part in response to criticism of the voluntary efforts to recycle PVC waste that have been in place since 1991 in Denmark. The new strategy includes a separate **Action plan for the Reduction and Phasing-Out of Phthalates in Soft Plastic** where there is the goal of reducing the use of

phthalates by 50 per cent by the year 2010. This is Denmark's first concrete step towards implementing its OSPAR commitments.

The PVC strategy from the Danish government includes:

- A tax on PVC of two Danish Kroner per kilogram (Approx. 0.3 USD/kg) (entered into force 1 July 2000).
- A tax of 7 Danish Kroner per kilo of phthalates (Approx. 1.2 USD/kg) (entered into force 1 July 2000).
- New PVC products must be free of additives containing environmental contaminants and substances which are harmful to health
- PVC products which are difficult to separate must be substituted as far as possible
- As far as possible PVC must be kept away from incineration plants
- Relevant treatment technologies must be developed
- Recyclable PVC must be collected and regenerated
- Recycling PVC containing heavy metals must be limited and only occur in controlled systems

Besides this, Minister for the Environment, Svend Auken, also pledged to lobby in the European Union for a phase-out of the use of PVC in underbody coating for cars and in textile printing.

In September 1999, a decision was made by the government to exempt rigid plastic construction goods from its proposed tax on PVC, because plastic pipes, doors and window frames "exist largely outside the waste stream,"[2].

Lead. A wide-ranging ban on lead was announced on 14th November 2000. Lead stabilisers in various PVC products are forbidden by the following dates:

Windows and profiles: 1. December 2001
Other products (incl. recycled PVC, cables etc): 1. December 2001
Gutters: 1. December 2002
Roofing: 1. December 2003
Pipes: 1. December 2003
Cables that are contained in a product: Allowed until further notice.

Public procurement. In 1996, the Danish EPA started issuing environmental guidelines for public procurement of specific products. There are now approximately 30 guidelines and this number is expected to rise to 50 by the year 2000. For product groups that could contain PVC, there are recommendations to avoid PVC-containing products. A majority of the guidelines contain recommendations to avoid PVC.

b) Regional, City and Community

The municipality of Aarhus has a PVC free policy for toys. Aarhus is the second largest town in Denmark. They specify that products should be PVC-free and natural rubber (latex) free products. It should be specified which plastic material plastic toys are made of. The city of Aarhus is also committed to reduce the use of PVC in hospitals and other institutions.

c) Other Organisations
The Danish Consumers Council said in a letter in May 1998 (See 4.2). 'On this background the Consumer Council finds that the health and environmental problems related to PVC are so serious that the use of PVC should be banned as soon as possible with the exception of some very specific areas where there are no alternatives.'

Danish Consumer Council, Danish Nature Conservation Foundation, WWF, NOAH, the Danish Consumer Council, The Ecological Council and Greenpeace have all in a letter (May 1999) to the Minister for Energy and the Environment Svend Auken asked for a speedy ban (with a few exemptions) on PVC.

Grenaa Hospital began implementing a PVC elimination program in 1988 and is a world leader in reducing the use of PVC. An 80 page PVC-free Handbook (in Danish), was published in 1997, including PVC alternatives for medical, kitchen, and office products. Constantly updated, interested users can view the list on the web in Danish at: www.aaa.dk/pvc.

European Union

April 24, 1998 – The EU Scientific Committee on Toxicity, Ecotoxicity and the Environment concluded that PVC teething rings made from polyvinyl chloride (PVC) leach up to ten times what is considered acceptable levels of softeners known as phthalates. On May 20, 1998 the European Commission agreed on the need for a directive to specifically address soft PVC toys in the medium to long term. A proposal by European Commissioner for Consumer Protection, Emma Bonino for an emergency ban, was rejected by Commissioners. However, a recommendation that Member States take action to protect children's health was published in the official journal.

Over a year later, on December 8, 1999, the European Commission finalised a precedent setting **emergency ban** on six toxic softeners found in soft PVC toys marketed for teething, to be implemented by Member states within 10 days. The EU ban includes all new products ordered by retailers. However, the measure only covers toys intended for the mouth, even though it is well documented that young children put all toys into their mouths. The EU is also pursuing a permanent ban of these products that will include a warning label on additional PVC products telling parents not to allow children to mouth them. In July 2000 the European Parliament voted to toughen the draft law so that the restriction should cover all phthalates, rather than six phthalates as proposed. It also voted

to reduce the maximum allowed concentration of phthalates in PVC to 0.05 percent instead of 0.1 percent, and to ban any PVC toys containing perfumes, such as fruit flavours, which tempt children to suck them.

The European Union is currently exploring 'horizontal' measures to address the problem of PVC in the waste stream, after measures to ban the use of PVC in cars were removed following industry lobbying (in a proposed Directive on End of Life Vehicles).

On 26 July 2000, The European Commission published a **Green Paper on PVC**[2]. The Green Paper assesses various environmental and health issues related in particular to PVC waste management and presents a number of options to reduce those impacts. It also launched a public consultation process with a view to presenting a comprehensive Community Strategy on the environmental issues of PVC.

The Commission's document reveals that incineration of PVC leads to the formation of enormous amounts of hazardous waste -– in many cases more than was actually put into the incinerator. It states that all scenarios calculated showed that it is better for the environment not to incinerate PVC. It finally states that PVC waste incineration benefits from a hidden subsidy, as the additional costs for special treatment required are not allocated to PVC but spread across all wastes sent to incineration.

The European Parliament debated the Green Paper on April 3 2001, and rejected calls for a voluntary approach to regulating the environmental impacts of PVC. Their resolution[3] calls on the Commission to act on a number of issues, including:

- bring forward as soon as possible a draft long-term horizontal strategy introducing substitution policies based on a comparative analysis of alternative products throughout their life cycle for various categories of products including, in particular, products directly linked to human health, disposable products and products that are difficult to separate.

- rapidly introduce a policy on the replacement of soft PVC, in so far as the current risk analysis of phthalates indicate that it is desirable to reduce the exposure of people and the environment.

- issue a recommendation to the Member States calling on them not to use PVC as a building material in buildings with a high fire risk.

- propose appropriate measures to ensure separate collection of PVC products, due to the problems they cause in each waste disposal option, in particular during incineration.

- present amendments ….. with the aim of banning all use of lead as a stabiliser in PVC.

[2] The European Commission Green Paper Environmental Issues of PVC is available on http://europe.eu.int/comm/environment/pvc/index.htm

[3] See http://www.europarl.eu.int

- the introduction of compulsory marking so that PVC can be easily distinguished more easily from other plastic waste.....

In addition, the European Parliament:

- suggests that the Commission and the PVC industry, taking also into account the current studies, should look into the possibility of fixing objectives for reduction of the use of phthalates particularly in medical products.

- stresses that there is a substantial difference between soft and hard PVC and it is therefore important to separate their waste as early as possible, with a view of directing hard PVC waste as a priority towards recycling or landfill and soft PVC waste towards incineration, which, due to their low chlorine content in soft PVC, is potentially less dangerous than landfill where there are risks of losses of plasticisers especially phthalates.

- that the 'polluter pays' principle be applied in full, thereby charging producers for part of the additional costs incurred because of the presence of PVC in incinerated waste, and proposes that this approach be extended to the processing of other types of waste which entail extra costs.

- notes that neither incineration nor landfilling is a sustainable option for management of waste.

Further proposals from the Commission will ultimately be considered by EU Member States.

c) Other Organisations
April 9, 1998 – The European consumer's organisation, Bureau European des Unions de Consomatteurs, called on the European Commission to urgently ban soft PVC toys.

Fiji Islands

October 24, 2000. The Ministry of Trade and Commerce of the Fiji Islands announced a ban on the sale of children's items made of PVC. The ban extends beyond soft PVC toys intended for children's mouths to include other articles such as stroller covers and mattress covers.

Finland

In February 1999, the Finnish Trade Ministry informed the EU that it would ban six additives in toys and childcare products for children under three that are intended for oral use (the additives are mostly used in soft PVC). The ban would begin three months from adoption.

France

France placed a one-year ban effective from July 7, 1999 on childcare items made from soft PVC containing phthalate softeners. In a decree, the industry ministry ordered a temporary halt to the sale, import, export and manufacture of items intended to be placed in the mouth of children under 36 months and called for the removal of all articles currently in circulation, on the grounds of public health[4].

Germany

a) National Government

The German EPA (UBA) and the Ministry of Health (BGA) have recommended that 'the use of plastics containing chlorine and bromine should be completely excluded, as far as is possible. UBA and BGA propose a ban on the use of plastics containing chlorine and bromine in apparatus susceptible to fire'[5]. A more recent study by the UBA recommends 'the use of chlorine-free materials in areas susceptible to fire with high density of people and high material assets'[6].

In 1994, the German Bundestag set up an Enquete Commission (a coalition assembly body); the majority vote concluded: 'The ecologically acceptable recovery and disposal of PVC creates significant costs. It is not acceptable that the general pubic is burdened with the disposal costs of PVC or other materials … It shall be ensured, that the disposal and recovery costs of PVC as well as for the substitutes are integrated into the product price and that public spending is eased of the disposal costs'. The dissenting vote recommended substituting for PVC/wood composite materials and proposed take-back-and-recycle obligations for long-lived PVC products, as well as 'substitution of short-lived PVC products (e.g. packaging and toys) and of those long-lived PVC products that cannot be recycled with acceptable effort due to their degree of distribution and/or their product composition (e.g. wallpaper and underbody coating)'[7].

On the wider issue of use of chlorine/halogens, in 1992, the German Federal Government enacted a prohibition against using chlorinated and brominated compounds as petrol additives in order to reduce the release of chlorinated and brominated dioxins and furans from car exhausts[8].

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[4] ENDS Daily - 07/07/99

[5] German Federal Office of the Environment (1992). Environmental Damage by PVC: An Overview. Berlin: Umweltbundesamt, 1992.

[6] Areas of Action and Criteria for a Preventative Sustainable Substance Control Policy using PVC as an Example, UBA 1999.

[7] Enquete Commission, 1994.

[8] Schulz, D. 1993. PCDD/PCDF – German policy and measures to protect man and the environment, Chemosphere 27 (1-3): 501-507.

According to German municipal waste regulations, depositing PVC on waste dumps is banned from 2005, along with all organic waste (for example wood, paper, victuals and other plastics) which can only be disposed of after initial thermal treatment.

At the level of the [German] Länder it was agreed in a joint statement that the input of PVC to waste incinerators will be minimised and that PVC products which are difficult to recycle will be phased out[9].

December 12, 1997 – The German Federal Institute for the Protection of Consumer Health and Veterinary Medicine, the BgVV, issued a statement which called on toy manufacturers to take steps to 'markedly reduce the burden of softeners or to stop using them altogether in toys for small children'. It also called on the industry 'as a matter of responsibility, to see that these products do not get on the market'.

The BgVV further recommended that 'parents not buy toys made of soft PVC for children up to three years of age, since it cannot be said with certainty that these products are safe.'

In a letter to Greenpeace Germany (January 15, 1998), the German Ministry of Health stated that 'it would be highly desirable for industry to voluntarily refrain completely from selling teething rings and other baby toys made of soft PVC'. On February 18, 1998 the German Ministry for Family Affairs agreed with the Minister of Health concerning the need for industry to withdraw soft PVC toys from the market.

In July 1999 Germany forwarded the text of a proposed law prohibiting the use of phthalate chemical softeners in babies' toys to the EU for approval[10]. The law, which bans the use of phthalates in any toy designed to be used by a child under 36 months, came into force on 7 March, 2000.

On the wider use of phthalates in soft PVC, the German environment agency published a paper in June 1999 which called for an end to the use of phthalate softeners and a gradual phase-out of the use of soft PVC[11].

b) Regional, City and Community

In 1986, the town of Bielefeld became the first community in Germany to enact restrictions against PVC. Since then numerous restrictions have been enacted. Greenpeace Germany has compiled a list of 274 communities which have confirmed in writing their policies to phase out or restrict, in addition to six Federal States (see 3.3). Some of the bigger ones include:

[9] "Position Paper of the Netherlands on PVC", Ministry of Housing, Spatial Planning and the Environment, October 1997, p.16.
[10] ENDS Daily - 26/07/99
[11] ENDS Daily - 26/07/99

Bonn. On December 13, 1995, the Committee for Environmental Issues of the German Capital city of Bonn announced a policy which would phase out most major uses of PVC in public construction.

Berlin. Over 130 public building projects completed since 1989 have been built with restrictions on the use of PVC.

Hesse. PVC is allowed only if a recycling guarantee is given, the product has a high recycling content, it does not contain heavy metal stabilisers (in particular lead and cadmium) and the PVC-free product is more than 20% more expensive. Hesse avoids many PVC uses.

Aachen. In 1996 Aachen became the first community to include a ban on the use of PVC in cables.

c) Other Organisations
In 1994, the president of the German Wood and Plastic Processors Labour Union wrote that 'the pressing problems associated with this material must be addressed. With this objective, our organisation in Germany is committed to a medium-term transition to chlorine-free materials, such as polyolefins and PET'. (Gisbert Schlemmer, President of the Gewerkshaft Holz und Kunststoff (Wood and Plastic Processors Labour Union – GHK), 'The future of plastics production must be ecologically acceptable,' (Modern Plastics, July 1994, p 92).

Consumers

In December 1997, the German Consumers Organisation, AgV, called for a ban of soft PVC children's toys, and the German Ecological Product Control Association, OKO-TEST, published results of its own tests of 37 teething rings in which all PVC products containing phthalates were classified 'not recommendable.'

Greece

a) National Government
Late in 1998, the General Secretary of the Department of Commerce announced that the government would ban PVC toys containing phthalates for children under three years old. The imports and sale of all soft PVC toys for children under three were banned on January 15, 1999. The ban on sales is effective as of September 1999.

Italy

a) National Government
In early March 1999, the Ministry of Industry informed the European Union it was

intending to ban soft PVC toys containing phthalate additives. The ban would begin 3 months from adoption.

b) Regional, City and Community
During 1998, 37 provinces and municipal councils in Italy, including Rome, Milan and Turin, voted in favour of a motion which calls for a phase-out of the use of soft PVC in toys for children under three and for their withdrawal from the market. In Turin, they also voted on a resolution to remove all such toys from public schools under the City Hall's jurisdiction.

India

a) National Government
In September 1998, the Ministry of Environment and Forests notified the Bio-Medical Waste (Management and Handling) Rules. One of the key features of the rules is that they clearly specify a ban on incineration of chlorinated plastics in medical waste incinerators, which lead to very toxic pollutants like dioxin and furans. The toxic metals in the incineration ash shall be limited within the regulatory quantities as defined under the hazardous waste (Management and Handling) rules 1989.

International

c) Other organisations

Firefighters

The **International Association of Firefighters** made the following statement:

"Due to the intristic hazards, we support efforts to identify and use alternative building materials that do not pose as much risk as PVC to firefighters, building occupants or communities."
(Letter to the Concord, Massachusetts School Board dated April 14, 1998, signed by Richard M. Duffy, Director Dept. of Occupational Health and Safety, Washington DC.)

Youth

The **Youth Hostel Association** internationally has adopted an environmental charter which includes not using PVC (Communication with New Zealand branch of YHA, August 1994).

Doctors

The International Society of Doctors for the Environment ISDE, an international NGO representing over 30,000 medical doctors in 38 member

organisations around the globe, passed a resolution on PVC use in medical devices at its annual meeting in October 1999.

ISDE 'is concerned that the chlorinated plastic polyvinyl chloride (PVC) represents a large amount of the plastic used in the health care industry…..

Therefore ISDE:

1) Urges all health care facilities to explore ways to reduce, with the aim to eliminate, their use of PVC plastics.
2) Calls upon health care professionals to encourage health care institutions with which they are associated to adopt policies that will reduce, with the aim to eliminate, the use of PVC plastics.
3) Strongly urges medical suppliers to develop, produce, and bring to market appropriate cost competitive and safe products that can replace PVC and other chlorinated plastics.
4) Urges governments to take action that encourage the phase out of PVC in medical devices.

Nurses

The **International Council of Nurses** adopted a position in 1998 on Medical 'Waste: Role of Nurses and Nursing', in which they state:

'We support initiatives to reduce the harmful impact of mecial waste, including:

Use of the marketplace to develop alternative low-toxicity products, e.g. replacing plastics (PVC), latex and mercury.'

In 1992, the **World Health Organisation** made the following recommendation on the use of the phthalate DEHP in medical products:

' RECOMMENDATIONS FOR PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT…
b) Measures must be undertaken to reduce the release of DEHP to the environment.
c) Medical devices and products that contribute to the body burden of DEHP must be scrutinized to reduce exposure to DEHP via the intravenous route.[12],

[12] IPCS (International Programme on Chemical Safety), Environmental Health Criteria 131: Diethylhexyl Phthalate, World Health Organization. Geneva, 1992, page 100.

Japan

a) National Government

Concerns about dioxin from garbage incineration led the Japanese government to enact a new container and wrapping materials law requiring producers to recycle waste products by the year 2000. The law prompted several major Japanese makers of household goods and cosmetics, including the Shiseido Co., Kao. Corp and Lion Corp. to announce timetables by which they would switch to polypropylene and other materials for various types of cosmetic, food and pharmaceutical packaging.('Japanese Makers to Switch from PVC to Eco-Based Containers', Nikkei, Tokyo, January 14, 1998.)

A new policy was adopted by the Ministry of Construction in October 1998[13] which calls for the use of "eco-cable", or PVC-free sheathing for all construction applications involving the Ministry, government and public agencies. These agencies have been at the centre of an active trend towards the use of environmentally friendly cable in the construction sector. The change came about as the incineration of massive amounts of disposed construction waste had developed into a major source of dioxins released into the atmosphere.

Acting on requests from consumer groups and citizens, the Ministry of Posts and Communications issued a directive advising against purchasing as promotional or incentive items offered to customers any products containing endocrine disruptors. Consumers pressed the Ministry for action after being given PVC-containing products at post offices.[14].

On July 27 2001 an ordinance on "Standard on Food, Additives and related products" was amended to stop the phthalate DEHP being used in **food utensils and vessels** and to stop the use of DEHP and DINP in **toys**:

- in the production of resin baby toys intended to be put into the mouth, PVC which contains DEHP and DINP should not be used.

- in the production of resin toys, PVC which contains DEHP should not be used.

Although only two phthalates which could be used in toys are covered, the regulation covers all toys up to the age of six. The ordinance is due to be approved in September 2001, after public comment, and will be written into the legislation after it has been notified to the WTO for comment.

b) Regional, City and Community

[13] Planning Guidelines for Ecologically Conscious Government Office Facilities, October 10, 1998, The Building and Repair Department of the Ministry of Construction.
[14] Ministry Directive (Communication), June 10 1999

Introduction: Numerous resolutions encouraging the shift away from PVC have been passed by local councils and assemblies, a trend that continues as of this writing. Unfortunately, there have been few examples of this local legislation translating to policy action. However, there has been one epoch-making exception, the PVC Banishment Policy adopted by Shiga City in December 1999. While actual implementation still lies ahead, the Shiga decision stands to exert a ripple effect on other towns and municipalities throughout Japan. That said, however, the Shiga PVC-free stance is threatened by business pressure tactics, and Shiga City needs supporters to assure that the nascent effort to ban PVC is not crushed by powerful lobbying efforts.

Both Abiko City and Narasino City's assemblies (in the Chiba prefecture) have passed resolutions asking their cities to reduce the amount of PVC used, because of the burden it creates when incinerated. A similar written resolution was passed by the congress in Nakano (Tokyo).

In December 1999 the City Congress of Saga city (in Saga prefecture in Kyushu district) resolved to specify non-PVC products such as piping and wrapping.

In one of a series of measures to deal with dioxins, Shiga City announced a plan of action designed to "banish" PVC-containing products from city limits[15]. Beginning in fiscal 2000, Shiga City will, in principle, cease using PVC pipes in municipal water-supply works. It will also launch a campaign to encourage households to switch to PVC-free products for everyday use, such as plastic wraps. The Shiga Water Board currently employs PVC in 48% of the 680 km of pipe extending from the city's water main; under the newly adopted policy, Shiga seeks to switch to metallic pipe. Meanwhile, the media drive to rid Shiga City of PVC in common household products began in city publications released in February 2000.

The City of Sapporo is already using polyethylene pipe for all its water supply applications. A similar trend is expected to emerge across other regions and localities.

In response to a petition filed by the Shinjuku Ward (Tokyo) Consumers Network calling for limiting or eliminating the use of PVC products by public agencies within the district, and demanding measures to minimize the release of dioxins, the Shinjuku Ward Assembly has adopted a Sense of the Assembly resolution, stating its desire to "make every effort to honor the wishes" of the Consumers Network[16].

[15] Saga Shimbun, December 15, 1999, Mainichi Shimbun, December 18, 1999
[16] Record of the First Regular Meeting of the Ward Assembly, March 24 1999, Shinjuku Ward, Tokyo

Itabashi Ward (Tokyo) has switched to a biodegradable plastic for the cards it issues citizens as proof of registration of their seal impressions. Made of corn, soy, and other vegetable raw materials, the new seal registration ID costs approximately 20 percent more than a comparable card made of PVC[17].

The Okuyama Prefectural Assembly unanimously passed a Sense of the Assembly resolution[18] calling for promotion of alternatives to PVC and other high chlorine content plastics. The resolution, the first adopted at the prefectural level, was sent to Prime Minister Obuchi and three cabinet departments concerned with health and environmental issues. It urges "relevant ministries and agencies to work together to encourage a switch to alternative materials for products that incorporate PVC," while calling on the administration "to establish a system for processing waste plastic containing PVC, and to take prompt action to solve the problem of dioxin contamination."

Luxembourg

c) Regional, City and Community

In 1991 the Council of the capital of Luxembourg passed the technical recommendation for sewage systems. It says that no new PVC pipes will be allowed for sewage systems in the capital. It covers the public as well as the private building sector.

Mexico

a) National Government

The Health Ministry announced on November 30, 1998 that it would stop the import of soft PVC toys for small children and withdraw these products from sale.

Netherlands

a) National Government

The official policy of the Dutch Government is that 'PVC applications for which no feasible system of recycling and reuse can be established the use of more environmental sound alternative material is to be preferred.' (Directorate General for Environmental Protection, Ministry of Environment, letter 14 January 1994).

This policy was modified and can be restated as follows:

1. Encourage the recycling of PVC.
2. In order to reduce the volume of flue gas treatment residue continue, at least until 2000, to reduce the use of PVC in products which cannot be recycled, unless less polluting alternatives do not exist.

[17] Asahi Shimbun, July 14 1999
[18] Sanyou Shimbun, October 7 1999

3. Reduce the volumes of flue gas treatment residue going to landfill from incinerators using dry flue gas treatment by modifying the flue gas treatment process or the method of disposing of the residue.
4. Be circumspect in using phthalates as plasticisers for PVC.
5. Reduce the use of lead compounds as PVC stabilisers without increasing the content of tin stabilisers in virgin PVC.'

(Position paper on the Netherlands on PVC, Ministry of Housing, Spatial Planning and the Environment, 31 October 1997).

On July 16, 1997, after testing teethers, rattles and toy figurines sold for babies, the Netherlands Ministry of Health found that the Dutch advised total daily intake of DINP would be exceeded by 5- 50% for all babies sucking or chewing on PVC teethers. 'Although the phthalate concentration and migration values found do not result in an immediate danger to the health of babies, negative effects cannot be excluded. Exceeding of the total daily intake is undesirable; therefore, the ministry urges major retailers to prevent babies from being exposed to phthalates in toys.'

b) Regional, City and Community

The four biggest Dutch towns – Amsterdam, Den Haag, Rotterdam and Utrecht – have a list of construction materials in order of preference. PVC belongs to the list of materials to 'avoid' or 'last choice.'

Nordic

The Nordic Svanen (Nordic Swan) ecolabelling criteria for hotels state that PVC may not be used. The Svanen is the official Nordic ecolabel, supported by the governments of Finland, Sweden, Denmark, Iceland and Norway.

Norway

a) National Government

On December 18, 1998 the Norwegian EPA proposed a ban on the production, distribution, import and export of toys and other products aimed at children aged under three and containing phthalate plasticisers. It was due to come into force on July 1, 1999 and has now taken effect.[19]

An action plan requiring Norway's commercial sector to reduce and ultimately eliminate the use of hazardous chemicals was announced in August 1999 by the environment ministry. Removal of endocrine disrupters, mercury, cadmium, lead and chlorine-based solvents from the workplace and the environment will be the top priority, environment minister Guro Fjellanger said.[20]

b) Regional, City and Community

[19] Norwegian business told to reduce chemicals use, ENDS Daily - 02/08/99
[20] Norwegian business told to reduce chemicals use, ENDS Daily - 02/08/99

Norway's second largest city, Bergen, made a decision in 1991 to phase out PVC in public buildings.

Philippines

a) National Government

On October 24, 1997, the Philippines Department of Health issued a press statement, citing Greenpeace's findings, and called on all toy retailers and manufacturers to remove from sale 'soft PVC toys and infant care products for infants/children under 3 years of age'. The government also recommended the use of alternatives to soft PVC that do not require additives or softeners.

On June 23, 1999 the Philippine government approved the Clean Air Act, which includes a total ban on incinerators. The precedent setting law signed by President Joseph Estrada makes the Philippines the first country in the world to approve a nationwide ban on incineration, and includes measures to:

1) Ban incineration totally (incineration being defined as the burning of municipal, bio-medical and hazardous waste for disposal), exempting cremation (for carcasses and body parts only) and traditional forms of burning for agricultural purposes;

2) Within three years, phase-out the use of existing medical waste incinerators, provided that such units shall be limited to the burning of pathological and infectious wastes and subject to close by monitoring by the Department;

3) Local government units are mandated to promote. encourage and implement a comprehensive ecological waste management scheme that includes waste segregation, recycling and composting; and

4) Mandate the Department of Environment and Natural Resources to promote and encourage the use of ecologically safe NON-BURN technologies for the handling, treatment and destruction and disposal of unsorted, unrecycled, uncomposted municipal, bio-medical and hazardous wastes.

Russia

a) National Government

In March 1998 the Russian Federation agreed a State Standard for a Chlorine Free Label. It is due to come into force in July 1998. The label is voluntary and its main provisions are:

'This standard is applied to the label, which means "Totally chlorine free", and sets out form, dimensions, general requirements and rules of the label use, aimed at confirming the fact that the products correspond to the requirements of total lack in them of artificial chlorinated compounds, dioxins included; presence of the label guarantees that during the production, processing, reprocessing and

utilisation of the products the environment is not polluted by chlorinated organic compounds, and informs consumers of this.' (See 3.4).

Singapore

a) National Government
Singapore has informed the Basel Convention Secretariat that waste PVC and PVC coated cables are hazardous waste, according to national legislation, and imports are therefore banned under the Basel Convention.

Slovakia

On May 16 2001 the Parliament in Slovakia voted for a new Waste Management Act. Part of this Act is a **total PVC ban for all products, including packaging.**

The law must by signed by the President of Slovak Republic and will enter in force after its official release in Journal of Ministry of Interior (Sbierka zakonov).

Waste Management Act, May 15, 2001
Part 2, § 18, (3)
"Is banned:
……

production, import and export of PVC including all products from this material from 1.1.2008"

Spain

a) National Government
In 1995 the Spanish Parliament included a goal of 20% reduction in the use of PVC packaging in Spain over the next five years.

Instituto Nacional de Consumo

In February 1998 the National Institute of Consumption, of the Ministry of Health and Consumption, withdrew five infant teething rings from the market because they exceeded levels of phthalates permitted by the Institute.

The manufacturers and importers voluntarily withdrew four of the products, and the trademarks are:

- 'Anillo Dentición', trademark Smart Baby;
- 'Masticador', shape of a car, trademark Chavalín;
- 'Teething ring', shape of sailing boat, trademark Prenatal, Ref. 409.227
- 'Teething ring', shape of a hand, trademark Suavinex, Ref. 97032708 CN 303834

The teething ring named ‘Fruta para morder refrescante’, trademark The First Years, model refrigerated apple, was withdrawn by the inspection services.

b) Regional, City and Community

In November of 1996 the parliament in Andalucia approved a resolution on PVC which includes several measures, including a phase-out in the use of PVC in health care institutions.

Resolution of the Parliament of Catalunya:

On May 1996 the Parliament approved a non law proposition to phase out PVC in food packaging with the aim of its total elimination. The text approved by the territory’s political commission on May 28, 1997 states:

‘The Parliament of Catalunya urges the Generalitat Government to, starting from their proper competence on industry, commerce and food matters, forbid the manufacture and use of PVC, in any type of packaging for food’.

b (ii) PVC-free cities

62 Spanish cities have been declared PVC free cities, 43 were declared during 1997 and the beginning of 1998 (See 4.5). The ‘standard’ measures approved are:

1. To subscribe to the decision of the Spanish Senate of 19-12-95, which asked for a state regulation on PVC.
2. To ask the regional and central government to consider the risks for public health of the consumption of food packed in PVC, as well as the risks from its production and disposal, and therefore, in order to regulate its uses.
3. That the municipality, or its entities, will not buy or use mineral water or other drinks or food packed in PVC, in any of their activities. In first instance glass bottles are recommended followed by PET or other alternative plastics that don’t harm public health.
4. To recommend to all its citizens not to buy food products packed in PVC, due to the risk it may cause to humans and other living organisms.
5. To elaborate a municipal strategy that will allow in the medium term the substitution of PVC construction materials with other alternatives such as wood, in new installations, constructions, renovations, etc., carried out or funded by the municipality, with the objective that the city of...will become PVC-FREE.
6. To communicate this agreement to all institutions, and departments affected by it.

In addition to these measures, the following agreements are notable:

Barcelona

This city of approximately 2,000,000 inhabitants, was declared in May 1997 ‘free of chlorine products’ and established measures to phase out these products, among them PVC plastic, in favour of cleaner alternative materials. Within 6 months the City Council will present an evaluation of the uses of PVC and other chlorine products in all their activities, buildings and services with municipal involvement, and a plan for its substitution. (See 4.6).

Bilbao

In December 1997, the Bilbao City Council, a municipality of 400.000 inhabitants, approved a motion in which they ‘omit the use PVC toys in all infants departments of their responsibility, to prevent children being exposed to toxic products’ and urged the Government of the Vasque country to request the voluntary withdrawal of these products from the market. (See 4.6).
Lloret de Mar

This city council approved in January 1998 a motion on ‘the withdrawal of PVC infants toys in the Municipal day nursery’. (See 4.6).

In November 1997, this same city council, approved a ‘Basis for the concession of grants in the introduction of renewable energy and the substitution of PVC’. Among other measures they adopted a reduction of 10% in the cost of building site licences to promoters that avoid using PVC in the construction of houses. The concession of these grants will be limited by the established economic endowments in the municipal budgets.

Madrid – Juvenile Ombudsman

In March 1998, the Juvenile Ombudsman (Defensor del Menor) of the Autonomous Community of Madrid, Javier Urra, expressed to Greenpeace his concern on the subject of soft PVC toys, and will do all within his power to safeguard children’s health.

c) Other organisations

Consumers Organisations

CECU

In September 1997, the Confederación de Consumidores y Usuarios (CECU) – Consumer and User Confederation – asked the Ministry of Health to establish mandatory labelling of the materials used for the manufacturing of the product, in the interests of consumer protection.

The CECU also recommends the elimination, when possible, of the consumption of PVC infant products, and that the toys purchased before their withdrawal from the market should be returned to the store, asking for a refund.

FUCI

In February 1998 the Federación de Usuarios-Consumidores Independientes (FUCI) – Independent Users-Consumers Federation – joined the Greenpeace campaign alerting consumers about the risks derived from PVC toys.

'...from FUCI we demand a legislation that clarifies the actual situation of products with the mentioned substance, as well as an information campaign promoted by our own Ministry so as to alert and inform consumers of the risks of using these products'.

'Furthermore, the FUCI demands a comparison and modernisation of the consumer protection legislation in accordance with the unification situation of the European legislation and to protect the Spanish consumer at the same level they're protected in other European countries such as Denmark or Austria'.

The FUCI also demands that retailers should withdraw these products until the situation is clarified.

Parents Organisation – CEAPA

In October 1997 the Confederación Española de Asociaciones de Padres y Madres de Alumnos (CEAPA) – the Spanish Confederation of Associations of Students Fathers and Mothers – sent a letter to the Minister of Education in which they ask the Ministry of Education to withdraw soft PVC toys from all infant educational centres so as to preserve children's health.

Sweden

a) National Government

There is a relatively long history of proposed restrictions on PVC in Sweden.

In 1994, the 'Ecocycle Committee', a group appointed by the government, recommended a phase out of 'todays' soft PVC, as well as rigid PVC containing hazardous additives'. They also said in their recommendation that, 'PVC has no future.'

Public awareness of the problems with PVC is good in Sweden. Concerns about hormone effects from exposure to additives in PVC has triggered the Swedish government to institute a voluntary industry policy to ban all production of PVC, Anna Lindh, Sweden's environment and natural resources minister told BNA in

1996. (‘Government Concern About Hormone Effects Spurs Policy Seeking Ban on PVC Production’ BNA International Reporter, May 15, 1996).

In November 1995, the Swedish Parliament voted to phase out both soft and rigid PVC speedily, following a recommendation from the Committee for Agriculture, which stated:

‘The Committee’s opinion is that it is possible to make an overall assessment of today’s PVC in all its parts from chlorine manufacture to waste. It is the Committee’s opinion that such an overall assessment shows that PVC cannot be part of an eco-cycle society. Today’s plasticised PVC, as well as rigid PVC with environmentally harmful additives, should therefore be phased out. The phase out should begin speedily.’ (Swedish Parliamentary Standing Committee on Agriculture, 1995)

The decision by the Parliament led to the following comment by Anna Lindh, Swedish Minister for the Environment:

‘The question is not whether to phase-out PVC, but how PVC should be phased out’. November 1995

Over the years, the government has postponed its own recommendations on PVC, by ordering several additional studies, which have been carried out by both the Swedish EPA and KemI. Both authorities have been negative to a general PVC phase out, but are anxious to phase out certain additives.

In June of 1996 the government appointed a chemical committee to draw up a proposal for future chemical policy in Sweden as it relates to the European Union. One sub-group within the committee looked at policies concerning PVC. The Chemical Committee concluded that PVC ‘does not belong in an eco-cyclic society’ and recommended that the government immediately initiate negotiations with interested parties and take other measures to phase out all new uses of PVC.

On 28 April 1999, the Swedish Government adopted a new Environment Bill as a response to the Chemical Committee’s report.

The new Bill incorporates the goals set by the North Sea and Visibly Declarations, to eliminate the discharge and leakage of hazardous substances into the Baltic and North Seas by the year 2020.

The new Swedish chemical policy is based on the concept that inherent properties of a chemical substance – such as its bioaccumulative capacity and stability – will be determining factors for deciding whether it can be released on the market. In addition, chemical substances will be treated in groups.

Annex 1 of the Bill (Further guidelines for a chemicals policy), states that the following guidelines should be applied:

"*New products introduced onto the market are largely

-Free from man-made organic substances that are persistent and bioaccumulative, and from substances that give rise to such substances and

- free from man-made substances that are carcinogenic, teratogenic and endocrine disruptive - including those which have adverse effects on the reproductive system"

"*Man-made organic substances that are persistent and bioaccumulative, occur in production processes only if the producer can show that health and the environment will not be harmed…"

In addition, the specific measures against certain hazardous substances are included. The following relate to chlorine production and PVC:

Lead … all use of lead in PVC products should cease before the year 2002. The cessation should be achieved by voluntary measures from industry.

Mercury … It's the opinion of the government that the use of mercury within the chlorine alkali industry must stop before the year 2010.

For short-chained chloroparaffins, the government says that all remaining use of these should be phased out by the year 2000, and add that also all use of chloroparaffins as flame retardant or softener in PVC should cease by that time.' (Voluntary measures)

Phthalates, etc. … It is the governments opinion that 'all use of phthalates and other softeners with hazardous or suspected hazardous effects on health or environment should be phased out by voluntary measure.'

More specifically, the government suggests that all use of DEHP (and other softeners, etc.) in PVC for outdoor use such as tarpaulins, covered metals and corrosion preventers for cars should be phased out by 2001.

Other uses of DEHP as softeners in PVC - except for medical uses - should be phased out by 2005. A ban on phthalate softeners in PVC toys for children under three years old was initiated in September 19, 1998. The proposal also includes a provision to prohibit other chemical additives from replacing phthalates. The ban is expected to come into force in mid 1999.

Tin: The use of tin stabilisers in PVC should be reduced by voluntary measures by producers and importers. The use of the most hazardous tin stabilisers should

be phased out quickly. The government will order KemI to develop a phase out plan for the most hazardous tin stabilisers.

"When it comes to reducing the environmental load from PVC, the government concludes that Sweden is a small market from an international perspective, and on that basis it would be difficult to introduce national demands on products that are made of PVC. Also, it can be stated, that the Swedish industry has shown that it is possible, without extraordinary costs, to in certain product groups replace hazardous additives in PVC, and in other product groups to replace PVC with other materials. It is important that producers and importers continue to work for a reduction of the environmental load from PVC, develop better PVC and substitute the use of PVC in applications/uses where PVC can be suspected to cause negative effects on health or environment. The government will follow this development closely, and is prepared to impose additional measures, e.g. bans, if a reduced environmental load from PVC is not achieved on a voluntary basis in compliance with the stated goals."

PVC markets crash in Sweden. A draft report from the Chemical Inspectorate in Sweden (KemI) released 23rd October 2000, shows that the use of PVC plastic is falling dramatically. The report has been drafted by KemI to follow up on the political decisions to phase out the use of hazardous additives in PVC and to substitute PVC with other materials. The two main conclusions in the report are that hazardous additives are being phased out of PVC and that the known use of PVC has fallen dramatically. According to figures in the report the use of PVC in Sweden has fallen by as much as 39 percent between 1994 and 1999, from 74,730 tons to 45,690 tons per year.

b) Regional, City and Community

In the beginning of August 1999, Greenpeace sent out a questionnaire to all the municipalities in Sweden. In the questionnaire Greenpeace requested answers to four questions. In short, these questions were: 1) are you positive towards PVC?; 2) Does the community have any restrictions on PVC?; 3) When were these restrictions implemented; and 4) do you plan to soften these restrictions?

The answers from the municipalities are available in a table which is updated continuously, and can be accessed in English on the website: www.greenpeace.se/norway/english/9camp/5toxic/PVC/94kompvc.htm.

Summary of results (updated November 23, 1999):

Number of replies (of total 289 municipalities): 198
Number of municipalities positive to PVC: 0
Number of municipalities neutral to PVC: 23
Number of municipalities negative to PVC: 167
Not comprehensive replies: 8

c) Other Organisations

Hospitals

The ‘Landstingsfoerbundet,’ which runs the hospitals, has a policy which ‘agree(s) with the Ecocycle Committee’s opinion that the use of today’s soft PVC should be phased out. That should also be the case regarding the stabilizers the committee points out as hazardous’. In a shopping guide for hospital products produced together with ‘Kommunfoerbundet’ (the umbrella organisation of all Swedish communities) they advise against the purchase of chlorinated plastics.

Also, the state-owned company responsible for all sales of pharmaceutical products in Sweden ‘Apoteksbolaget’, has a clear anti-PVC stand.

Unions

The TCO (Swedish Confederation of Professional Employees) have developed ecological criteria for certifying electronic office products. The TCO label is widely recognised in the Nordic Countries and Germany.

The TCO99 criteria for computers and printers specifies: ‘plastics containing halogenated polymers, e.g. PVC, are not accepted in plastic components of any size’. In addition, other hazardous substances such as mercury, cadmium and lead are covered, and halogenated flame retardants are not accepted (in plastic components weighing more than 25 grams).

The TCO publishes a list of certified products (mostly computer display screens) at: http://www.tcodevelopment.com

Switzerland

a) National Government

In 1990 the Swiss government banned the use of PVC in mineral water bottles. However, in June 1999, the Swiss environment ministry announced plans to lift the ban, as part of a proposal to amend Switzerland's drinks container waste law. The government stresses, however, that an end to prohibition of PVC bottles is intended to placate the European Commission and the PVC industry rather than lead to an increase of the plastic's use in Switzerland. A 1985 voluntary agreement with drinks manufacturers remains in force and continues to require them to reduce the use of PVC. In addition, the government plans to introduce what one official called a "prohibitive" deposit on PVC bottles, which would encourage their return to sales outlets rather than disposal.[21]

b) Regional, City and Community

[21] ENDS Daily - 04/06/99

The Swiss state of Basel and the City of Basel itself have published guidelines for environmentally-friendly materials which list PVC as environmentally harmful and propose alternatives.

Tunisia

On July 18th 2000, the Tunisian General Director of Internal Trade (Trade Ministry) signed a ban on the importation, selling and distribution of all PVC toys and childcare articles intended for children under the age of three and which contain more than 0.1% of one of the six mentioned categories of phthalates (DINP, DEHP, DNOP, DIDP, BBP, DBP).

UK

a) National

The Department of Environment Transport and the Regions recently published a document called Greening Government on its website:
http://www.environment.detr.gov.uk/greening/greenpro/greenpro.htm.
It is intended as a guide to buyers and suppliers and basically advises against the use of PVC and organochlorines in general. 'Toxic organochlorines include CFC's (which destroy the ozone layer), pesticides, dioxins, chlorine bleach (used in paper manufacture) and PVC plastics. They are often bio-accumulative and persistent in the environment. Alternatives to bleaching include oxygen bleaching and using UV light. Alternatives to PVC include ethylene based plastics'.

b) Regional, City and Community

In July 1998, Newhaven Town Council became the first British local authority to adopt a PVC free policy, which includes avoiding PVC in all purchases, and in refurbishing or constructing public buildings, except where an alternative cannot be found at a reasonable cost. The Council also aims to encourage other Local Authorities and agencies to implement PVC restrictions. (See 3.7).

The following local authorities have policies not to fit PVC windows: Carlisle City Council Gateshead Metropolitan Borough Council, Eden District Council, Redcar and Cleveland Council, Derwentside District Council, Teignbridge District Council, Castle Morpeth Borough Council, St Edmundsbury Borough Council. Leicester City Council recommends departments not to buy or specify PVC.

The following Housing Associations have policies not to fit PVC windows: The Gwalia Housing Society will not specify PVC window or doors, Family Housing Association (Birmingham) LTD, Liverpool Housing Action Trust, The Home Group (Newcastle upon Tyne), Perthshire Housing Association LTD, Gloucestershire Housing Association LTD, Cadarn Housing Group LTD (Barry, Wales), Elderpark Housing Association LTD (Glasgow), Waltham Forest Housing

Action Trust, Broomleigh Housing Association (Beckenham), Cds Housing Association (Liverpool), Langstane Housing Association LTD (Aberdeen).

c) Other Organisations

Unions

Fire Brigades Union. '..the FBU is now particularly concerned about the safety of PVC based building materials, that are used in the construction and fitting out of buildings, when involved in fire …the FBU welcomes the work done by Greenpeace to create a directory of alternative building materials which are PVC-free and we would recommend to you to make use of their report (Building the Future, Greenpeace UK) when planning new buildings or the refurbishment of existing ones.' (Ken Cameron, General Secretary, Fire Brigades Union, open letter, September 20, 1996).

USA

a) National Government

In June, 1996, the U.S. Consumer Product Safety Commission issued a warning to consumers to avoid PVC mini-blinds which contained lead additives. A number of retailers, such as Home Depot, responded by immediately removing the lead-containing vinyl mini-blinds from their shelves. Day care centres, state health officials and others grew alarmed by information that the PVC industry had not provided about its own products.

On December 2, 1998, the Consumer Product Safety Commission (CPSC) announced a voluntary withdrawal on the manufacture of teething toys containing phthalates (made of soft PVC) and requested retailers withdraw these products from their shelves.

b) Regional, City and Community

The Municipal Council of the **City of Rahway, New Jersey** prohibits the use of PVC or polystyrene by retail food vendors located within the city, and requires them to use degradable packaging (Ordinance No: 0-53-96 providing uniform packaging requirements for retail food establishments, Office of the City Clerk, Rahway, New Jersey)

The **City of Lake-in-the-Hills, Illinois**, banned the use of CPVC pipe for construction in March 1996, citing problems with using pipe-thawing equipment for non-metal piping, worker exposure to glues and solvents during installation, and other issues. (Dave Selleck, Building Commissioner, memo to President & Board of Trustees, Lake-in-the-Hills, Illinois, March 25, 1996). In **Kansas, the state Department of Health and Environment** found vinyl chloride monomer leaching out of PVC pipes installed to carry drinking water 20 years earlier. Other

studies have shown VCM and organotin migration from PVC pipe into water. (‘Kansas VCM Contamination’, David Eckstein, Unibell PVC Pipe Association, memo 1993). A report from Graz, Austria has outlined the main disadvantages of PVC after 30 years of use. The report concluded that the number of PVC pipework defects was rising and that repair costs were substantially higher for PVC than for other materials. The cost of installing PVC was not lower than other materials such as ductile steel. (Weinbauer, K.P., ‘Analysis of Supply Lines Construction Costs,’ report commissioned by the City Authorities, Graz, Austria, June 1992).

On August 20, 1998 the **Washington State Department of Ecology** announced its long-awaited report on dioxin sources, and along with it, issued a "call to action" to the state of Washington to commit to a strategy 'to virtually and permanently eliminate all releases of toxic, persistent and bioaccumulative chemicals into the state's environment (land, air and water) by 2025.'

February 2, 1998 - **Oakland's City Council** unanimously passed a resolution entitled, "Establishing a Regional Task Force and Policy on Dioxin, Public Health, and the Environment." which included resolutions that it 'promotes less-toxic, non-chlorinated, sustainable alternative products and processes, such as chlorine-free paper and PVC-free plastics, to the extent possible' and that it 'urges Oakland health care institutions to reduce PVC use and eventually become PVC-free'.

March 22, 1999 - the **San Francisco** Board of Supervisors voted unanimously to adopt the resolution, "Establishing Dioxin Pollution as a High Priority for Immediate Action for the City and County of San Francisco in order to restore Water, Air, and Total Environment Quality". San Francisco becomes the first county in the country to pass a resolution whose intent is the elimination of dioxin wherever possible.

Other Bay Area city governments that have now passed similar resolutions are **Oakland** and **Berkeley**.

In addition, on December 14 1999, the **Marin County** Board of Supervisors passed a Resolution (No. 99-168) to encourage elimination of dioxin emissions, including commitments to:

- promote less-toxic, non-chlorinated, sustainable alternative products and processes, such as chlorine-free paper and PVC-free plastics, to the extent possible.
- urge Marin health care institutions to reduce PVC use and eventually become PVC-free, and will send a letter to Marin-based health care institutions to encourage them to phase out the use of PVC products without sacrificing patient care or worker safety.

The **Rhode Island** Dept of Environmental Management recently adopted a regulation (reg. 39) that will regulate medical waste incinerator emissions much more stringently than the federal MACT rule. The plan must include 'measures and milestones toward reaching the goal ….. of reducing polyvinyl chloride materials in the waste stream by 50% by 2003.'

New Hampshire's adoption of a far-reaching strategy to slash dioxin emissions was announced on March 14, 2001[22]. Several of the recommendations in the N.H. dioxin reduction strategy directly address dioxin-forming PVC (vinyl) plastic, including:

- a ban on backyard burning of PVC by November 2001,
- labelling of all PVC products by January 2002,
- expansion of the packaging laws to include PVC packaging,
- the virtual elimination of all PVC-containing products from the medical waste stream by January 1, 2005,
- draft legislation by November 1, 2001 (with an effective date of July 1, 2005) to prohibit the disposal of **PVC-containing products and materials** in medical waste incinerators.

c) Other Organisations

Hospitals and health care

The **American Public Health Association (APHA),** the nation's largest association of public health professionals passed Resolution 9304 in 1994 calling for an industrial chlorine phase-out.(American Public Health Association, 1994. Resolution 9304: Recognizing and addressing the environmental and occupational health problems posed by chlorinated organic chemicals. American Journal of Public Health 84(3): 514-515.)

'The only feasible and prudent approach to eliminating the release and discharge of chlorinated organic chemicals and consequent exposures is to avoid the use of chlorine and its compounds in manufacturing processes.'

In 1996, the APHA followed up on its previous commitment with resolution # 9607, 'Prevention of Dioxin Generation from PVC Plastic Use by Health Care Facilities' which urged health care professionals to adopt policies leading toward the eventual elimination of the use of PVC plastic products.(American Public Health Association, 1996. Resolution # 9607.)

The APHA is not alone in the position it takes. More than 50 groups — unions, community organisations, environmental groups, physicians, and health care institutions - are participating in the **Health Care Without Harm Campaign.** One

[22] New Hampshire Department of Environmental Services, The New Hampshire Dioxin Reduction Strategy, February 2001.

of the goals of the campaign is ‘to phase out the use of PVC and persistent toxic chemicals, and to build momentum for a broader PVC phase out campaign’. (Health Care Without Harm, mission statement. To contact the campaign call: (703) 237-2249.).

In June 1998 the **Council of the Chicago Medical Society** passed a resolution on PVC (see 3.8). The CMS is the largest county medical society in the country representing between 7 and 8,000 of the approximately 11,000 practising physicians in Cook County, Illinois. The following are extracts from the resolution:

‘WHEREAS, highly effective programs for the reduction of hospital waste have been initiated in the U.S. and programs for the substitution of PVC are in place in some hospitals in Europe, therefore be it

RESOLVED, that the CMS encourage the study and evaluation of alternative products and practices that will lead to the reduction and elimination of dioxin release into the environment from medical products composed of chlorinated hydrocarbons;’

The **Minnesota Medical Association** House of Delegates passed a strong resolution in support of PVC substitution at its annual meeting in October 1998, which says: 'that the Minnesota Medical Association acknowledge the role that polyvinyl chloride (PVC) plays in the production of dioxins, acknowledge the environmental and physical threats associated with dioxins, acknowledge the need to reduce the use of PVC products, and support efforts to address dioxin as a pollutant through strategies including, but not limited to, material substitution of PVC products."

The **California Medical Association** House of Delegates passed a resolution in February 1998 to 'encourage the study and evaluation of alternative products and practices that will lead to the reduction and elimination of dioxin release into the environment from medical products composed of chlorinated hydrocarbons;'

The 1997 **American Nurses Association** House of Delegates produced a report on the Reduction of Health Care Production of Toxic Pollution which recommends promoting 'alternatives to products made of PVC'.

The **American Medical Women's Association** (AMWA), an organisation of 10,000 woman physicians and medical students, passed a resolution at their national meeting in 1999, which states: ”…Be it resolved that AMWA encourage the study and evaluation of alternative products and practices that will lead to the reduction and elimination of dioxin release into the environment from medical products composed of chlorinated hydrocarbons; …Be it further resolved that AMWA advocate the elimination of non-essential incineration of medical waste and promote safe materials use and treatment practices…”

In March 2001 the member hospitals of the **Maine Hospital Association** agreed to continuously reduce the use and disposal of PVC plastic in hospitals. The highest priority is placed on reducing PVC use in disposable healthcare products and office products. Longer term replacement of PVC in durable medical products, construction materials and furniture is to be considered when opportunities present themselves[23].

[23] Maine Hospital Association, Pollution Prevention Agreement, March 5, 2001

2. Market

2.1 Summary of Market Initiatives

An increasing number of companies are phasing out the use of PVC and chlorinated substances, in response to consumer demand, Greenpeace campaigns and pressure of regulations (in particular on the recyclability of materials, and stringent emission standards for incinerators). In many cases companies have also switched to alternative materials for functional reasons.

The trend began in the early 1990's in Scandinavia and the German speaking countries. Furniture retailer **IKEA** and toy manufacturer **LEGO** were among the first companies to initiate a phase out, and are now virtually PVC free. At the same time supermarkets in these countries began to phase out PVC in packaging, for example **Migros** in Switzerland and **Tengelmann** in Germany; supermarkets in countries like Austria and Germany are now virtually PVC-free for packaging.

The rejection of the use of PVC in packaging spread to France and Spain, with a major proportion of water bottling companies switching from the use of PVC to PET, including market leaders **Nestlé** (owner of brand names **Perrier, Vittel** and others) and **Evian.**

In parallel, with increasing numbers of local authorities going PVC free, many new buildings were built with minimal use of PVC (for example avoiding PVC windows, doors, pipes, floorings, and cabling). The highest profile of these projects is the **Sydney 2000 Olympics**, which has avoided the use of PVC wherever possible, as well as incorporating many other environmental objectives such as the use of renewable energy.

Following the launch in 1997 of Greenpeace's 'Play Safe' campaign about the dangers of soft PVC toys, a large number of Toy companies are now phasing out the use of PVC, for example Italian market leader **Chicco,** Japans largest toy producer **Bandai, Playmobil** of Germany and **Ravensburger** of the Netherlands. Most recently, in December 1999 the world's largest toy company **Mattel Inc.** announced that it will be introducing products made from organically derived materials as early as 2001, which will replace PVC products. A larger numbers of retailers have withdrawn these soft PVC toys from their shelves. In Australia, Olympics sponsors **McDonald's Australia** have phased out soft PVC toys in their 'Happy Meals'.

The move to phase out PVC is now expanding into other sectors, and other regions of the world, notably in the USA and Japan. Shoe and sports equipment manufacturers **Nike** announced in 1998 that they had begun a phase out. Telecommunications companies **German Telekom** and **Nippon Telegraph and**

Telephone of Japan are also going PVC free. The world's largest auto manufacturer, **General Motors** (GM), announced its decision to eliminate PVC from its auto interiors in September 1999, and leading electronics manufacturer **Sony** is committed to a phase out of PVC by 2002.

Most recently Greenpeace has targeted the use of soft PVC in IV bags by the medical sector. **Baxter International Inc.** one of the world's largest medical supplies manufacturers is committed to exploring and developing alternatives to PVC and to substituting IV bags.

This report compiles the available information on commitments to phase out PVC by companies. It is organised by industrial sector. There is also a country by country index in Section 3.

2.2 Listings of Companies Phasing-out PVC and Chlorine

Car manufacturers

Europe

Ford of Europe stated in a letter to Greenpeace UK[24]:

"We recognise the potential hazard of PVC and any use of it in our products would have to be reported, and where appropriate authorised, by our Toxicology Department… As regards PVC, Ford world-wide has set itself and its suppliers the ambitious target to eliminate applications of PVC by the 2006 model year, where technically and economically feasible. Candidate materials for the replacement of PVC include thermoplastic olefins...".

France

Peugeot is reducing its use of PVC in both interior and exteriors, due to weight and to prevent recycling problems[25].

Germany

Daimler Benz has already phased out the use of PVC in underbody coating and in the interior of all cars produced since summer 1995 [26] and expects to phase out all PVC uses within five years [27].

Opel (GM's European subsidiary) does not use PVC anymore in car interiors [28].

Volkswagen AG sent a letter to Greenpeace Germany which states[29]:

"Volkswagen takes the discussion about PVC seriously and is intensively working to reduce PVC in cars. As such, both alternative materials and new design solutions are being tested, using ecological and economic criteria."

BMW's materials specifications give preference to materials other than PVC for dashboards, trim and wire coating, as 'automobile recycling rules in parts of

[24] Letter from Luisa Ragher, Governmental Affairs Manager, Ford of Europe to Greenpeace UK, 22nd February 2000 .
[25] Letter from Peugot, June 23 1997.
[26] Daimler Benz, 1997
[27] Letter to Greenpeace Germany, 30 May 1997.
[28] personal communication, 1997.
[29] Letter from Stobbe & Pundt, VW to Brigitte Behrens, Greenpeace Germany, November 30, 1999.

Europe favour other polymers over PVC, in spite of BMW's recognition of PVC's price-performance qualities [30]. BMW offers PVC-free dashboards[31].

Mercedes Benz does not use PVC in car interiors[32].

Japan

In a letter to Greenpeace Japan[33], the **Daihatsu Motor Company** state that they have 'established a PVC Reduction Policy, which is being vigorously implemented.' Specifically 'we have been working to eliminate PVC from instrument panel padding, while switching to olefin-based surface material for our roof linings. Likewise, we have been promoting a shift from PVC to olefin resins in side molding. Other recent examples of the effort to cut back on PVC use include a switch to olefin-based rubber for the side window linings and the soundproofing (silencer) component of dashboards. For door trim surfaces, we moved to fabric and other substitutes. In the medium term, we are looking to achieve PVC reduction in side window W/S, roof fabric, floor undercoating and wire harness coating.'

Daihatsu have also substituted other halogenated materials: 'we have been reducing the use of halogen materials for some time. For example, we have already completely eliminated tri-chloroethane and fluoron effervescent (foaming) agents from our products. In the future, we will be working to decrease halogen-containing flame retardants.

Hino Motors, Ltd. state that they are presently looking for PVC alternatives that fit these truck and bus applications (interior, exterior, and the wiring systems)….; our corporate policy calls for switching to these substitutes wherever they are available. Consequently, we believe that Hino stands to both decrease the use of PVC and facilitate greater recycling in the future[34].

In response to a letter from Greenpeace Japan, **Honda** have stated that they will gradually replace PVC with polyolefins in interiors, by the year 2003. In addition they have reduced and banned the use of halogenated flame retardants[35].

Mitsubishi Motors[36] 'is committed to cutting back on PVC, in recognition that incinerating these plastics causes the release of toxins.' PVC has been

[30] Chemical Week, Jaunary 18 1995
[31] letter from BMW, May 27 1997
[32] letter from Daimler Benz, May 30 1997.
[33] Letter to Greenpeace Japan, Nov 10 2000, from Daihatsu, Public Relations Department
[34] Letter to Greenpeace Japan, Nov. 10 2000, from Koichi Suenaga,Product Development Division, Hino Motors, Ltd.
[35] Letter to Greenpeace Japan, Nov.5.1999 from Tsutomu Okuno (Mr.), Corporate Communication Division of Honda.

substituted with polyolefins in instrument panels and door trim surfaces. Substitution is in progress in other applications such as roof linings and sheet materials. Mitsubishi are also 'in the process of a gradual shift to non-halogen materials. (The switch-over is already complete for the fire retardants used in some of the parts we produce.)'

Nissan announced in 1997 that they have developed an alternative for PVC cables that they will start using in their cars starting in Autumn 1997[37]. In a letter to Greenpeace Japan[38] they state: 'We are studying PVC reduction. However, given the criteria that alternative materials have to satisfy, such as suitability for mass-production applications, we find that PVC-alternative technologies are not completely developed as yet. Therefore, we have not established numerical targets for PVC reduction. Nevertheless, we are making efforts to reduce PVC. The following are past examples of cases where we have switched from PVC to olefins (instrument panel, door trim, side guard moulding and harness).

The **Suzuki Motor Corporation** states[39]: 'In selecting materials for use in automobile parts, we believe that in addition to ensuring safety, reliability and durability suitable to the characteristics of the product to be manufactured, due consideration must also be given the environmental impact of the material in question. Thus, we are moving forward with plans to introduce suitable alternatives to PVC.' Suzuki have also substituted halogenated flame retardants: 'as for halogen material, we formerly used halogen as a fire retardant in sheet surfaces, but we have since adopted alternative fire retardants that employ other available materials.'

Toyota has developed an alternative plastic known as 'Toyota Super Olefin Polymer (TSOH)' for use in car interiors and as bumpers, but will still use PVC for some uses because of cost[40]. Their 1999 policy states: In respect to measures being taken to reduce PVC use, in accordance with company policy, Toyota is developing technology for substitute materials offering performance equal or superior to that obtained with PVC, and phasing these substitutes into vehicle production. In a more recent letter to Greenpeace Japan[41] they say that they have significantly reduced the amount of PVC used in the new model Celcio;

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[36] Letter to Greenpeace Japan, Nov. 15 2000, from Mitsubishi Motors, Public Relations Department, (Saibara, Head of Media Relations)

[37] Nissan Motor Co Ltd, Press Release, March 24, 1997.

[38] November 10, 1999, letter from Yukiharu Emura, Manager, Public Relations Department
Nissan Motor Co., Ltd.

[39] Letter to Greenpeace Japan from Koichiro Takagi, Operations Planning Department, Public Relations Group, Suzuki Motor Corporation, 10 November 2000

[40] Toyota Focus Management Letter, 1997

[41] Letter to Greenpeace Japan, November 21, 2000, Fumitake Kojima, Section Chief, Environmental Division

‘(the) amount of PVC used in instrument panels, the surfaces of interior parts such as silencers and door trims, and the soundproofing undercoat has been cut by two-thirds compared to previous models.’

USA

The world's largest auto manufacturer, **General Motors**, announced its decision to eliminate polyvinyl chloride (vinyl) plastic from its auto interiors in September 1999. General Motors said moving away from polyvinyl chloride (PVC) will enable improvements in durability (the carmaker found that PVC cracks, warps, and fades too quickly). Other issues include windows fogging from the leaching of PVC plasticisers, and PVC's weight disadvantage compared with other materials[42]. General Motors is the first car company to make a public announcement of its intention to stop using vinyl in auto interiors, although other automakers have quietly been moving away from vinyl for several years.

The **Ford Motor Co.** has written to suppliers challenging them to design vehicles that include more recycled-content plastic. In addition, the carmaker will tell suppliers to use thermoplastic olefins where possible because they are comparatively easy to recycle. "What we're telling them is, where they can eliminate PVC, they should do so,” said William Orr, manager of Ford's worldwide recycling planning[43]. Ford world-wide has set itself and its suppliers the ambitious target to eliminate applications of PVC by the 2006 model year. Technical as well as economical considerations will nevertheless have to be taken into account[44].

The **DaimlerChrysler Corporation** stated in a letter to Greenpeace USA[45] that ‘while we have not established an outright ban on PVC containing materials, we explore alternative materials for non-recyclable PVC applications’.

A new feature on the 2000 **Pontiac** Bonneville is a soft polyolefin skin for full instrument panel design, instead of PVC; this is the first time in North America that this material has been used in this way[46].

U.S. auto suppliers

The auto supplier **Haartz Corp**. of Acton, Massachusetts is taking its first steps to move into olefinic interior panels stating that European legislation is expected

[42] Plastics News, September 20, 1999, Page 1, GM banishing PVC in auto interior panels
[43] Ford demanding more recycled content, by Joseph Pryweiler, Plastics News, November 29, 1999
[44] Correspondence with Greenpeace from Luisa Ragher, Manager Governmental Affairs, Ford, 6/7/2000.
[45] Letter to Rick Hind, Greenpeace USA from James A Carlson, Director of Pollution Prevention and Remediation, DaimlerChrysler, October 12 1999.
[46] Society of Plastic Engineers, PR Newswire, 7 January 2000

to change that could affect recycling laws in the USA dramatically. Their Sales Director is quoted as saying, "the switch to olefins could happen very quickly." [47].

Delphi Interior Systems a unit of Delphi Automotive, Michigan, the largest independent auto-parts producer worldwide, is providing potentially the first thermoplastic olefin skin on a North American-built vehicle[48].

Lear Corp, Michigan, is looking into new technology using expanded polypropylene bead foam. The molded foam can make an entire, energy-absorbing instrument panel, integrating skin, substrate and reinforcing beam. 'U.S.-based automakers are challenging the industry to come up with new instrument panel materials that shy away from PVC', said Tom Ottman, manager of Lear's instrument panels[49].

Battery manufacturers

After secondary lead smelters in the USA identified PVC separators used in lead acid batteries as a chlorine-donor for dioxins formed in the smelters, battery manufacturers drastically reduced their use of PVC in batteries, causing EPA to drop new proposed dioxin emission standards. In this way, the deselection of PVC by product manufacturers allowed the recycling industry to avoid the expense of additional pollution control equipment and reduced the bureaucratic burden of developing and enforcing dioxin emissions standards[50].

Construction industry

Japan

As from the year 2000, **Anabuki Corp.** will gradually switch to PVC-free materials in the decorative sheets for interior doors in its built-for-sale condominiums. Anabuki is also researching PVC-free vinyl cloth for walls and ceilings, as well as non-PVC bathroom unit and entranceway construction[51].

Sweden

In May 1996, two of Sweden's leading construction companies, JM and Svenska Bostder, announced that they are phasing out their use of PVC. Other major Swedish construction companies, NCC, SIAB and Skanka plan to follow. SIAB's

[47] March 22, 1999 Plastics News.
[48] Plastics News, March 8, 1999.
[49] Plastics News, March 8, 1999
[50] Versar, Inc., 'Formation and Sources of Dioxin-Like Compounds: A Background issue Paper,' prepared for Matthew Lorber, U.S. EPA National Center for Environmental Assessment, November 7, 1996.
[51] Kenetsu Tsushin Shimbun, December 13 1999, and Nikkan Kogyo Shimbun, December 29 1999.

environmental director Eva Mensson said 'I don't think anyone in the construction business today believes there is a future for PVC.' [52]

UK

The **Peabody Trust**, which is the largest charitable housing trust in London, has banned the use of unplasticised polyvinyl chloride (uPVC) windows from its estate buildings[53]. Dickon Robinson, Peabody's Director of Development and Technical Services said: 'Manufacturing uPVC is an extremely energy intensive process, requiring the use of toxic chemicals and eight tonnes of crude oil for every tonne of uPVC produced. The lifespan of uPVC windows is not as long as originally anticipated and they are impossible to repair. Even slight damage requires the replacement of the whole unit.'

Construction projects

See also the Greenpeace UK report 'Building the Future' for examples of PVC free buildings.

Austria

The SMZ Ost Hospital in Vienna is almost entirely PVC free, and other hospitals in Austria are following SMZ-Ost's example.

The new governmental centre for the province of Lower Austria in St. Poelten was built without PVC wherever possible, following Lower Austria's decision to phase out PVC in February 1993.

Australia - Olympics 2000

The Australian Stadium 2000 Consortium which won the competition to design, construct and build Sydney's Olympic 110,000 seat stadium included a number of environmental features in their proposal, including a commitment to minimise the use of PVC. In particular the Consortium is committed to using alternatives to PVC in plumbing, drainage and flooring materials for the project. The Environmental Guidelines for the Sydney 2000 Olympics further explain that 'Sydney is committed to minimising and ideally avoiding the use of chlorine-based products such as PCBs, PVC and chlorine bleached paper.' For more information see Greenpeace Australia's Olympic updates.

The builders of the Olympic Athlete's Village have managed to reduce PVC use by 80% compared to a regular housing development. Much of the remaining 20% which remains is a result of Government and Health regulations which only

[52] Dagens Nyheter, May 21 1996.
[53] Building Design June 29, 2001, Pg. 6, Peabody scraps uPVC for timber

specify PVC for use. If not for these outdated regulations, virtually all of the PVC in the Village could have been eliminated.

The Olympic Co-ordination Authority (OCA) have recently issued their first official review of ESD initiatives of the Games venues[54] – which provides some examples where PVC use has been minimised or avoided.

Some examples taken from the document include:

(a) Hotel: PVC has been eliminated from:
- all electrical services, light, power cabling, including sub-mains
- general communications and computer cabling
- wet area flooring
- hydraulic services (cold and hot water systems, reclaimed water reticulation, in-ground sanitary drainage and in-ground stormwater drainage)

(b) Multi-Use Arena
- PVC will not be used in plumbing stacks and downpipes
- PVC will not be used in seating, floor and wall finishes

(c) Showground
- Polyethylene (14 kilometres) has been used for main trunk services
- Above ground pipework is copper except for fire services which will be galvanised steel in the Grandstand
- Teflon glass coating has been used in fabric shade structures in lieu of PVC

(d) Stadium
- PVC will not be used in plumbing and seating
- Where possible the PVC content in cabling has been reduced
- Teflon coated glass fibre for the main arch shading membrane is being used in lieu of PVC

(e) Shooting Centre
- Polyethylene will be used in plumbing and drainage

Unfortunately, not all companies involved in the construction of the Olympic Village were willing to avoid PVC. In particular, Telstra, the Australian national telecommunications company, refused to switch from PVC conduits despite the availability of viable non-PVC alternatives. To the company's credit, efforts were made to significantly reduce the amount of PVC conduits used in Olympic Village phone and data lines.

In addition, official Olympic sponsor Westpac Bank produced its first set of Olympic mascot toys with PVC despite the Olympic Environmental Guidelines commitment to reduce or eliminate PVC. After consulting Greenpeace, toys were packaged with warning labels stating that the mascots were not suitable for

[54] 'Compendium of ESD Initiatives and Outcomes for OCA Facilities and Venues, 1st Edition, Olympic Co-ordination Authority, 1998.

children under three who would be most likely to put the toys in their mouths. Greenpeace studies have shown that PVC plastic toys contain phthalates that can leach out and be ingested when chewed. Westpac did, however, agree to greatly reduce the number of mascot toys produced and are in dialogue with Greenpeace over a possible switch to PVC alternatives.

Olympic coins: The official coin program for the 2000 Olympics (up to 26 million coins) will be housed in PVC-free plastic containers. Originally the plans were for a German-made PVC plastic card surrounding the bronze and alumium coins, but with the assistance of Greenpeace, the mints have found a cheaper and non-toxic Australian made plastic.

Denmark

The Society of Danish Engineers are building their new headquarters in Copenhagen entirely free of PVC. It is expected ready by August 1998. Interested architects can contact Society of Danish Engineers, Karl Aage Hagelund, email: kah@ida.dk, phone +45 33156565.

Germany

In Berlin, the Museum of Jewish Culture the Transport museum and over 130 other buildings have been built with restrictions on the use of PVC.

Japan

The Japanese Ministry of Construction has been calling on government ministries and agencies as well as municipalities to adopt eco-cable as part of the effort to incorporate easy-to-recycle, lead- and dioxin-contamination-free "eco-materials" in public sector construction. .At several Government offices and official residences under construction, such as the facility at Onami in Tokushima Prefecture, PVC free eco-cable has been incorporated throughout the structure, from the start of the project.

In the private sector, the Obayashi Corp. Research Center in the City of Tokorozawa (Saitama Prefecture), as well as the Daiwa House Headquarters Building in Osaka, and the firm's Tokyo Office in Idabashi (both of which Daiwa House developed jointly with Sumitomo Electric Industries) are examples of new facilities under construction using eco-cable wiring wall-to-wall[55].

Netherlands

'Designed in conjunction with William McDonough & Partners, **Nike's** new European headquarters in Hilversum, the Netherlands implements many

[55] Shinken Housing, January 30 1999

ecologically intelligent (TM) design features. For example Nike has implemented a 'no PVC' regime. All suppliers and subcontractors have been asked to ensure that they do not provide Nike with or use PVC materials or products in connection with the construction and fitting of the site. All piping for the electricity, sewage, grey water and heat systems is PVC free. All data cabling and the majority of electric cabling are PVC free.'[56]

Norway

The Krohnengen school and many other buildings in Bergen, Norway have been built avoiding the use of PVC since a 1991 decision to phase out PVC in public buildings.

Spain

The guidelines for the City of Seville's application for the 2004 Olympics include a materials policy which states: 'Therefore products derived from chlorine or other toxic materials must not be used. Specifically, we must avoid the use of PVC in construction, infrastructure, accessories and any other complements in Olympics facilities.' Construction of the Olympic stadium, villa and others will begin as they will anyway become a football stadium and student residence.

United Kingdom

Construction Resources Centre: Southwark London – PVC free, except some minor parts.
The Reserve Centre at Redgrave and Lopham Fen,
Earth Centre: Doncaster, PVC free (Architect Andy Theobald, partner Fielden Clegg Design)
Hockerton Nottinghamshire – 5 domestic houses built without PVC cables or pipes. (Architects Robert and Brenda Vale)

The new **Tate Gallery of Modern Art** has minimised the use of PVC. (Alternatives have been used for all piping (rainwater, soil and waste) roofing materials and electrical cables. PVC remains only in sleeving for some underground pipes).

A key feature of the **Environment Agency's** new Lower Trent area office in Nottingham is a reduced use of PVC.

USA

[56] statement to Greenpeace Business, July 10 1998.

Some commercial buildings (like the World Trade Center in New York), US Navy vessels and Newfoundland offshore drilling applications have chosen to replace PVC jacketed power cable.[57]

In Washington, the **Environmental Protection Agency's** new headquarters will be mostly vinyl-free. The project, to be completed in 2002, will cover 2.5 million square feet in five new buildings and parts of two others. The architectural and interior design firm Gruzen Sampton opted for wood furniture, linoleum flooring, marble chip shelving and polypropylene upholstery. The building's carpeting, however, will have PVC backing.

The materials used in place of PVC are 30-50 per cent. more expensive, but they offer increased performance in most cases. In addition, prices for alternative materials have been decreasing in recent years as they grow in use and acceptance.[58]

Cosmetics, detergents and household goods manufacturers

Germany

Several cosmetics producers, like **Wella**, no longer use PVC packaging.

Japan/Global

Proctor & Gamble: In a statement to Greenpeace Japan (1998), they said 'P&G's world wide position is to use PVC only when there are no technically feasible or economically affordable materials. P&G in Japan also follows the Company's global position and now only very limited packages use PVC. Consistent with our global position, Japan P&G is working to eliminate the use of PVC in packages, hopefully by 2000, as we believe we will soon have alternatives for our specific uses.'

Japan

Shiseido, the largest cosmetics producer in Japan and among the top three in the world, formulated on January 12. 1998 an environmental report that, among other topics, includes the halting of the use of polyvinyl chloride as a packaging material by the year 2000.[59]

Other manufacturers of household commodities are migrating away from PVC in containers and packaging, switching in increasing numbers to PVC-free

[57] CHEMinfo Services Inc. 'A Technical and Socio-Economic Comparison of Options to Products Derived from the Chlor-alkali Industry' Final Report, prepared for Environment Canada, November 1997.
[58] Plastics News, 19 November 1998, Experts battle over PVC as building material.
[59] COMLINE Daily News Chemicals and Materials, January 19, 1998.

materials. In April 1998, **Proctor and Gamble** announced a policy which will eliminate PVC in hair care product packaging by the end of 1999. **Kobayashi Pharmaceutical** is beginning the shift to alternative packaging materials with this fall's line of new oral hygiene products, and will completely eliminate PVC by March 2000. At **Kao Corp**., where PVC-free shampoo bottles, product labels and other containers and packaging were first adopted more than ten years ago, relatively few items remain which contain PVC. **Lion**, too, began phasing out PVC in 1991, with plans calling for total elimination in the year 2000. Meanwhile, **Nihon Lever** has already completed the conversion to alternative container and packaging materials for its entire product line.[60]

UK

The **Body Shop** has phased out PVC in their products, packaging and in their buildings, internationally.

Neals Yard Remedies (Cosmetics company) in the UK is phasing out PVC bottles in favour of PET. In their mail order catalogue they state:

'...you may have noticed that our plastic bottles have changed slightly. This is because we are in the process of switching from using PVC to PET. The reason for this change is that PET is the plastic with the best recycling infrastructure in place. PET is in great demand for conversion into polyester for textile manufacture. There is also evidence that PET is much cleaner than PVC when incinerated into waste at power plants.'

USA

Cosmetics company **Helene Curtis Inc.** Illinois, replaced its PVC bottles with PET for packaging Suave during the course of 1994.[61]

Den-Mat Corporation, CA, the manufacturers of Rembrandt Mouth Refreshing Rinse plan to switch to a PET bottle.[62]

Bristol-Myers Products, NJ, distributors of the SEA BREEZE Astringent is switching from PVC to recyclable PET. [63]

Greenseal, the USA household cleaner manufacturers, has a comprehensive policy which includes the following commitment on PVC: 'After January 1, 1995, products shall not be packaged in primary or secondary packaging containing polyvinyl chloride.'[64].

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[60] Nikkan Kogyo Shimbun, September 4, 1998
[61] Letter, February 4 1994, Denise Stewart, Consumer Representative).
[62] Letter, February 25 1994.
[63] Letter, February 17 1994, Carla Navallo, Regulatory and Product Investiation Specialist.
[64] Household Cleaners (GS-08) First Edition, November 2, 1993 Copyright 1993 Green Seal, Inc.

Simple Green, a U.S. manufacturer of cleansers has decided to switch from PVC to PETE. "We had originally bottled in PVC plastic because the products required a durable plastic to guarantee that they would not leak, which is particularly a concern for our reusable spray bottles. Fortunately, PETE is now able to provide us with a comparable alternative that will prevent leaking and ensures that our spray bottles can still be reused over and over again."[65]

Henry Thayer Co., a small cosmetics company has decided to go PVC-free. In a phone message to the USA NGO, Mothers & Others, the company president stated that "We just changed our bottles from PVC to PETE and we're planning on doing that with our witch hazel as well... Our goal is 100% out of PVC by the end of 1999… I think your cause is worthwhile, we're 100% behind you."

Credit Cards, Tickets and Related Products

Japan

Toppan Printing Co. will stop using vinyl-chloride plastic as the basic material for credit cards by the year 2000 because it emits toxic dioxin gas when incinerated at low temperatures. Toppan has developed a new material for cards which it claims is as sturdy as vinyl chloride plastic, with a degree of flexibility that also makes it ideal for smart cards.[66]

Overseas travel operator **NBC** has developed a corn-based biodegradable passport card, to be released in October 1998. NBC sells two million of its current PVC passport cards annually, but switched to biodegradable materials in response to heightened environmental awareness among consumers. The travel firm is also developing tags from the same material, which it plans to release simultaneously with the passport cards.[67]

As a countermeasure to the dioxin problem, **JR East Japan** will eliminate vinyl chloride-containing adhesives in passenger tickets issued for use at automated ticket gates in fiscal 1999. Of the 1,000 tons of passenger ticket cards JR East Japan produces annually, nearly 60% incorporate PVC-based adhesives. Although the tickets are recycled into toilet paper post-use, the railroad enterprise made the move away from PVC because the magnetic strip portions of the cards are eventually incinerated. The cost of PVC adhesive-free ticket cards is relatively higher, but the decision by JR East Japan is nevertheless bound to draw the attention of private rail competitors contemplating environmental measures of their own.[68]

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[65] Letter to Allison Sloan of Mothers & Others, from Milt Krause of Simple Green, April 1999.
[66] Oct 08, 1998 (Asia Pulse via COMTEX)
[67] Nikkei Sangyo Shimbun, August 18, 1998.
[68] Asahi Shimbun, August 19, 1998

Sanwa Bank has decided to stop using PVC in its cash cards, and instead began changing over to polyethylene terephthalate glycol-based cards at the beginning of November 1999. Sanwa is the first of the major city banks to adopt alternative PVC-free materials for its cash cards. With the banking industry incinerating several million used cards every year, the movement toward non-PVC materials is broadening in scope.[69]

From the beginning of 1999, new types of charms and talismans will begin appearing at **Shinto shrines** throughout Japan (Izumo Daisha; Sumiyoshi Daisha; Ikeda Jinja), offered as “eco-friendly” good fortune. While the new amulets of polyolefin may be somewhat less transparent and somewhat more expensive than their conventional counterparts wrapped in PVC sheeting, shrine authorities, recognizing that pyre ceremonies to dispose of the previous year’s charms and talismans are a prime generator of dioxin, have recommended adoption of the polyolefin artefacts as “symbols befitting the 21st century”.[70]

USA

In a letter to card manufacturers, **Visa International**, San Francisco, CA, has endorsed the use of PETG for its credit cards. Visa has recommended that "in countries where [member banks] require card products produced with a more environmentally friendly material, glycol-modified PET be substituted for PVC."[71]

Do-it-Yourself (DIY) retailers

The German company **OBI**, a branch of the big Tengelmann company (which also has many food supermarkets) took a decision August 1998 to phase out PVC. A paper called the "OBI environment agenda" sets out the general goal of "ecological construction - healthy living" and a transition to "cleaner" products.

OBI's goal for PVC is a total phase out by 2005 for all products (such as pipes, window frames, floorings, cables, and garden hoses).

Electrical appliances

Germany

AEG Electronics and Appliances is phasing out PVC. In Austria they produce only totally PVC-free items such as vacuum cleaners, ovens, washing machines etc.. AEG also sells all types of totally PVC-free electrical cables.

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[69] Mainichi Shimbun, November 4 1999, Nikkei Sangyo Shimbun, November 5 1999.
[70] Asahi Shimbun, November 16, 1998.
[71] Modern Plastics, April 1999 VISA INTERNATIONAL APPROVES PETG FOR USE IN CREDIT CARDS

Vorwerk, a leading German manufacturer of vacuums, electrical equipment and fitted kitchens, states 'Vorwerk manufactures all products from materials that have been produced in an environmentally sound manner, materials that can be almost entirely recycled. Therefore we avoid the use of PVC to a large degree.'[72]

Japan

Matsushita Electric announced the development of wiring for home appliances free of PVC and other halogen compounds. Matsushita will begin introducing the wiring into its visual data devices in the fall, and intends to offer an eco-wired version of each major product in the year 2000. The decision effects items produced at every Matsushita Electric division. Company officials, relating that non-halogen wiring is "twice as expensive as wire with PVC," now face the task of lowering cost in order to increase the number of products that incorporate halogen-free wiring. Home appliance manufacturers anticipate that the Matsushita Electric announcement will have a ripple effect throughout the industry.[73] Matsushita has already embarked on a campaign to reduce the number of plastics used in its products in order to make them more recyclable. The varieties used have fallen from 400 a decade ago to less than 40 now.[74]

Sharp Co. Ltd. one of the biggest home appliance manufactures in Japan announced they will get out of PVC in 1998. Sharp will eliminate PVC parts in new audio equipment, home appliances and data devices in fiscal 1999, and plans to stop using bromine fire retardants in all component parts in fiscal 2001. Both objectives were established in Sharp's recently adopted Green Product Guidelines for environmentally conscious product development.[75]

Sweden

The world's leading appliance manufacturer **Electrolux** was 'the first company to launch PVC free products in 1997 and a full range in 1998… The reasons behind the development are to improve the value of recycled materials and to respond to the demand from customers.

On regular products PVC is mainly used in door gaskets, electrical wires, tapes and labels. The development work to find replacements started around 1992. Still, most of the PVC free parts have a premium cost.

In 1998, a full range of products was launched on the Scandinavian market with refrigerators and cookers. Electrolux will increase the range as the market demand for PVC free products increases.' [76]

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[72] Vorwerk brochure
[73] Nikkan Kogyo Shimbun, June 12,13 and 16 1999.
[74] Daily News Electronics, December 2, 1998
[75] Kagaku Kogyo Nippo, April 26 1999.
[76] Henrick Sundstrom, Electrolux, presentation to Greenpeace Business Conference, London September 7 1998

Electronics Industry

Europe

Sony Europe, on of the world's biggest users of packaging, has adopted an internal packaging policy. The goal is to eliminate all uses of plastic in packaging and to achieve 100 per cent. recycling or return of packaging. When using plastic, PVC will be replaced by PE, PET, or PS.

Japan

Sony's medium term environmental action plan (available on their website - http://www.world.sony.com/CorporateInfo/EnvironmentalReport/architecture/) commits to a phase out of PVC by 2002, as follows:

"Specific Requirements [for product development]:

PVC Reduction:

2000: No PVC in all products made in Japan, 50% out in PVC used in wiring

2002: No PVC in models made outside Japan

In addition they have committed to the elimination of halogen flame retardants and to the use of lead-free solder.

Sony is also the first corporation in the electronics industry to develop a halogen insulation-free glass epoxy multi-layer circuit board for actual commercial use. Sony will begin incorporating the new circuit board into its product line at the end of 1998. Halogen-free paper phenol single-layer circuit boards are already in commercial use, but the Sony board is the first multi-layer PCB without halogen to be included in products on the market. Sony is also switching to non-chlorinated pigment material in its printed circuit board surfaces[77].

Toshiba aims to make all printed circuit boards for personal computers halogen-free by 2000. By incorporating an alternative, halogen-free flame retardant developed by Toshiba Chemical, the electronics giant can produce eco-friendly multi-layer circuit boards and build-up substrates offering virtually the same level of reliability as previous Toshiba products[78].

Electronics - office equipment manufacturers and suppliers

[77] Kagaku Kogyo Nippo, September 10 1998.
[78] Kagaku Kogyo Nippo, December 9 1998.

Austria

Bene (Austria's largest office supplier)
Herlitz (Austrian office equipment company)

Japan

Ricoh Co., Japan's leading comprehensive maker of OA equipment, is aiming to cease using PVC-covered electric wire by 2000. In its place, polyolefin resin-covered wire will be adopted, The objective is to reduce use of lead, which is incorporated in PVC resin as a stabiliser.[79]

Electronics - battery manufacturers

All of Japan's major household battery manufacturers have announced that they will stop using PVC in their dry cell battery packaging**. Matsushita Battery Industrial** has already ended all use of PVC packaging. **Toshiba Battery** will completely eliminate vinyl packages in 1999, with **Hitachi Maxell** to follow by the year 2000. Similar policies doing away with PVC packaging for dry cell batteries have also been adopted by **Sanyo Electric** and **Fuji Electric Chemical**. Batteries are marketed in transparent shrink-pack wrapping, either alone or in combination with paperboard in blister packs. Whereas until recently PVC has been employed in both packaging methods, the manufacturers will now shift to polyethylene or PET shrink-packing.[80]

Financial Services

Japan

In rapid succession, five of the 12 financial institutions located in Saga Prefecture have ended the practice of presenting their customers with edible gifts packaged in PVC plastic wrap. Of the seven still using PVC, four reported plans to reconsider the practice[81].

UK

Bradford & Bingley Building Society (United Kingdom), state that their policy is: 'Based on the precautionary principle the society will:

- Source substitute materials whenever available which are considered to be less damaging to the environment, equal or better from a quality or functionality viewpoint and stand reasonable life cycle cost comparisons.
- Advise suppliers of a preference for non-PVC packaging
- Specify low smoke and fume (SLF) cable insulation in preference to PVC

[79] COMLINE Daily News Electronics May 6, 1998.
[80] Nikkan Kogyo Shhimbun, August 14, 1998
[81] Saga Shimbun, August 12 1999.

- In major purchases, where PVC forms part of the product the methodology of rejection of alternatives will be recorded by the Society manager responsible for the purchase.'[82]

The **Jupiter Ecology Fund** has adopted a two-pronged and precautionary policy to address the problem (of PVC):

- 'The Fund will continue to avoid investment in companies which are directly involved in the manufacture of PVC'
- 'The Fund will actively encourage companies continuing to use PVC to minimise their consumption. The ultimate objective of this is to achieve a total phase-out when full acceptable substitutes become available.'[83].

Food Packaging & Water Bottling

Austria

In Austria PVC food packaging is basically non-existent (food producers had to change due to the united action of all major supermarket chains in Austria in the early 90's).

Brazil

In May 1999 **Cargill** launched a new PET container onto the Brazilian market. Cargill will bottle its Liza soybean oil brand into PET containers as of next June. The new bottle will replace the PVC one, while tin cans will continue being used as normal. Cargill will invest a total of USD 6 million to launch its PET containers onto the Brazilian market.[84]

Denmark/Italy

Carlsberg Italia, a unit of the Danish brewer Carlsberg, was the first on the Italian beer market to introduce the Hyge-cap (its aim is to protect the mouth of the can from dust and other contaminants). Though originally made of PVC, as soon as a PET-version became available in the spring of 1999 Carlsberg Italia decided to change to PET, because it is a more environment-friendly material.[85]

Europe

The following European bottled water companies have phased out the use of PVC: **Spa** (Belgium) phased it out in 1993; **Evian** in 1994; and the market leader

[82] Letter from Bradford and Bingley Building Society, January 1997.
[83] Jupiter Ecology Fund Newsletter, Winter 1996.
[84] Gazeta Mercantil Page: B-24 Date: May 24, 1999
[85] Correspondence with Greenpeace Denmark, 16 August 1999, from Henrik Mølstrøm, Press Officer, Carlsberg (and Tuborg)

in France, Nestlé (owner of brand names **Perrier, Vittel, Hegar, Vitteloise,** and **Contrex**) announced in January 1995 they would upgrade their water bottling plants. Bottles represented 100,000 mt/year and 12 per cent. of the total French PVC market.[86]

Japan

Nihon Suisan Kaisha is switching from vinylidine chloride to nylon and polypropylene for the film in which it packages its sausages (the casing removed from the sausage before consumption). The company was due to begin shipping the vinylidine chloride-free product in October 1998.[87]

Suntory Ltd. announced that with its new liquor and wine products, it will switch from conventional PVC to PET cap seals, the transparent plastic portion of the bottle cap that fixes the cap airtight to the bottle. Plans call for phasing in the PET cap seals beginning in December 1998.[88]

Kagome Co. completed its conversion to PVC-free alternative food containers for all household products in fiscal 1998. Certain industrial size (20-30 litre capacity) containers which still incorporate chlorinated materials will be withdrawn from the market in fiscal 1999.[89]

Spain

The Spanish branch of mineral water of the multinational **Danone** – called **Fonvella** and which controls 35% of the mineral water market in Spain – is phasing out PVC. **Perrier** is doing the same.

Following a campaign by Greenpeace Spain, 36 following water bottling companies have replaced the use of PVC for PET, as of April 2000, as follows:

TRADEMARK	**COMPANY**
1. AGUA CMD	Piloña Acqua Mundo, S.A.
2. AGUA CONTINENTE	Piloña Acqua Mundo, S.A.
3. AGUA DE LA PALMA	Aguas de la Palma, S.A.
4. AGUA DE MIJAS	Agua de Sierra Mijas, S.A.
5. AGUA DE QUESS	Piloña Acqua Mundo, S.A.
6. AGUA DE VERI	Aguas de San Martín de Veri-Basauri, S.A.
7. AGUA DEL MONTSENY	Aguas del Montseny, S.A.
8. AGUA PRYCA	Piloña Acqua Mundo, S.A.
9. AGUA SUPER	Piloña Acqua Mundo, S.A.
10. AGUAS DE ALMEDIJAR	Aguas de Almedijar, S.A.

[86] Chemical Week, January 18 1995.
[87] Asahi Shimbun, August 30 1998.
[88] Nihon Keizai Shimbun, November 22 1998.
[89] Nikkei Sangyo Shimbun, August 25 1998.

11. AGUAS DE ALZOLA	Balenzategui, S.A.
12. AGUAS DE TOSCAL	Aguas de Toscal, S.A.
13. AIGUA DE RIBES	Fontaga, S.A.
14. BELASCOAIN	Aguas de Belascoaín, S.A. (AGUABEL)
15. BEZOYA	Leche Pascual, S.A.
16. CABREIROA	Aguas de Cabreiroa, S.A.
17. CARDÓ	Leche Pascual, S.A.
18. CARRIZAL	Zerep Carbónica y Aguas, S.A.
19. CORCONTE	Agua de Corconte, S.A.
20. EROSKI	EROSKI
21. FONTDOR	S.A. Vichy Catalán (GRUPO)
22. FONTECELTA	Fontecelta, S.A.
23. FONTEMILLA	Fuentes de Cutamilla, S.A.
24. FONTVELLA	Fontvella, S.A.
25. FUENSANTA	Aguas de Fuensanta, S.A.
26. LUNARES	Alimentos y Bebidas, S.A.
27. MONDARIZ	Grupo Vichy Catalán
28. MONTEPINOS	Carbónicas Navalpotro, S.A.
29. PALLARS	Manantials d'Aigua del Pallars, S.L.
30. PEÑACLARA	**Eycam Perrier**
31. SANCHÍS	Aguas de Sierra Sanchís, S.A.
32. SIERRA DE JAÉN	Sierra de Jaén, S.A.
33. SOLARES	Manantial de Fuencaliente, S.A.
34. SOUSAS	Agua de Sousas, S.A.
35. VALTORRE	Agua de Valtorre, S.A.
36. VILADRAU	Eycam-Perrier, S.A.

USA

Federated Group has changed the container used to package its Better Value Non-Dairy Creamer and Parade Non-Dairy Creamer. In a letter to Greenpeace Federated stated, "Our company has been closely working with its' suppliers the last few years to move our products into packaging that is environmentally friendly. Two different manufacturers package our Creamers. One of our suppliers has completed a conversion to PET. Our second supplier has plans to convert during 1999. By the end of 1999 all of our creamer packaging will have converted to PET containers."[90].

Eagle Family Foods Inc. 'expect to introduce these products (CREMORA Brand Non Dairy Creamers) in PET packaging.' [91]

Dean Foods Co. Chicago, aims to replace PVC with glycol modified PET for labels on its Milk Chug polyethylene bottles.[92]

[90] Letter, December 18, 1998, Alan J Dell'Aringa.
[91] letter to Greenpeace, 4 May 1999
[92] Plastics News 11/30/98.

VegiWash, a USA company, headquartered in Oregon, have eliminated PVC packaging (bottles) for their product (fruit and vegetable wash). They now use HDPE.[93]

Other US companies that have eliminated PVC in their packaging include: **Simple Green** (cleaners**), Deodorant Stones of America** (DSA), **Beauty Without Cruelty** (personal care products**), Freeman Botanicals** (personal care products), **Planters Co.** (peanut oil), **Breath O' Pine** (cleaners), **Mistolin** (cleaners), **Value King Pine Cleaner**, **Pine-Sol** (cleaners), **Salma Spices**, **NOW** (personal care products), and **Borden Cremora Non-Dairy Creamers**.

Interior furnishings manufacturers

Austria

EWE Kuechen, a big Austrian kitchen furniture manufacturer, advertises their furniture as PVC free.

Japan

Housing equipment and furnishings company **INAX** announced that it would eliminate the use of PVC in nearly all of its products, including door panels and sliding glass doors, as well as the packing materials that stabilise the items in transport. INAX thus becomes the first firm in the industry in Japan to do away with PVC in the majority of its products. However, it will continue using certain PVC-containing furnishings, such as drain hoses and power cords.[94]

Sweden

The following are committed to phasing out PVC:

Eco AB, Borastapeter (Swedish wallpaper companies)
Kinnarps AB (Swedish furniture manufacturer)

Mail Order Catalogues

Germany

The German mail order company **Otto** is phasing out PVC.

USA

[93] Letter to Greenpeace International, February 2000.
[94] Nikkan Kogyo Shimbun, November 25 1999

US company **Norm Thompson Outfitters, Inc**. , which also includes **Solutions** and **Early Winters** 'has committed to a five-year phase-out of PVC because of its significant environmental and health impacts throughout its manufacture, use and disposal life cycle. Because of known health risks associated with phthalates and other additives, we will prioritize our implementation on products that relate to food ingestion (i.e. cookware) and usage by and around children (ie. toys and clothing).' The policy was adopted in November 2000.

Medical products

Denmark

Grenaa Central hospital have phased out/substituted 95 per cent. of their PVC usage. Head of section, Tommy Willis, Tel: +45 89 585614 can be contacted for more information, or see PVC free database on homepage www. aaa.dk/pvc (in Danish) for PVC-free articles in hospitals , packaging, office supplies etc.

Germany

The German medical products companies **Braun-Melsungen** and **Fresenius** are aware of the discussion regarding PVC and have eliminated PVC packaging of their products and have a pretty good labelling system of their products in place. They also offer several products (incl. complicated ones like dialysis sets (consists of bag, tubing etc.)) labelled as 'PVC free'.

Japan

On 1 October, 1999 **Terumo** started manufacturing its dialysing fluid bags from polypropylene instead of polyvinyl chloride. It converted to polypropylene for the 3000ml and 5000ml bags and plans to switch the rest of its production to polypropylene within one year. The company is the first domestic manufacturer of dialysing fluid bags to take this step. Terumo has developed a new polypropylene material for CAPD (continuous ambulatory peritoneal dialysis) which rectifies the shortcomings of previously available products.[95]

USA

McGaw Inc., which supplies PVC-free IV bags has increased its market share in the past years as a result of the concerns over dioxin and the leaching of phthalates from PVC medical supplies during their use.[96]

Baxter International Inc, one of the world's largest medical supplies manufacturers, has made the following commitment:

[95] Asahi Shimbun, October 10 1998.
[96] McGaw, Inc. Company brochures and communications with Greenpeace.

“Baxter is committed to exploring and developing alternatives to PVC products and is developing and implementing proposed timetables for substituting its current containers for intravenous solutions (IV) with a container that does not contain PVC. Baxter will acknowledge and discuss this at its 1999 Annual Meeting of Stockholders to be held on May 4, 1999.

In the future, Baxter will update the shareholders on the steps to be taken towards replacing its global line of PVC-containing products other than IV containers with non-PVC alternatives.”[97]

Kaiser Permanente, the largest non-profit Health Maintenance Organization in the USA, has made the following statement:

“Recently, Kaiser Permanente established a new latex-safe, national standard for exam gloves, eliminating 43 million PVC (vinyl) gloves annually from use and disposal, creating a safer health care setting and eliminating pollution from the environment. Kaiser Permanente has also encouraged key suppliers of products containing PVC to develop alternatives.

Last month, Baxter International, Kaiser Permanente's supplier of intravenous (IV) solution bags, announced that it was developing and implementing substitutions for its current product that do not contain PVC. "As we learned with mercury instruments, some of the weapons we use to fight disease can also be weapons that compromise a healthy environment," said Dr. Lawrence.[98]

Universal Health Services, the USA’s third largest hospital management company, announced at its annual shareholder's meeting in May 1999 that it will seek to replace PVC medical supplies with cost effective alternatives. UHS acknowledges that "polyvinyl chloride (PVC) plastic, a component in various medical products, may result in damage to the environment." UHS plans to investigate the amount of PVC it is currently using and formally ask its suppliers to develop non-PVC alternatives.[99]

Tenet Healthcare Corporation, the USA’s second-largest for-profit health care company, announced on October 6, 1999 that it will seek to buy and use supplies that are not made from polyvinyl chloride (PVC) plastic.[100] Acknowledging that the use of PVC "may result in damage to the environment," Tenet announced that it will "develop a purchasing policy that gives preference to the use of disposable medical products free from PVC and phthalates (plasticizers used to make PVC flexible) in Tenet hospitals, providing they are of the same or better

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[97] Extracted from a Memorandum of Understanding, dated March 5, 1999, between Baxter International Inc. ("Baxter") and the Retirement Plans for the Employees of the Sisters of Mercy Regional Community of Detroit, the Sisters of Charity of Cincinnati and the Service Employees International Union (the shareholders).
[98] Excerpt from a Kaiser Permanente Internal Press Document, May 13, 1999.
[99] News Release, Health Care Without Harm, 19 May 1999.
[100] BOSTON, Oct 6, 1999 /PRNewswire via COMTEX.

functionality as those they would replace and are readily and reliably available at reasonable prices."

Tenet operates more than 120 hospitals in 18 states around the country. BuyPower, a group purchasing operation (GPO) owned and operated by Tenet, is also subject to this agreement.

Pharmaceuticals

Germany

The pharmaceutical company Bayer changed their packaging material from PVC to PP in 1991, as they claim PP is a better moisture barrier than PVC.

Japan

Japan's largest pharmaceutical corporation, **Takeda Chemical Industries**, will shift from PVC resin in push-through-packaging (PTP) for its pills, capsules and other mass-marketed pharmaceuticals, instead adopting polypropylene for these PTP applications beginning in the year 2000. In addition to over-the-counter products, Takeda plans to introduce PVC-free materials in PTP for its new prescription drugs and other therapeutic pharmaceuticals.[101]

Sweden

The **Association of the Swedish Pharmaceutical Industry** and the **Association of Representatives of Foreign Pharmaceutical Industry** 'supports a phase out of PVC in the long term. For pharmaceuticals such a phase out can only happen when the medical safety aspects allow a change to other materials.' [102]

Publishers using totally chlorine-free paper

Barnes and Noble Classics Series
Cornell University Press
Harvard University Press
Harcourt Brace children's books
IKEA home furnishings catalogues
Kinkos Inc., the copying chain, offers chlorine free paper
Massachusetts Institute of Technology Press
Simon and Schuster for a book about Ben and Jerry
World Watch, magazine of the Worldwatch Institute[103]

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[101] Nihon Keizai Shimbun, December 7 1999.
[102] letter to Agricultural Committee of the Swedish Parliament, 19 March 1993).
[103] Sources, The Chlorine Free Products Association, Lyons Falls Pulp and Paper Company, June 1997.

Retailers/Supermarkets

Austria

In Austria all the major supermarket chains phased out the use of PVC in the early 90s, including **SPAR**, **BILLA**, **ADEG**, **LOeWA**, and **MEINL**.

Denmark

In Denmark the supermarket chain **IRMA** is demanding that their suppliers (approx. 520) supply them with PVC-free packaging, as from October 1996. IRMA has aimed to phase out PVC packaging for the last ten years. In addition **FDB**, (food retailer) as a whole is working to follow the example of IRMA.[104]

The drugstore **Matas** is phasing out PVC.

Hennes & Mauritz, a large clothes retailer in the Nordic and other European countries have a policy not to allow chlorinated organic compounds in their products which means that PVC textile-print is not allowed, with some minor exceptions. They also do not allow PVC in toys and in packaging. Chlorine bleaching is not allowed.[105]

Germany

All German supermarkets began phasing out PVC in the early 1990s (for example Tengelmann).

Metro AG, Germany's largest retailer and third biggest in Europe, has adopted a policy of not using plastics in its packaging. If there are no alternatives to plastics, it uses only polyethylene, polypropylene and polyethylene terephthalate. It has also told its suppliers that adhesives and paints must not contain solvents or heavy metals[106].

Japan

In Japan, chain retailers, including supermarkets and convenience stores, are eliminating the use of vinyl chloride wrapping and are taking other steps to reduce the impact of their operations on the environment. **Ito-Yokado Co.,** a major supermarket operator, planned to switch wrappings for perishables and pre-cooked foods to polyolefin from vinyl chloride by the end of June 1998. Most convenience store chains, including **am/pm Japan Co., Lawson Inc**. and

[104] Berlingske Tidende, September 21 1996.
[105] H & M Hennes & Mauritz AB and H & M Rowells AB Chemical Restrictions, June 1996.
[106] Chemical Market Reporter - 02-Apr-01, Retail Chains Ban Potentially Risky Consumer Items, By Sean Milmo

Seven-Eleven Japan Co., had eliminated the use of vinyl chloride wrapping by the end of April 1998.[107]

The Nikkei Ryutsu Shimbun surveyed major supermarket chains to gauge the trend toward replacing PVC-containing wrap with alternative wrapping for their in-store packaging. **Itoyokado**, **Seiyu,** and **Mycal** reported that the switch has already been completed, while at **Jasco**, the conversion will be finished by the end of September 1999. **Daiei** plans to replace conventional PVC at all of its stores within the fiscal year. **Maruetsu** is aiming to accomplish the same task by February 2000. Meanwhile, **Nagasakiya** is pilot testing alternatives to PVC wraps at three of its stores, with plans to switch next autumn.[108] 95 per cent. of the **Consumers Co-operative** stores were vinyl chloride free as of March 1999.[109]

By mid-1999, the supermarket giant **Mycal** will have switched from PVC to polyethylene wrap for packaging perishables and to-go meals it sells in-store. In addition, Mycal will shift to PVC-free packaging for all new products it develops and markets, and for its promotional materials, before the end of fiscal 2000. A new PVC-free household plastic wrap incorporating polymethyl pentane has also been released by Mycal.[110]

One of Japan's major supermarket chains, Hiroshima-based **Izumi**, will switch from PVC plastic wrap to a non-PVC alternative for packaging all its perishable food and prepared dishes by the end of July 1999. Izumi began changing over to the new packaging for in-store use in fiscal 1998, but the policy has now expanded to vendors, calling on them to deliver packaged products with PVC-free wrap[111].

Northern Kanto supermarket chain **Kasumi** and polypropylene manufacturer Tokuyama have jointly developed a polyolefin wrapping film know as Yumeron, to be introduced at 97 Kasumi locations by the end of fiscal 2000.[112]

Effective in October 1998, the **Osaka North Co-op** and **Co-op Kobe** will stop selling plastic wrap that contains chlorinated material. Both Co-ops have offered polyethylene and other alternative plastic wrap products since March 1995, and products containing chloride now comprise only 25% of Co-op wrap sales.[113]

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[107] ASIA PULSE JAPANESE ENVIRONMENTAL LAW LOOMS FOR RETAIL CHAINS TOKYO, May 6, 1998.
[108] Nikkei Ryutsu Shimbun, September 7 1999.
[109] The Daily Yomiuri September 23, 1999, Thursday SECTION: Pg. 3 HEADLINE: Shops switch wrapping after consumer concern
[110] Nihon Keizai Shimbun, October 6 1998.
[111] Saga Shimbun, June 11 1999, and Nikkan Kogyo Shimbun, August 17 1999.
[112] Ryutsu Sabisu Shimbun, Nihon Shokuryo Shimbun, June 18 1999 and Kagaku Kogyo Nippo June 28 1999.
[113] Yomiuri Shimbun, August 30 1998.

In a joint development effort, **Seven Eleven Japan** and construction materials firm Nittobo have created a PVC alternative (polyolefin-based) plastic flooring, which will be incorporated in new Seven Eleven store construction and remodeling. For some time, Seven Eleven Japan has been pursuing a "free from PVC" policy, eliminating vinyl in items ranging from product packaging through to construction materials, but introduction of the alternative flooring represents a first in the retail and distribution sector.[114]

Sweden

IKEA, the Swedish retailer, has phased out most uses of PVC in their shops, internationally. A statement from February 1998 says:

'IKEA decided already long ago, on the basis of the precautionary principle, to try to gradually phase out all use of PVC in our products, wherever possible. Today we have, with the exception of electrical cables, very few products containing any parts made of PVC. The toys we sell should not contain PVC.'

Ica, Konsum (Swedish grocers) and most Swedish supermarkets started phasing out PVC packaging in the early 1990s.

Switzerland

The retail chains **Migros** and **Co-op** are phasing out PVC. Between 1980 and 1992, Migros achieved a 75 per cent. substitution rate.

UK

The UK supermarket **Waitrose** 'has decided to work towards the removal of PVC from the packaging it uses… Suppliers of branded goods will be advised of our approach and it is hoped they will pursue a similar line. …alternatives to these (the use of PVC in construction and maintenance) will be investigated.' [115]

The following retailers have either phased out PVC or are working to eliminate it:

Holland and Barrett (UK health food specialists)
Lloyds Chemists (UK drug store)

The UK company **Marks & Spencer,** which sells clothes, household products, furniture and food, announced on February 8 2001 its intention to remove polyvinyl chloride (PVC) plastic from all of its products and packaging[116]. Marks & Spencer intends to replace all packaging applications of PVC by the end of 2002 and has made a commitment to replace all other uses of PVC as part of a managed phase out programme as suitable alternative materials are identified.

[114] Press Release, May 10 1999
[115] Letter from Waitrose, 18 October 1996).
[116] Marks & Spencer, press release, February 8, 2001.

The company will announce specific phase-out dates for our other uses of PVC plastic in due course.

Shoe and Sports Equipment Manufacturers

USA/Global

NIKE, the shoe and sports equipment manufacturers are phasing out PVC. In a press release in September 1998 (see 3.9) they state:

'Nike's PVC phase-out began on August 1st of this year and will continue to evolve every day at Nike as we identify more sustainable alternatives and incorporate them into our design and manufacturing processes.'

Telecommunications & cabling

Germany

North German Television's Studio (Hamburg-cabling)

Germany, Japan

As reported in VDI Nachrichten, (the German magazine of the engineers association), January 5, 1999, **German Telekom** and **Nippon Telegraph and Telephone** are going PVC free. New products are already PVC free and both companies are aiming for total substitution in the near future.

Japan

The biggest electric cable manufacturer in Japan, Sumitomo Electric Industry, Ltd. announced on 25 May, 1998 that they will ban PVC for general electric cables. They will start to sell non-PVC cables and all of the generic cable covers will be replaced with non-PVC materials in about 5 years. In September 1998, the company also launched its PVC free Ecocable. The product costs about 20% more, but Sumitomo Electric hopes mass production will keep the cost down.

Toy and Children's Products Manufacturers

A-One, (Japan) - Produce PVC toys for children under three but will ban them by the end of 1999.

Ambitoys - In November 1998 the Dutch toy manufacturer Ambitoys completed their phase out of all PVC by replacing the PVC suction pads on the last two products with rubber.

Ampa Hispania, S.A. (Spain) - notified Greenpeace Spain in September 1999 about their intention to phase out PVC from all their products. This company supplies, among others, one of the largest department stores in Spain, El Corte Inglés. They committed to stop selling PVC teethers from September 1999 and to eliminate collection 2000 (bathing toys and spoons) which contain PVC, from November 1999.

APRICA Kassai Incorporated (Toy and baby goods manufacturer) (Japan, markets in Taiwan, HK, Korea, China and Italy) - The company started to develop research into PVC alternatives in 1997 and was marketing PVC free products by Xmas 1998. Its new (non-PVC) products are sold in a green package saying "environmentally applied/friendly" for consumers to be able to identify the non-PVC choice. Their one use of PVC is in a baby car part, however the part is coated.

Artbaby - Argentina, June 1998, said in a letter "...until the Technical Committee (created by the Ministry of Health) working on the issue gives its final opinion, our company has decided to stop the sale of the items ...(serial numbers of the products), all made of PVC under the trade name TEDDY"

Babelito, (Argentina) - April 1998. One of the largest manufacturers of baby products in Argentina confirmed that it withdrew from sale all soft PVC products and confirmed that they had stopped the production and importation of new soft PVC toys.

Babybjorn AB, the Swedish childrens' products manufacturer, states on their website: ' BABYBJÖRN AB is actively working to eliminate content of harmful substances in materials used in BABYBJÖRN-products. …No BABYBJÖRN-products contain cadmium, lead, ftalates, fomaldehyde, bromine or chlorine. Thereto, no material such as PVC is being used.

Bandai, Japan's largest toy producer (most famous for the Tamagocchi virtual pet) sent a fax to Greenpeace on 14 April, 1999 confirming that they have already stopped the use of PVC in the manufacture of certain toys. According to Bandai, PVC in the type of toy normally sucked or chewed by children is no longer used in products intended for children under three years of age. The fax stated that Bandai recognises the environmental and public health effects not only of phthalates in PVC, but of PVC as a source of dioxin. Bandai, however, are not yet willing to go 100% PVC free.

BRIO Corporation, Sweden. BRIO have made an entire PVC-FREE collection in their summer '98 catalogue of pushchairs and baby carriages. On May 27, 1997 – BRIO Leksaker stated that it would no longer distribute certain Chicco teethers in Sweden. As of October 2000, Brio claims all of its products are PVC free.

Chicco (Artsana & distributors Prenatal), Italy - November 9 1998 ‘our company decided, long time ago, not to use soft PVC in toys anymore for children under 36 months that can be put in the mouth.’ On November 20 they confirmed that ‘the substitute materials are EVA and PP’ and ‘that they are confident that no more PVC for children under three that can be mouthed are on the shelves.’

Early Start, US - Do not use PVC, soft plastic is EVA.

Educa Sallent, S.A., Spain, (100% PVC-free. Products made of paper and cardboard) - December 1998, have agreed to a pledge to not use PVC.

First Years, US - in 1999 began labelling their teethers PVC Free: contains no polyvinyl chloride or phthalates.

FUSTA, Spain (association of 13 wooden toy manufacturers) which do not use PVC and have signed a pledge (December 1998):

Juguetes De Artesania, S.L.
Artesania Cervera, S.L.
Artesania Toneu
Can Cels Manuel Coromina Serrallonga
Casa Mora Viraf, S.L.
Divertoys, S.C.C.L.
El Bagul
Fill de Francesc Reig
Javier Bermejo Sotillo
L'art de la Fusta, S.C.
Sanchez De Taradell, S.L.
Vila Soldevila, S.L.
Xangó, S.L.

Garbep, S.A.-Lanco, Spain (100% toys made of rubber) - do not use PVC and signed a pledge not to use it in December 1998.

Gerber (USA) claims that all of its products manufactured from 2000 are PVC-free.

Giochi Preziosi, Italy, December 1997 - Letter to Greenpeace Italy stating that they will not include soft PVC toys for children under three in their catalogue for 1998 and that they will work on substitutions for other applications of PVC.

GOWI - an Austrian rigid plastic toys producer is PVC free, and often labels their products as such.

Grazioli, Italy - Announced in November 1998 their decision to stop using soft PVC in their toys.

The **Japan Toy Association** has put forth a product labelling policy calling for a listing of materials contained in toys intended for infants and toddlers three years of age and younger. Approximately 600 manufacturing and wholesaling member companies are set to formally adopt these labelling guidelines by the end of February 2000.[117]

JITEX Pisek a.s. Czech producer of nappy pants, textiles and clothing decided to temporarily stop production with PVC in July 2001. JITEX will discuss phasing–out PVC from production with FATRA Napajedla a.s. /PVC processing company/ and National Institute of Public Health in Prague.

Juguetes y Herrajes Joal, S.A., Spain, (Toys for children up to three) - Still use a small amount of PVC in their toys. Have recently released four new models made from (unspecified) alternative materials to PVC.

Kiko Internacional, S.A, Spain - December 1998 agreed to a pledge to phase out PVC.

Lamaze Infant Development/Learning Curve. Correspondence with Greenpeace, February 1998. 'There is no vinyl in any of our toys that are meant to go into children's mouths. Never has been never will be. Goal is for vinyl to be eliminated by end year for all toys for kids under 3. For other toys, to be eliminated when feasible (and safe) alternative can be found.' As of October 2000, the company says it withdrew its vinyl Inflatable Drum toy from the market in 1999, but that its My First Fish Bowl, Fill & Spill, and Tub Frogs toys are still PVC.

LEGO GROUP, Denmark: August 12, 1997 - The Lego Group issued a statement stating that a phase out of PVC had begun at Lego in 1986, starting with packaging. The company's "general policy of not using PVC will be continued with a view to obtaining a 100% phase out within construction toys and packaging concurrently." Only two types of PVC products still exist at Lego, wires for electrical components and doll's heads for LEGO SCALA.

Little Tikes (Rubbermaid), US, November 12 1998, statement that the company will phase out the use of PVC entirely, although vinyl is used in less than 2% of its toys.

Mattel, Inc., US - the world's largest toy manufacturer, announced on 7 December, 1999 that it is "bringing together a consortium of the world's most innovative materials developers and consultants to formally begin investigating newly developed, environmentally friendly, and organically based materials for its products and packaging. The company intends to begin the introduction of

[117] Ymiuri Shimbun, February 5, 2000.

products produced from organically derived materials as early as 2001, based on extensive research in 2000." [118] Mattel brands include **Fisher-Price, Disney, Sesame Street,** and **Tyco**.

The plant-based plastics will replace the use of PVC in the company's products. The decision comes after a year of discussions between Mattel and Greenpeace personnel specialising in material design and toxic chemical issues.

Novatex, Continua, Fashy, Mapa and Helly (Germany) - during 1998, these manufacturers began labeling their toys 'PVC free'.

People Co. Ltd. (Japan) - a well known Japanese toy manufacturer, completed a move to move from PVC to other plastics for toys for children under 18 months.

Pilot Ink Co. LTD (Japan) - Their 'basic policy is to phase out PVC. We will address not only on products itself but packaging, too. We will phase out PVC packaging within this year. We will phase out PVC use in toys under three by the end of the year 2000. Toys for above four, PVC will be phased out when the alternative is available.'

Play by Play Noveities (Spain) - January 5 1999, it is reported that Play By Play Toys will stop making soft PVC toys for children under three.

[118] Press Release, Mattel Inc. EL SEGUNDO, Calif. (December 7, 1999)

Playmobil (Germany) - Letter January 1999: 'Since summer 1992 we totally stopped to use any PVC and softeners in our products – The only item still including PVC is the jumping net of our fire brigade item number 3881, due to the fact that there is no material alternative.'

Primetime Playthings - No PVC used.

Ravensburger (Netherlands) - In December 1997, the Dutch worldwide toy manufacturer Ravensburger stopped selling PVC products and eliminated PVC packaging from their products.

Richfield Co. Ltd. (toy manufacturer, Japan) - Has developed a label which says "This product does not contain any parts made of PVC. You should have no anxiety to play with this" onto their non-PVC products. They have confirmed verbally that they have a policy to minimize PVC use and that they are also in the process of reducing it.

Riko (Richard Kohnstam LTD), UK - November 30 1998: 'Though the majority of our products are aimed at older children and adults, we still take such issues as PVC content very seriously and are taking appropriate action to ensure that we minimise its usage.'

Safety First (US) (October 2000) claims to have eliminated PVC from all of its teethers, using EVA instead.

Sassy Products (US), December 20 1998. Statement 'Our plan is to find PVC alternatives for all our products by the end of the 2nd quarter. The 2 "in the mouth" products which contain PVC will be PVC free before the end of the 1st quarter.' As of October 2000, Sassy says all their products are PVC-free except the two baby photo albums, which they're investigating replacing with cloth.

Takara (Japan) - recently adopted a policy doing away with PVC altogether.

Tiny Love, (US) PVC elimination policy by 2nd quarter 1999. As of October 2000, Tiny Love says it's PVC-free except for its Discovery Lane, which has a vinyl bubble in the center that they're investigating finding a substitute for.

Toho Co. LTD (Japan) - have stopped new production of soft PVC toys for children under three.

Tolico (Denmark) (toy manufacturer) - Has had a policy to avoid PVC for a number of years. Tolico does not stock PVC toys for children below three years and does not use PVC packaging.

Tomy (Japan) - the second largest toy producer in Japan wrote a letter to Greenpeace Japan in June 1999, confirming that they have already stopped the use of PVC in the type of toy normally sucked or chewed by children and that it is no longer used in products for children under three years age. Tomy said that they have been researching on alternatives not only for soft PVC but also hard PVC (packaging materials). Tomy recognises the environmental and public health effects not only of phthalates in PVC, but of PVC as a source of dioxin. Tomy, however, are not yet willing to go 100% PVC free.

Turner Toys (US) - July 1998. This independent toy manufacturer (wooden toys) has incorporated information about the problems of soft PVC toys into their website. They will use this information in an outreach to 1,500 toy buyers, manufacturers, and distributors.

Young Epoch Ltd. (Japan) - plan to phase out the use of PVC in the year 2000 in toys for children under three. For toys for children above three, some are to be banned, others are to be decided. Overall policy for PVC toys is 'we would like to phase out PVC as soon as possible.'

Toy Retailers

Australia

Fast food purveyors and Olympic sponsor **McDonald's Australia** have announced that PVC plastic has been phased out of all the company's "Happy Meal" toys, and that a review is underway to examine the phasing out all PVC.

According to McDonald's, 50 million toys are distributed annually throughout their restaurants in Australia and since September 1999, all toys contained in McDonald's Happy Meals have been PVC-free. McDonald's will be using polypropylene and ABS as an alternative.

The decision to go PVC-free was, according to spokesperson Karyn Lemon, sparked by McDonald's sponsorship of the Sydney 2000 Olympic Games and the "Environmental Guidelines that seek the minimisation or avoidance of chlorine based substances including PVC".

Austria

At the end of 1997, over 20 retailers in Austria stated that they have withdrawn soft PVC toys for small children. Some of the most well known include: **DM** and **BIPA** - both drugstore chains; **Kastner & Ohler**, and **Gerngross** - both department store chains; **Heinz** and **Trio** - both toy retailers with several stores in Austria.

Other Austrian retailers have agreed to establish a concrete plan to withdraw certain soft PVC toys from their shops. These include: **SPAR** and **INTERSPAR** supermarkets and the **Schlecker** drugstore chain.

Belgium

On October 16, 1997, the Belgian Federation of Retailers (**FEDIS**) announced it would withdraw all soft PVC toys designed to be chewed by young children.

Czech Republic

Czech Republic, November 1997, 4 retailers removed soft PVC toys from their stores.

In July 2001, the Julius Meinl supermarket chain removed all PVC toys for children under 3 years and promised not to buy any similar products in the future.

Denmark

Bilka - on May 22, 1997, The Danish superstore Bilka removed all soft PVC toys for children under 3 from its shops.

Faetter BR (toy retailer) Denmark, 1996, removed all soft PVC toys from their shelves by the end of 1996.

FDB (Danish superstore chain), on May 13, 1997 - removed all PVC toys for children under 3 from its shops.

Foetex (supermarket chain) on April 18, 1997 removed all soft PVC toys from its shelves.

Top Toys (Toys R Us), Denmark, May 23. 1997: CEO Henrik Gjoerup from Top Toys guaranteed that "no such toys (soft PVC toys for children below 3 years) can be found in the Toys R Us shops (in Denmark)". Top Toys is also supplier of the toy chain Faetter BR. Equally, **Faetter BR** does not stock soft PVC toys for children below 3 years.

Europe

McDonald’s has stopped selling soft PVC toys from 1 January, 1999 in Europe.

Germany

In December 1997, the German Association of Toy Retailers, **Vedes**, and a toy trading company, **Spiel and Spass**, have called upon their members to withdraw from sale all toys made from soft PVC for children under three. 70 per cent. of

the retail market withdrew soft PVC toys for children under three, including: **Karstadt**, **Hertie**, **Horten**, **Kaufhof Warenhaus AG** and **Kaufhall**, mail order companies **Otto** and **Quelle**, and drugstore chains **dm** and **Bunikowski**.

Italy

Coop, decided not to sell soft PVC toys containing phthalates.

Japan

GranPapa (toy retailer), Japan, 9 July, 1998, declared its company PVC free regarding toys for children under three years old.

The **Seibu Department Stores, Ltd.** (Japan), April 1998, withdrew all soft PVC toys from their shelves.

Seiyu Supermarket Stores, (Japan), July 1 1998, withdrew soft PVC toys from all of their shelves.

The following retailers also stopped selling soft PVC toys for children under three; **Matsuzakaya** (September 98) **Marui** (July 98) and **Marui-Imai** (October 98). About 20 other Japanese retailers have withdrawn soft PVC teething toys.

The Toy Museum, (this is not a shop but a museum of toys) (Japan). Every December, the Toy Museum select the "Good Toys" of the year. In December, 1998 they removed two PVC toys from their list of ‘Good Toys’ because they contained phthalates.

The Netherlands

de Bijenkorf, NL, 6 August, 1997, removed known PVC toys from their shelves.

Blokker (**Bart Smit Toys** & **Intertoys**), NL, July 3 1997, informed Greenpeace Netherlands ‘in all future orders we will state that toys intended for children under the age of three may not contain PVC and that the use of PVC packaging is not allowed.’

Toys R Us (The Netherlands), July 4, 1997 stated in a letter that it would ‘make it fully clear to our suppliers that we are not in favour of the use of PVC in toys and packaging, that is stated as a condition of supply when orders are issued.’

Vendez (**Vroom and Dreesman**), NL, July 15 1997, informed suppliers that all toys must be PVC free.

Spain & Portugal

Imaginarium, (toy retailer, shops in Spain & Portugal) October 1997, decided to stop selling PVC teethers and rattles.

Sweden

KF - on May 27, 1997, the Swedish superstore chain KF announced that it stopped selling soft PVC toys intended for children under the age of three. Approximately 50 toys were removed from its toy assortment.

UK

An official policy announced by Boots the Chemist in November 2000 states " we will continue to seek alternatives to PVC in the manufacture of all Boots brand toys".

USA

Giant Eagle Inc., US, November 23 & 24 1998. 'The Consumer Product Safety Commission will rule in the next few weeks on whether these items are safe or not. Until that time, pull off the shelves all the items listed that would normally be put in a baby's mouth, such as teethers etc.' (List includes squeeze and bath toys).

Generations, Michigan, US, November 1997, issued a statement about why they removed soft PVC teethers from their shops.

The following retailers were listed on the USA CPSC's press release, December 2, 1998, as companies that had 'removed phthalate-containing teethers, rattles, pacifiers and bottle nipples from store shelves.':
K Mart
Sears
Target
Walmart

In December 1997, **Target** agreed to remove two PVC products identified by Greenpeace as containing significant quantities of lead.

Toys R Us, November 13, 1998, announced its 'immediate plans for the worldwide removal of all direct-to-mouth products for infant use containing phthalates, such as teethers, rattles and pacifiers.'

Transportation systems

Austria, Germany

The underground systems in Vienna, Berlin and Dusseldorf no longer use PVC cables.

Germany

Deutsche Bahn (German Railways) have had a policy to avoid the use of PVC and halogenated materials since 1996, if requirements can be fulfilled by other materials. For new vehicles, PVC-free materials should be specified.[119]

Spain

The Bilbao metro system uses PVC-free cabling for environmental and safety reasons.

UK

London Underground's policy 'is to specify low smoke, non halogenated cable for underground areas of the railway' because 'in underground environments cables need to meet very strict standards with respect to: flammability, smoke emission, toxic fume emission.'[120]

Eurotunnel did not use PVC cables in the Channel Tunnel 'the cables used in the Tunnel are all low smoke and fume and use cross linked polyethylene, XLPE, as part of the insulation. There is no PVC in the cabling. The Channel Tunnel uses PVC free cable throughout'. With regard to rolling stock 'the majority of cabling is PTFE which is low toxicity, fire resistant and has low smoke emission properties. … The floor coatings used on our rolling stock are also free of PVC and are in fact an epoxy resin coating which is painted on.'[121]

P&O Cruises 'In an effort to reduce their exposure to PVC - and the potential risks to human health that might occur if fire broke out - P&O cruise ships have eliminated PVC wiring on all their new ships. "Oriana", the 69,000 ton liner, which was built for P&O Cruises in 1995 by Meyerwerft in Papenburg, Germany, was the first ship within the P&O Cruise fleet to adopt this policy.' According to Mike Monaghan of P&O, the company is actively looking at other ways to reduce their exposure to PVC on all their ships.[122]

British Railways Board, 'Because of the problems of smoke generation in fires, the use of PVC has effectively been banned in new and refurbished rolling stock for many years. There are a few minor applications where no alternatives are available, such as decals. There is some use of PVC in signaling applications,

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[119] Letter from Dr.-Ing J.Heyn, Deutsche Bahn, 31 July 1996, Substitution of PVC and halogenated materials
[120] Letter, 11 June 1996, from Hilary Jago, Media Relatives Officer, London Transport.
[121] Letter, 18 June 1996, from Tony Blyth, Deputy Director Health Safety and Quality, Eurotunnel.
[122] Letter, 31 July 1996, from Dr M.T. Monaghan, P&O Steam Navigation Company.

either as cable insulation or as cable ducts but both applications are discouraged because of technical problems which have arisen.' PVC is however used in railway buildings.[123]

USA

The **US Department of the Navy** 'adopted "low smoke" cross-linked polyolefin jacketed cables for the CG class cruisers in the early 1980s. The PVC jacketed shipboard cables …were replaced with the low smoke cables ... in 1984. Also in 1984, we purged the Navy supply system of PVC jacketed cables, and invoked low-smoke cable requirements for all new construction. In 1985 we informed all Naval activities to use only low-smoke cable for all shipboard applications, including repairs'.[124]

In the USA many transit systems have specified low-smoke, halogen-free cables for underground areas.[125]

In the Aerospace industry, as long ago as 1971 NASA engineers recommended against the use of PVC. A letter to Chemical and Engineering News from Frederick G. Gross of the Materials Engineering Branch (April 26, 1971) says: 'For quite some time I have been confronted with problems from the plasticizers in vinyl for aerospace applications and I have long since come to the conclusion that vinyl should not be permitted in any phase of aerospace usage. The major reasons for this are the considerable volatility (especially in vacuums), ease of transfer, and objectionable optical absorbency of the phthalates. Further, substitute polymers for the vinyl are readily available and in many cases they have far superior physical properties at a small sacrifice in immediate cost.'

Water, Sewerage and Gas Industries

UK

Anglian Water's water mains renovation programme will replace 2,500 km of mains. 'The replacement pipework is of polyethylene or ductile iron depending on the diameter.' With regard to sewers 'In September 1995 we advised developers that we would not accept PVC sewers for any new schemes. I would add that this decision was for engineering rather than environmental reasons.'[126]

Welsh Water 'recognises some limitations on the use of PVC and it is rarely used in buildings we have commissioned. We do however, still use small quantities of PVC in some aspects of our operations but as a rule we have

[123] Letter, 7 June 1996, Chris Gore, Policy Advisor, British Railways Board.
[124] Letter from J.J. McGlothin, Director, Electical Power and Distribution Systems Division, US Deparment of the Navy, April 15 1997.
[125] CHEMinfo Service Inc. November 1997. Op.cit.
[126] Letter from Bob Price, Director of Water Quality, Anglian Water Services Ltd, 1 July 1996.

moved away from using PVC for water pipes and now use other alternatives on the market.' [127]

The **UK gas industry** now only uses medium density polyethylene (MDPE) pipe because it is more flexible than PVC. MDPE is also gaining market share in the water industry. [128]

[127] Letter from Paul Goodwin, Environmental Policy Co-ordinator, Welsh Water, 27 May 1998.
[128] Ecotec research and Consulting Ltd., in association with IVAM Environmental Researchand ZENIT GmbH, 'New Clan and Low Waste Products, Processes and Services, and Ways to Promote the Diffusion of such Practices to Industry,' Report on Case Studies for DGIII and DGV, Commission of the European Communities, November 1995.)

3. Index of companies by country (A-Z)

Argentina

Toy and Children's Products Manufacturers
Artbaby
Babelito

Austria

Construction Projects
SMZ Ost Hospital in Vienna

Electronics - Office Equipment Manufacturers and Suppliers
Bene
Herlitz

Food Packaging and Water Bottling
All major food producers

Interior Furnishings Manufacturers
EWE Keuchen

Retailers
All major supermarket chains including SPAR, BILLA, ADEG, LOEWA and MEINL.

Toy and Children's Products Manufacturers
GOWI

Toy Retailers
Over 20 toy retailers,
SPAR and INTERSPAR supermarkets
Schlecker drugstore.

Transportation systems
The underground system in Vienna.

Australia

Construction projects
Sydney Olympics 2000

Toy Retailers

McDonald’s Australia

Belgium

Toy retailers
Belgian Federation of Retailers (FEDIS)

Brazil

Food packaging and water bottling
Cargill (on Brazilian market)

Czech Republic

Toy and Children’s Products Manufacturers
JITEX Pisek a.s.

Toy retailers
4 retailers
Julius Meinl

Denmark

Construction Projects
The Society of Danish Engineers

Food packaging and water bottling
Carlsberg Italia

Medical Products
Grenaa Central hospital

Retailers
IRMA supermarket chain
FDB supermarket chain
Matas drugstore
Hennes & Mauritz, clothes retailer

Toy and Children’s Products Manufacturers
LEGO Group
Tolico

Toy retailers
Bilka
Faetter BR
FDB

Foetex
Top Toys (Toys R Us DK)

Europe

Car manufacturers
Ford of Europe

Toy Retailers
McDonald's

France

Car manufacturers
Peugeot

Germany

Car manufacturers
Daimler Benz
Opel
Volkswagen AG
BMW
Mercedes Benz

Construction projects
Museum of Jewish Culture, Transport Museum, over 130 other buildings in Berlin

Cosmetics, detergents and household goods manufacturers
Wella & several other cosmetics producers

Do-it-Yourself Retailers
OBI

Electronics Industry
Sony International (Europe) GmbH

Electrical appliances
AEG Electronics and Appliances
Vorwerk

Mail order catalogues
Otto

Medical products
Braun-Melsungen

Fresenius

Pharmaceuticals
Bayer

Supermarkets/Retailers
Metro AG
Tengelmann & all German supermarkets

Telecommunications and cabling
North German Television's studio (Hamburg cabling)

Toy and Children's Products Manufacturers
Novatex
Continua
Fashy
Mapa
Helly
Playmobil

Toy retailers
Vedes (Germany Association of Toy Retailers)
Spiel and Spass
70% of the market, including:
Karstadt
Hertie
horten
Kaufhof
Warenhause AG
Kaufhall
Otto
Quelle
dm
Bunikowski

Transportation systems
Berlin & Dusseldorf underground systems

Italy

Toy and Children's Products Manufacturers
Chicco (Artsana & distributors Prenatal)
Giochi Preziosi
Grazioli

Toy retailers

Coop

Japan

Car manufacturers
Daihatsu Motor Company
Hino Motors Ltd.
Honda
Mitsubishi Motors
Nissan
Suzuki Motor Corporation
Toyota

Cosmetics, detergents and household goods manufacturers
Proctor & Gamble Japan
Shiseido
Kao
Lion

Credit Card Companies
Toppan Printing Co

Electrical appliances
Sharp Co. LTD

Electronics Industry
Matsushita Electric Industrial
Sony

Electronics - office equipment manufacturers and suppliers
Ricoh Co.

Medical Products
Terumo

Retailers
Many supermarkets and convenience stores including:
Ito-Yokado Co
am/pm Japan Co
Lawson Inc
Seven Eleven Japan Co.
Mycal Corporation
Ito-Yokado Co.
Seiyu, Ltd
Jusco Co.
Daiei Inc

Consumers Co-operative

Telecommunications and cabling
Nippon Telegraph and Telephone
Sumitomo Electric Industry Ltd.

Toy and Children's Products Manufacturers
A-One
APRICA Kassai Incorporated
Bandai
People Co. Ltd.
Pilot Ink Co. Ltd.
Richfield Co. Ltd.
Toho Co. LTD
Young Epoch Ltd.

Toy retailers
GranPapa
Seibu Department Stores
Seiyu Supermarket Stores
Matsuzakaya
Marui
Marui-Imai & about 20 other Japanese retailers
The Toy Museum

The Netherlands

Construction projects
Nike's new European headquarters

Toy and Children's Products Manufacturers
Ambitoys
Ravensburger

Toy retailers
de Bijenkorf
Blokker (Bart Smit Toys & Intertoys)
Toys R Us (The Netherlands)
Vendez (Vroom and Dreesman)

Norway

Construction projects
The Krohnengen school & many other buildings in Bergen.

Spain

Construction projects
City of Seville Olympics application

Food packaging and water bottling
Danone (Fonvella)
36 water bottling companies

Toy and Children's Products Manufacturers
Ampa Hispania, S.A.
Educa Sallent S.A.
FUSTA (association of 13 wooden toy manufacturers)
Garbep, S.A. - Lanco
Juguetes y Herrajes Joal, S.A.
Kiko Internacional, S.A.
Play by Play Noveities

Toy retailers
Imaginarium

Transportation systems
Bilbao metro system

Sweden

Construction industry
JM
Svenska
NCC
SIAB
Skanka

Electrical appliances
Electrolux

Interior furnishings manufacturers
Eco AB (wallpaper)
Borastapeter (wallpaper)
Kinnarps AB (furniture)

Pharmaceuticals
Association of the Swedish Pharmaceutical Industry
Association of Representatives of Foreign Pharmaceutical Industry

Retailers
IKEA

Ica, Konsum, and most Swedish supermarkets

Toy and Children's Products Manufacturers
Babybjorn AB
BRIO Corporation (PVC free collection)

Toy retailers
KF

Switzerland

Retailers
Migros
Co-op

UK

Construction Industry
The Peabody Trust

Construction projects
Construction Resources Centre, Southwark, London
The Reserve Centre (Redgrave and Lopham Fen)
Earth Centre, Doncaster
Hockerton, Nottinghamshire
Tate Gallery of Modern Art
Environment Agency's Lower Trent area office, Nottingham

Cosmetics, detergents and household goods manufacturers
The Body Shop
Neals Yard Remedies (cosmetics)

Financial Services
Bradford and Bingley Building Society
Jupiter Ecology Fund

Supermarkets/Retailers
Waitrose supermarkets
Holland and Barrett (health food)
Lloyds Chemists (drug store)
Marks & Spencer

Toy and Children's Products Manufacturers
Riko (Richard Kohnstam LTD)
Boots the Chemist (own brand toys)

Transportation systems
London Underground
Eurotunnel
P & O Cruises
British Railways Board

Water Sewerage and Gas Industries
Anglian Water
Welsh Water
UK gas industry

USA

Car manufacturers
General Motors
Ford Motor Co.
DaimlerChrysler
Pontiac
(auto suppliers)
Haartz Corp.
Delphi Interior Systems
Lear Corp.
US Battery manufacturers

Construction projects
World Trade Centre
Newfoundland offshore drilling applications
Environmental Protection Agency's new headquarters

Cosmetics, detergents and household goods manufacturers
Helene Curtis Inc.
Den-Mat Corporation
Bristol-Myers Products
Greenseal
Simple Green
Henry Thayer Co.
Simple Green
Deodorant Stones of America
Beauty Without Cruelty
Freeman Botanicals
Planters Co.
Breath O'Pine
Mistolin
Value King Pine Cleaner
Pine-Sol
Salma Spices

NOW
Borden Cremora Non-Dairy Creamers

Credit Card Companies
Visa International

Food Packaging and Water Bottling
Federated Group
Eagle Family Foods
Dean Foods Co.

Mail Order Catalogues
Norm Thompson Outfitters, Solutions and Early Winters

Medical Products
McGaw Inc.
Baxter International Inc.
Kaiser Permanente
Universal Health Services
Tenet Healthcare Corporation

Shoe and Sports Equipment Manufacturers
NIKE

Toy and Children's Products Manufacturers
Early Start
Gerber
Lamaze Infant Development
Little Tikes (Rubbermaid)
Mattel Inc.
Primetime Playthings
Safety First
Sassy Products
Tiny Love
Turner Toys

Toy retailers
Giant Eagle Inc.
Generations, Michigan
K-Mart
Sears
Target
Toys R Us
Walmart

Transportation systems

US Department of the Navy

4. Annexes

4.1 The Czech Republic Waste Law

(This law came to force in January 1, 1998)

The Fourth Part
Products, Packaging, Packaging Materials

Par.18

(1) Producers and importers are not allowed to put onto the market any products whose unused parts and whose packaging or waste materials can't be re-used or destroyed in such a way that their influence on the environment doesn't exceed the limits set down by special regulations. (9)

(2) Packaging producers and importers have to ensure that the total amount of lead, cadmium, mercury, and chromium to the power of six doesn't exceed limits laid down in the ministry statutes.

(3) Producers and importers are obliged to mention in a document attached to the product ´s packaging, in instructions, or by any other means of imparting information, how to make the best of, or how to destroy, the packaging and those parts of the product which it is not possible to use.

(4) From the 1 st January 2001 it is forbidden to produce and import packaging made of polyvinylchloride (PVC) and products packaged in such material.

Par. 19

(1) Producers and importers of packaging and packaging materials are obliged to ensure that packaging waste is made the best of or recycled as laid down in the ministry statutes, at the latest by 31 st December 2000.

(2) Products and packaging have to have a notice explaining what to do with them after being used, and this notice has to correspond with the regulations laid down in the ministry statutes.

(3) The government will decide on the list of packaging and packaging materials which will have to be returnable, and on details regarding how to operate with packaging and packaging materials and wastes from used products and packaging.

(4) Anyone who introduces onto the market a product or packaging which is listed in government regulations, article 3, is obliged to accept this product or its packaging back, after it has been used.

The ministry will decide, in its statutes, on the acceptable content of lead, cadmium, mercury and chromium to the power of six, which can be present in packaging, the limitation on can be used, the means by which they can be recycled and the ways of marking how they products and packaging.

4.2 Danish Consumer Council

The Danish Consumer Councils Policy on the PVC issue.

Tuesday 5 May

The Danish Consumer Council decided on the first of December 1997 to reconsider its policy on PVC. The background for this is that the problems with PVC is expanding to a level where it is no longer possible for consumers as individuals to solve the problem.

Furthermore the Industry has neither shown will nor ability to keep the voluntary agreements intended to increase the reuse and recycling of PVC. The Consumer Council therefore believes that a there is a need for a more stringent legislation.
On this background the Consumer Council finds that the health and environmental problems related to PVC are so serious that the use of PVC should be banned as soon as possible with the exception of some very specific areas where there are no alternatives

In order to avoid that the ban creates new problems for health safety and Environment the Consumer Council would like to emphasise that the substitution should only occur to materials less harmful to health and environment than PVC

Yours Sincerely

Bjarne Pedersen
Environmental Officer
Forbrugerrådet (The Danish Consumer Council)
Fiolstræde 17
1017 Copenhagen K
Tel: +45 33136311
Fax:+45 33 134115

4.3 German Towns and Communities Building without PVC

Towns and communities show us the way

Most of PVC-production is used in the building sector. Around about 70 per cent. of German PVC-production is used for pipes, gutters, window frames, cables, and floor and wall coverings. Alternatives are available for all. In the middle of 1998 Greenpeace knew 274 local authorities, which by their own statements avoid pvc in public buildings or try to decrease the use of pvc. These local authorities show day in and day out that building without PVC is possible, because alternatives for all products are on the market.

List of Towns & Communities

Aachen, Achern, Achim, Ahaus, Ahrensburg, Amberg, Ammersbek, Arnsberg, Arolsen, Augsburg, Aumühle,

Bad Hersfeld, Bad Nauheim, Bad Oeynhausen, Bad Pyrmont, Bad Reichenhall, Bad Salzuflen, Bad Tölz, Bad Waldsee, Baesweiler, Balingen, Barsinghausen, Bassum, Bayreuth, Bergheim, Bergisch Gladbach, Bergneustadt, Bielefeld, Bobingen, Bonn, Bornheim, Bramsche, Buchholz, Bühl, Büren, Burgwedel, Butzbach,

Celle, Coesfeld,

Dachau, Delbrück, Diepholz, Dietzenbach, Dingolfing, Donaueschingen, Dormagen, Dorsten, Düren, Düsseldorf,

Eberbach, Eckernförde, Edemissen, Eichstätt, Elmshorn, Emmendingen, Engelskirchen, Erftstadt, Erfurt, Erkrath, Erlangen, Erndtebrück, Essen, Ettlingen,

Flörsheim am Main, Frankfurt, Freiburg, Freilassing, Freising, Friedberg, Friedrichshafen, Fürth,

Ganderkesee, Gauting, Geilenkirchen, Geisenfeld, Geislingen a.d Steige, Geldern, Georgsmarienhütte, Geseke, Gießen, Gifhorn, Glinde, Goch, Goslar, Göttingen, Gransee Amt, Greven, Griesheim, Groß-Gerau, Großhansdorf, Gummersbach, Günzburg,

Haar, Halle Westf., Halstenbek, Hameln, Hamm, Hannover, Haren, Harsewinkel, Hattenhofen, Hattersheim am Main, Hattingen, Heinnsberg, Hennef, Hessisch Lichtenau, Hiddenhausen, Hildesheim, Hof, Hofgeismar, Hofheim am Ts., Hückeswagen, Hüfingen, Husum,

Ibbenbüren, Ingolstadt, Jever,

Kaarst, Kalkar, Kamen, Karben, Karlsruhe, Kassel, Kaufbeuren, Kelheim, Kiel, Kirchen, Klützer Winkel (Amt), Kolbermoor, Köln, Königs Wusterhausen, Königswinter, Kranenburg, Krefeld, Kronach, Kropp, Kulmbach,

Lahr, Landshut, Langen, Langenfeld, Langenhagen, Lauf a.d. Pegnitz, Laufen, Laupheim, Lehrte, Leipzig, Lemgo, Lengerich, Leonberg, Leverkusen, Lilienthal, Limburg a.d., Lahn, Lindau, Lindlar, Lingen (Ems), Linnich, Lippstadt, Löhne, Lübeck, Lüdenscheid, Ludwigsburg, Ludwigslust

Maintal, Mannheim, Marienheide, Marpingen, Marsberg, Meerbusch, Melle, Memmingen, Michelstadt, Moers, Monschau, Mörfelden-Walldorf, Morsbach, Mühldorf am Inn, Mühlheim am Main, Mülheim a.d. Ruhr, München, Münster,
Neu-Isenburg, Neu-Ulm, Neufahrn, Neuss, Neustadt b. Coburg, Niedernhausen, Norden, Nordhorn, Nordstemmen, Nümbrecht, Nürnberg,

Oberasbach, Oldenburg, Ostfildern, Ottobrunn, Ottweiler,
Paderborn, Parchim, Passau, Peine, Petershagen, Pfaffenhofen a.d. Ilm, Puchheim, Pulheim, Radevormwald, Ravensburg, Reichshof, Remshalden, Reutlingen, Rheine, Rheinsberg, Riedstadt, Rodgau, Rosenheim, Rüsselsheim,

Saarbrücken, Sarstedt, Schenefeld, Schiffweiler, Schloß Holte-Stukenb., Schortens, Schramberg, Schrobenhausen, Schwäbisch Gmünd, Schwalbach/Taunus, Schwalmtal, Sehnde, Seligenstadt, Selm, Siegen, Singen, Sonthofen, Stade, Stuhr, Stuttgart, Sulingen, Sulzbach-Rosenberg,

Taunusstein, Telgte, Traunreut, Traunstein, Tübingen, Tuttlingen,

Uelzen, Unterhaching, ,Velbert ,Verl, Vreden

Waldbröl, Waltrop, Wardenburg, Wedemark, Weil der Stadt, Weilheim, Weilheim, Weissenburg, Werdohl, Werne, Wernigerode, Wertheim, Wesseling, Westerland, Weyhe, Wiehl, Windeck, Wipperfürth, Wittstock/Dosse, Wolfsburg, Wuppertal, Würselen, Würzburg, Wyk auf Föhr, Zirndorf

Greenpeace promotes:

+ Stop the mass production of chlororganic products

+ Ban PVC

+ The use and promotion of pvc-alternatives

Further Reading:

Chlorfrei: Alternativen zum PVC im Baubereich 2/97 (C 0381)
PVC-Recycling: Wunsch und Wirklichkeit 5/97 (S 0931)
Greenpeace Germany (+49 40/30618-0)

4.4 Russian Federation 'Totally Chlorine Free' Label

State Standard of the Russian Federation
Chlorinated Organic Compounds Free Products
'Totally Chlorine Free' Label
Official edition

Moscow GOST P 51150-98

Preface

Prepared by OMO** 'Greenpeace Council'

Introduced by the State Committee of the Russian Federation for the environmental protection.

Passed and brought into force by Decree #51 of 17.03.98

Brought into force for the first time

(IPK Publishing House of standards, 1998

This standard cannot be completely or partially reproduced, edited and distributed as official edition if not authorised by Gosstandart*** of Russia.

GOST P* 51150-98

Contents

GOST P 51150-98

State Standard of the Russian Federation

Chlorinated organic compounds free products GOST P
'Totally chlorine free' label

Date of entry into force 98.07.01
Preamble

This standard is applied to the label, which means ‘Totally chlorine free’, and sets out form, dimensions, general requirements and rules of the label use, aimed at confirming the fact that the products correspond to the requirements of total lack in them of artificial chlorinated compounds, dioxins included; presence of the label guarantees that during the production, processing, reprocessing and utilisation of the products the environment is not polluted by chlorinated organic compounds, and informs consumers of this.

1. Sphere of application

1.1 Chlorinated organic compounds free products can be labeled ‘Totally chlorine free’. The labeling is voluntary.
1.2 ‘Totally chlorine free’ label is applied to the following products, including packages and packing materials:
- timber products;
- timber, cellulose, paper, board, fibre and products made of them;
- polymer materials: fibres, threads, plastics, foam rubber, resins, synthetic rubber and products made of them;
- chemical production: paints, varnishes, mastics, enamels, priming, fertilisers;
- consumer goods, games and toys.

1.3 The standard is not applied to food and pharmacological products and mixed fodder.
1.4 The form and dimensions of ‘Totally chlorine free’ label are given in annex A.

2. Regulatory references

The standard uses references to the following standards:
GOST 2.304-81 ESKD Drawing types
GOST 14192-96 Cargo labeling
GOST 19433-88 Dangerous cargo. Classification and labeling.

3. General requirements

3.1 Requirements of this standard complement requirements to the labeling, set out in the state standards or other regulative documents for certain types of products and their packages with account of demands, indicated in GOST 14192, GOST 19433.
3.2 Chlorine, chlorine containing oxidisers and chlorinated organic compounds are not used as raw materials during production, processing and reprocessing of chlorinated organic compounds free products.
3.3 Products, earmarked for export, are labeled ‘Totally chlorine free’.
3.4 Dimensions of the label proportionally increase or decrease depending on the size of products, dimensions of the package, means and conditions of labeling, while the outline of the label should stay the same. If the size of the label is to be increased, inscriptions should not merge or become unclear.
3.5 The place for the label is chosen with view to the increase of the informative value of its use and accessibility of the visual perception.
3.6 If it’s impossible to put the label directly on the product, it’s placed on the supplementary sheet, tag or package.
3.7 The colour of the label should be contrasting to the colour of background, where the label is placed. The size of the label is determined by the producer (declarant) in accordance with GOST 2.304-81. Basic size H is at least 10 mm large. The inscription is made by the GOST 14192 type.
3.8 Labeling should be clear and indelible. It’s made by typographic, lithographic or electrolytic means, stenciling, stamping, pressing, scorching, labeling machines or other means. Labeling is not made by hand.
3.9 It’s impossible to put labels of the same content but in different exposition.
4 Rules of ‘Totally chlorine free’ label use.

4.1 'Totally chlorine free' label is put after the confirmation of the declaration of correspondence for products, indicated under 1.2.
The declaration of correspondence includes:
- description of technological processes;
- list of primary and raw materials, which are used for the products manufacture.

The declaration of correspondence is confirmed by the head of enterprise-producer or enterprise-exporter.
4.2 Permission for use of 'Totally chlorine free' label is issued by the certification bodies, accredited in the GOST P system on the grounds of the declaration of correspondence of the enterprise.
The owner of the permit for use of 'Totally chlorine free' label bears responsibility for maintenance of the standard demands.

4.5 Spain – PVC free cities

The following are cities which have approved phase out measures, as of Jaunary 2001:

1. Agüimes (Las Palmas)
2. Alella (Barcelona)
3. Alhaurín de la Torre (Málaga)
4. Almoines (Valencia)
5. Alzira (Valencia)
6. Badía del Vallès (Barcelona)
7. Barcelona (Barcelona)
8. Benalmádena (Málaga)
9. Bilbao
10. Cabra (Córdoba)
11. Calonge (Girona)
12. Calviá (Mallorca)
13. Carmona (Sevilla)
14. Casa-Ibáñez (Albacete)
15. Castelldefels (Barcelona)
16. Castilleja de la Cuesta (Sevilla)
17. Castrillón (Asturias)
18. Córdoba
19. Coria del Río (Sevilla)
20. Cornellá (Barcelona)
21. Ecija (Sevilla)
22. Esplugues de Llobregat (Barcelona)
23. Fene (A Coruña)
24. Gandia (Valencia)
25. Guadalcanal (Sevilla)
26. Illescas (Toledo)
27. Jumilla (Murcia) (en moratoria)
28. La Orotava (Santa Cruz de Tenerife)
29. Lloret de Mar (Girona)
30. Mairena de Aljarafe (Sevilla)
31. Málaga
32. Mancor de la Vall (Mallorca)
33. Marchena (Sevilla)
34. Martorelles (Barcelona)
35. Mataró (Barcelona)
36. Mislata (Valencia)
37. Mollet del Vallès (Barcelona)
38. Mont-roig del Camp (Tarragona)
39. Montcada y Reixac (Barcelona)
40. Morón de la Frontera (Sevilla)
41. Mugardos (A Coruña)
42. Narón (A Coruña)
43. Neda (A Coruña)
44. Novelda (Alicante)
45. Paiporta (Valencia)
46. Perafort (Tarragona)
47. Premià de Dalt (Barcelona)
48. Priego de Córdoba (Córdoba)
49. Rinconada (Sevilla)
50. Ripollet (Barcelona)
51. Sant Bartomeu del Grau (Barcelona)
52. Sant Just Desvern (Barcelona)
53. Sant Vicenç dels Horts (Barcelona)
54. Sineu (Mallorca)
55. Tavernes de la Valldigna (Valencia)
56. Terradillos (Salamanca)
57. Terrassa (Barcelona)
58. Torelló (Barcelona)
59. Torrelles de Llobregat (Barcelona)
60. Tossa de Mar (Girona)
61. Utrera (Sevilla)
62. Vilanova i la Geltrú (Barcelona)

- Senado español (21 de Diciembre de 1995).
- Parlamento de Andalucía (24 de Diciembre de 1996).
- Parlamento de Cataluña (28 de Mayo de 1997).

Consell Comarcal de les Garrigues (Lleida) (25 de Febrero de 1999)

4.6 Spain - Barcelona, Bilbao, Lloret de Mar

– Barcelona

‘Barcelona is declared a Municipality Free of Chlorine Products as a way of expressing the will of this municipality to phase out the use of these types of products, warning our citizens of the need to avoid its use, and as a measure to motivate all economic sectors that use these products, to reconvert progressively their activities to use other types of material less problematic to the environment’.

‘In a time period of 6 months, an evaluation will be presented of all activities, buildings and services with municipal involvement where PVC and other chlorine products are used, and a plan to phase out PVC, in the shortest possible time, including legal and educational measures or of any other nature’.

‘This evaluation will contain at least the following points:

- the use of chlorine plastics;
- the use of chlorine bleached paper;
- the use of chlorine cleaning products;
- the use of insecticides and plaguicides;
- concrete action proposals to substitute in all internal departments of the City Council, chlorine products for other harmless products to the environment;
- ordinances modification proposals;
- proposals to condition municipals public assistance for the non use of chlorine products’.

– Bilbao

Furthermore, they adopted the following measures: ‘the Bilbao City Council urges the Government of the Vasque country through their corresponding Department to request merchants and distributors of the Vasque autonomous region to voluntarily withdraw these products from the market’.

‘The Bilbao City Council urges the Government of the Vasque Country through their corresponding Department to promote information campaigns regarding the risks that is posed by contact with PVC toys and to warn about the unnecessary and easily avoidable risk, of exposing children in contact with this material’.

– Lloret de Mar

The following is the agreement approved in the Plenary Meeting:

‘Withdraw from the municipal day nursery of Lloret de Mar all PVC toys because of the hazard they represent to children’s health, due to the high content of phthalates, a very dangerous chemical substance that leaches during its use, normally resulting from sucking or chewing on soft PVC toys’.

‘Give support to the initiative promoted by Greenpeace in their campaign for the withdrawal of these products from shops and drug stores’.

– Lloret de Mar (2)

Among these measures are the following commitments:

‘Building sites (non introduction of PVC): grant equivalent to the 10% of the municipal tax quote on construction, installations and buildings.’

‘Building substitution of PVC elements: grant equivalent to the 100% of the municipal tax quote on construction, installations and buildings related exclusively with these mentioned buildings’.

4.7 UK – Newhaven Town Council.

Council Policy on the use of PVC:-

- The Council will seek to avoid PVC in all products it purchases, including office equipment and furniture, electrical cables and miscellaneous items.

- The Council will make their policy known to suppliers and contractors and give priority to those that offer products that do not use PVC.

- When refurbishing or constructing public buildings or those for which public money is made available, the Council will specify to the designers/contractors that PVC should not be used except where an alternative cannot be found at a reasonable cost. In this case details of attempts to find such alternatives will be required by the Council. This applies to all construction materials including doors and windows, floors, electrical cabling, interior and exterior drainage and waste systems, underground piping and fixtures and fittings.

- The council, by implementing this policy and by other means, will work to educate the public on the environmental hazards of PVC and to lead by example.

- The Council will actively encourage and aid other Local Authorities and other agencies with which the Council works, to implement PVC restrictions.

- The Council recognises that it is the chlorine content of PVC that causes the most serious environmental damage and so will also avoid the use of other chlorinated products, such as chlorine bleached paper and chlorinated disinfectants.

4.8 Chicago Medical Society

No. 98-28 RESOLUTION

PVC Plastic Use by Health Care Facilities

Submitted by: Peter Orris, M.D.,

Councilor, Wood Street Branch

WHEREAS, the U.S. Environmental Protection Agency, in its 1994 Draft Dioxin Reassessment concluded that medical waste disposal is a major source of Dioxin contamination; and

WHEREAS, virtually all chlorinated organic compounds such as dioxins that have been studied exhibit at least one of a wide range of serious toxic effects such as endocrine dysfunction, developmental impairment, birth defects, reproductive dysfunction and infertility, and cancer, often at extremely low doses; and

WHEREAS, dioxins are created and released into the environment during the combustion of chlorinated plastic products such as polyvinyl chloride (PVC), representing on a tonnage basis, the largest and fastest growing class of synthetic chlorinated organic compounds; and

WHEREAS, the use of PVC products by the health care industry has grown rapidly, especially for the single use or short term use applications, accounting for most of the organically bound chlorine in medical waste; and

WHEREAS, any substitution for a chlorinated plastic product must provide a less toxic alternative with concern for the full public health implications of the replacement, including infectious considerations; and

WHEREAS, highly effective programs for the reduction of hospital waste have been initiated in the U.S. and programs for the substitution of PVC are in place in some hospitals in Europe, therefore be it

RESOLVED, that the CMS encourage the study and evaluation of alternative products and practices that will lead to the reduction and elimination of dioxin release into the environment from medical products composed of chlorinated hydrocarbons; and be it further

RESOLVED, that the CMS refer this issue to the ISMS for further action.

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4.9 Nike PVC phase out

September 1998

FOR IMMEDIATE RELEASE

NIKE STATEMENT ON DECISION TO PHASE-OUT PVC

AT NIKE WE ARE LOOKING AT THE BIGGER PICTURE.

A concerted effort to reduce the environmental impact of NIKE's business began in 1993 with the establishment of the NIKE Environmental Action Team. Our move towards sustainable business practices, which includes environmental, social and economic aspects, has evolved since that date.

Our corporate environmental policy (P.A.C.E., Policy Assuring a Cleaner Environment) is intended to cover three key areas: product stewardship, supply chain responsibility and operational stewardship. Under the theme of product stewardship we need to consider a number of elements: conserving resources, minimizing waste, and reducing the potential for any negative impact on the environment or living systems.

Based on these criteria we have committed to phasing out the use of polyvinyl chloride (PVC) in our products.

In reaching this decision, NIKE considered a broad range of scientific information from its own consultants, industry sources, government agencies and independent monitoring groups. Many of

these findings indicate that PVC may pose a risk of harm to living systems, particularly if it is manufactured or disposed of improperly. Nike is actively pursuing alternatives to PVC that better meet our sustainability criteria while still meeting our high athletic performance standards.

NIKE's PVC phase-out began on August 1st of this year and will continue to evolve every day at NIKE as we identify more sustainable alternatives and incorporate them into our design and manufacturing processes.

website: http://www.nikebiz.com/media/media_nj.html