

Message from ACOPLASTICOS:

Rad : 1653
Bogotá, D.C., 30 de noviembre de 2000

Sr.
REIHARD SCHULTE BRAUCKS
Jefe de la Unidad Química
Comisión Europea
Fax 011-32-2-295-0281
Bruselas, Bélgica

**REF : LA INDUSTRIA DEL PVC EN COLOMBIA Y EL "LIBRO VERDE"
SOBRE PVC**

Estimado señor :

En documento anexo, me permito enviar los comentarios de la Asociación Colombiana de Plásticos, ACOPLASTICOS, en relación con los interrogantes del "Libro Verde sobre los aspectos ambientales del PVC", expedido por la Comisión Europea en julio pasado.

Nuestra participación en este debate, que en buena hora ha convocado la Comisión, pretende contribuir al conocimiento de la situación de la industria del PVC en los países en vía de desarrollo, como Colombia, tema sobre el cual se plantean algunas inquietudes en el "Libro Verde" .

Nuestra Asociación ofrece su disposición de colaboración para aclarar o ampliar la información contenida en el documento anexo. Estamos seguros de que el debate abierto por la Comisión contribuirá a clarificar los temas que han venido siendo objeto de controversia en torno a éste producto y redundará en decisiones positivas para el futuro de la industria.

Cordialmente,

CARLOS ALBERTO GARAY SALAMANCA
Presidente

Anexo : lo indicado

LA INDUSTRIA COLOMBIANA Y LA CONTROVERSI A SOBRE EL DESEMPEÑO AMBIENTAL DEL PVC

1.- INTRODUCCIÓN

El presente documento analiza algunos de los temas que se plantean en el denominado "Libro Verde sobre las cuestiones ambientales del PVC", a la luz de las experiencias colombianas relacionadas con el uso y disposición de este producto.

2.- LOS PLÁSTICOS Y EL PVC EN COLOMBIA

La industria plástica colombiana demanda al año un poco más de medio millón de toneladas de todos los tipos de resinas plásticas, las cuales son transformadas por aproximadamente 2.000 empresas, entre las que predominan empresas de tamaño mediano y pequeño. Con el volumen citado, Colombia tiene un consumo per cápita de plásticos de 13 kg / habitante.

Estas cifras contrastan con la producción mundial de plásticos y con los consumos estimados (1998) para países desarrollados como los Estados Unidos (40.119 miles de toneladas), la Unión Europea (35.732 miles de toneladas) y Japón (13.882 miles de toneladas), en donde el consumo per cápita es muy superior : 100 kg/ habitante a 130 kg/ habitante.

En otras palabras, el mercado de plásticos en los Estados Unidos es 75 veces el de Colombia y el mercado de plásticos de la Unión Europea es aproximadamente 67 veces el de Colombia. Sólo España demandó en 1998 aproximadamente 3.223 miles de toneladas, un consumo seis veces mayor que el de Colombia.

Como se observa a continuación, durante el período 1995 - 1999, las resinas de PVC han tenido un consumo aparente promedio de 124.000 toneladas / año y su participación frente al total de los plásticos es de aproximadamente el 25%.

Consumo de Plásticos en Colombia - Miles de toneladas

	1995	1996	1997	1998	1999
Las principales resinas : PE, PP, PS, PVC, PET, otros	453.5	494.0	527.0	533.0	522.0
Resinas de PVC	120.0	124.0	134.0	128.0	115.0
Participación del PVC	26.5%	25.1%	25.4%	24.0%	22.0%

Estimativos de ACOPLASTICOS

Aproximadamente el 50% del PVC consumido anualmente se destina a la fabricación de tuberías tanto para el sector de la construcción como para aplicaciones en infraestructura. Se puede afirmar entonces que entre 60.000 y 65.000 toneladas de PVC no entran inmediatamente en la corriente de residuos plásticos, dado que este tipo de tuberías quedan enterradas durante la vida útil de este tipo de productos. En cambio, el consumo de PVC en aplicaciones desechables, tales como los envases, ha decrecido notoriamente en los últimos años.

En Colombia, el manejo de los residuos plásticos en general se realiza principalmente mediante la disposición final en rellenos sanitarios y el reciclaje mecánico. La incineración de plásticos como opción de manejo es mínima. Por iniciativa de las empresas privadas fabricantes de cemento, se estudian las perspectivas de la incineración de algunos plásticos como las películas de polietileno utilizadas en los cultivos de flores y de banano, así como los envases plásticos empleados por la industria de plaguicidas, los que por su grado de contaminación, no permiten el reciclaje mecánico. Igualmente, los residuos hospitalarios son objeto de este tratamiento dondequiera que se dispone de incineradores adecuados.

Cabe señalar que, como es usual en los países en vías de desarrollo, en Colombia existe una cultura del aprovechamiento de los desechos fundamentada en la pobreza de gran parte de la población. Este hecho hace posible que actualmente se esté recuperando y reciclando alrededor del 25% de los desechos plásticos generados, a pesar de que no existen políticas o legislación nacionales que coadyuven a estructurar sistemas de recolección. Iniciativas como el establecimiento de un Sistema Nacional de Codificación de envases plásticos para reciclaje han sido promovidos por la industria como parte de sus compromisos voluntarios con relación al manejo de los desechos generados por su actividad.

La industria del PVC ha sido particularmente activa en promover y financiar este tipo de iniciativas, cuyos resultados hasta el momento son alentadores. El reciclaje de PVC, en particular, presenta un interesante potencial por la facilidad para recuperar ciertos tipos de residuos típicos, como las tuberías, perfiles y cables. Los fabricantes y transformadores del PVC en Colombia están desarrollando una activa labor en el patrocinio de organizaciones de recicladores, financiando programas educativos para la comunidad y ofreciendo entrenamiento técnico a los procesadores de los desechos.

Los residuos plásticos pre-consumo generados por las industrias son reciclados en casi un 100% por las propias empresas o vendidos a terceros para su aprovechamiento. El PVC no es una excepción y la propia industria está resultando innovadora en la búsqueda de alternativas para aprovechar sus desechos.

3. CONCEPTO DE ACOPLÁSTICOS SOBRE LOS INTERROGANTES DEL “LIBRO VERDE”

Qué serie de medidas deberían aplicarse para resolver el asunto del uso de plomo y del cadmio en el nuevo PVC ? Deberían asociarse medidas específicas al reciclado mecánico de los residuos de PVC que contienen plomo y cadmio ?

ACOPLÁSTICOS conoce del compromiso voluntario de la industria Europea de eliminar el uso del cadmio en el 2001. Sería importante, en el caso Colombiano, la concertación con los fabricantes o importadores de estabilizantes para buscar acuerdos similares.

En relación con eventuales medidas restrictivas para el reciclaje de residuos de PVC, que por su formulación puedan tener estabilizantes con cadmio o plomo, ACOPLÁSTICOS considera que no hay mérito para adoptarlas. Las investigaciones internacionales señalan que la migración de este tipo de metales pesados durante el procesamiento no es significativa. Las medidas restrictivas en este sentido limitarían seriamente el reciclaje de grandes cantidades de PVC representadas por las aplicaciones del sector de la construcción (tuberías, cables, perfiles, paneles, etc). que contienen dichos metales.

Deberían adoptarse medidas específicas para el uso de ftalatos como plastificantes en el PVC ?

No deberían adoptarse medidas de ningún tipo hasta tanto no se concluyan las investigaciones internacionales en curso sobre la migración de ftalatos y sus potenciales impactos en la salud y el ambiente.

Qué serie de medidas serían las más eficaces para alcanzar el objetivo de aumentar el reciclaje de PVC ?

El reciclaje mecánico de los termoplásticos, que en Colombia representan más del 95% de la demanda de resinas plásticas, (el 5% restante corresponde a los termoestables), es una práctica que no presenta dificultad alguna desde el punto de vista técnico, siempre y cuando para la operación de los equipos (molinos, granuladores, peletizadoras, etc), se disponga de una materia prima limpia en lo posible y bien seleccionada.

La mejor forma de aumentar el reciclaje de residuos de PVC sería fomentando la disponibilidad de residuos aprovechables, es decir, retirando de la corriente de residuos sólidos generados, (en el hogar, la industria, el comercio), vía programas de separación en la fuente, de todos los plásticos, incluidos los residuos de PVC.

Las iniciativas voluntarias de la industria pueden jugar un papel muy importante en el logro de este objetivo, en conjunción con políticas y regulaciones coherentes por parte de los gobiernos, que contribuyan a facilitar la recolección diferenciada .

Qué serie de medidas serían las más eficaces para resolver las cuestiones relativas a la incineración de residuos de PVC ?

La incineración es la opción de manejo más apropiada en aquellos casos en que los materiales o residuos de PVC están muy sucios y no es rentable su recuperación vía el reciclaje mecánico. Las acciones a considerar deberían incluir medidas para asegurar que se disponga de equipos y tecnología adecuada para minimizar los impactos de la incineración, en lo posible recuperando energía o produciendo compuestos químicos aprovechables.

Son necesarias medidas específicas relativas al depósito en rellenos sanitarios de los residuos de PVC ?

ACOPLÁSTICOS considera que, a la luz de los estudios de la propia Comisión Europea, no existe evidencia de que la magnitud de los impactos potenciales atribuibles supuestamente a la presencia de PVC en los desechos, justifique tales medidas. El propio "Libro Verde" reconoce la inexistencia de datos para dimensionar el efecto que tendrían las cantidades de plomo y cadmio presentes en los residuos. Es cuestionable que la sustitución de dichos metales tenga un efecto importante para reducir las emisiones totales de éstos al ambiente, provenientes de otras fuentes.

Cuáles son los instrumentos adecuados para desarrollar una estrategia horizontal en materia de PVC, Debería preverse una política de sustitución del PVC para algunas aplicaciones concretas ?

Si existiesen aspectos desfavorables en nuestro medio para el tratamiento de los residuos de PVC (reciclaje mecánico, incineración, etc), y problemas de volúmenes de estos materiales que causasen serios problemas al medio ambiente (por contaminación visual), que en el momento no se dan en Colombia, la estrategia debería ser la de explorar la forma de subsanarlos y bajo ninguna circunstancia la de promover, sin fundamento, la sustitución de estos materiales.

Cuando, en el contexto del ciclo de vida de determinado producto, el balance ecológico es favorable, los productos se van posicionando por sus ventajas, que compensan sus potenciales efectos negativos sobre el medio ambiente. Infortunadamente, lo que está sucediendo en el caso del PVC es el cuestionamiento sin argumentos científicamente fundamentados. La posición de ACOPLÁSTICOS es la de que, en estas situaciones, sean las investigaciones de expertos las que señalen con argumentos técnicos si procede o no la sustitución del caso.

Contacts: Anne Humberstone - E-mail: ach@beama.org.uk
Gordon Antonio - E-mail: gantonio@beama.org.uk

Our Ref. BSP 00/088

30 November 2000

To: Mr Krämer, Head of the waste management unit (DG ENV)
& Mr Schulte Braucks, Head of the chemicals unit (DG ENTR)

BEAMA RESPONSE TO EUROPEAN COMMISSION GREEN PAPER ON ENVIRONMENTAL ISSUES OF PVC {COM(2000)469, 26/7/2000}

Introduction

The British Electrotechnical and Allied Manufacturers' Association Limited (BEAMA) is a federation of trade associations serving the electrical, electronic and allied industries (except computers and consumer durables) throughout Britain. The Associations between them are representative of a wide range of electrical products from heavy turbo-generating equipment, transformers and switchgear, through to rotating electrical machines and installation equipment such as conduit, circuit-breakers, plugs and sockets, fuses and wiring accessories for domestic and industrial use. It also covers welding equipment and industrial cleaning machines.

BEAMA is the leading trade association of the £60,000 million a year electrotechnical industry which exports 46% of its total production annually. Manufacturers in the BEAMA product sectors employ around 150,000 people in Britain, producing an annual output of £27,700 million, of which £14,000 million is exported.

GREEN PAPER POINT 1

Issues for consideration:

The Commission considers, on the basis of the above-mentioned analysis, that the contamination of the environment by lead and cadmium should be avoided as much as possible. The Commission is in favour of a reduction of the use of cadmium and lead as stabilisers in PVC products. A number of measures could be envisaged and should be assessed in the light of their potential environmental and economic implications.

- 1. Legislative phase-out or other risk reduction measures for cadmium and/or lead with the possibility of temporary derogations*
- 2. Implementation of the voluntary commitment of the PVC industry on cadmium*
- 3. Development of further voluntary commitments for lead.*

Question no. 1:

Which set of measures should be implemented to address the issue of the use of lead and cadmium in new PVC? According to which timeframe?

Answer to Question 1

- If the risk assessments of the use (in PVC) of cadmium and lead, lead to the conclusion that their continued use is unacceptable then the continued use of these materials should be phased out within a 10 year timescale, provided that sufficient alternatives at an acceptable cost are available; a temporary derogation may be required.
- A legislative phase-out is essential to ensure a level playing field in Europe; voluntary schemes would simply be ignored by many third country suppliers.
- It would be essential that PVC imports from third countries were required to comply with any legislative requirements.
- Re-cycling is the most acceptable alternative since the lead and cadmium stabilisers remain bound within the PVC during all the 'use' phase. This assumes that the safety of workers during production can be safeguarded, which seems likely.
- Neither landfill nor incineration destroys lead or cadmium. Research should determine which of these is the lower risk alternative for residual amounts of PVC which cannot be recycled.

GREEN PAPER POINT 2

Issues for consideration:

The use of phthalates in PVC applications raises issues, described above, which could be addressed through a number of measures, including legislative or voluntary risk reduction measures. These potential measures should be assessed in the light of their environmental and economic implications.

Question No. 2:

Should specific measures be taken for the use of phthalates as plasticisers in PVC? If so, when and through which instruments?

Answer to Question 2

- Although the risk assessments of phthalates is incomplete it seems likely that the risks associated with the continued use of phthalates is unacceptable.
- A legislative approach would be necessary so as to provide a level playing field in Europe.

GREEN PAPER POINT 3

Issues for consideration:

The Commission considers, on the basis of the above-mentioned analysis and given the present low recycling rate, that recycling of PVC should be increased. This could be achieved through a range of measures, which could be used separately or in combination. Their potential environmental and economic implications should be assessed. These potential measures include:

- 1. Mandatory collection and recycling targets for some relevant PVC waste streams*
- 2. Voluntary commitment of the industry to improve and finance, totally or partially, the collection and the recycling of some relevant PVC waste streams*
- 3. Recommendations to Member States with the objective of establishing and developing separate collection of PVC waste and other demolition waste*
- 4. Development of appropriate standards that allow the use of recycled PVC materials*
- 5. Marking of plastic products as a useful tool to facilitate the separation of PVC waste from the general waste stream and development of other methods for plastic identification and sorting*
- 6. Development of innovative recycling processes for certain post-consumer PVC waste*

Question No. 3:

Which set of measures would be the most effective to reach the objective of an increase of PVC recycling?

Answer to Question 3

- Mandatory requirements in Europe would be preferable so to achieve the objectives of reducing the risks to human health and the environment and supporting sustainable development. Voluntary schemes would clearly take longer to implement and would vary between member states.
The separate collection of PVC waste would be essential. Member states should have an obligation to recover PVC waste from demolition. Member states should encourage the use of recycled PVC where possible. If revised material standards will achieve this then it should be encouraged.
- The identification of PVC products by suitable marking would also be essential. Material Identification marking of plastic products to aid separation should be mandatory. Such identification of plastic products is already well developed.
- Use of producer responsibility regulations targeting waste streams - rather than regulations addressing particular material wastes, should be the vehicle used. However, these types of regulations need to be reviewed to ensure they are beneficial to the environment / human health.
- It is difficult to envisage what 'innovative recycling processes' could be developed. Mechanical recycling could be made more efficient/productive but this is unlikely to be innovative. The processes that occur during the chemical recycling of PVC are well understood but will always present greater risks to human health and the environment than mechanical recycling.

GREEN PAPER POINT 4

The recycling of PVC waste containing heavy metals raises specific issues due to the potential dilution of heavy metals into new and possibly wider range of products. Some potential measures could be envisaged to address these issues. These measures should be assessed in the light of their potential environmental and economic implications. They include:

- 1. Legislative instruments to restrict the mechanical recycling of PVC waste containing lead and cadmium*
- 2. Specific conditions for this recycling, such as recycling in the same type of application, the control of the placing on the market of recyclates, the marking of the recycled products and the control of the use of heavy metals*
- 3. No specific conditions for this recycling.*

Question No. 4:

Should specific measures be attached to the mechanical recycling of PVC waste containing lead and cadmium? If so, which ones?

Answer to Question 4

- Restrictions on the re-use of PVC containing lead and cadmium would be unnecessary since these heavy metals are not released during mechanical recycling. The continuous dilution of heavy metals would reduce the risk if the PVC material were eventually disposed of and the overall risk would continually reduce as the volume of PVC with no heavy metal content increased.
- The proposal to increase the mechanical recycling of PVC is fully supported and should be part of a legislative requirement. Such an approach supports the objective of sustainable development while minimising the risks to human health and the environment.
- Landfill is not desirable due to the unknown behaviour in landfills of PVC containing lead or cadmium and the leaching of additives.
- Incineration is not acceptable since it does not destroy lead or cadmium and it creates unacceptable emissions.

GREEN PAPER POINT 5

Issues for consideration:

The Commission notes with interest the efforts described above to develop further chemical recycling technologies. In this context, potential measures could be envisaged in order to encourage these developments. Their potential environmental and economic implications should be assessed. Such measures include:

- 1. Further voluntary initiatives from the PVC industry*
- 2. Recommendations for targets for chemical recycling for those waste streams where mechanical recycling is not possible*
- 3. Setting of mandatory targets for chemical recycling.*

Question No. 5:

Which set of measures would be most appropriate for chemical recycling of PVC waste?

Answer to Question 5

- Although chemical recycling may be preferable to incineration and landfill, chemical recycling has its own considerable drawbacks particularly the fact that it releases heavy metals which may have to be disposed of through landfill; also, it is uneconomic at present.
- However, it must be recognised that some final disposal of PVC will be necessary no matter how much mechanical recycling is performed. As stated in the green paper, chemical recycling should be reserved for those cases where the mechanical recycling of PVC is not appropriate.
- There should be no mandatory targets for chemical recycling of PVC but there could be a requirement that PVC intended for final disposal must be subjected to chemical recycling.
- Chemical recycling should be reserved for those cases where the mechanical recycling of PVC is not appropriate.

GREEN PAPER POINT 6

Issues for consideration:

The Commission considers, on the basis of the above-mentioned analysis, that the incineration of PVC waste raises a number of issues. A range of measures could be envisaged to address these issues and should be assessed in the light of their potential environmental and economic implications. Such measures include:

- 1. Diversion of PVC waste, mandatory or not, as far as economically feasible, from incineration to preferably recycling or landfilling. This would require the introduction of collection schemes to ensure separate collection of PVC to be diverted*
- 2. Similar diversion only for rigid PVC*
- 3. Meeting the additional costs related to the incineration of (totally or partially), e.g. through internalisation of these costs in the price of new PVC products or direct financial contribution to operators of incineration plants*
- 4. Encouragement of the conversion of the flue gas cleaning technologies that reduce the amounts of residues generated or allow the recycling of HCl instead of its neutralisation*
- 5. Further research on the potential relation between PVC incineration and dioxin formation should be carried out.*

Question No. 6:

Which set of measures would be most effective to address the issues linked to the incineration of PVC waste?

Answer to Question 6

- Due to the major disadvantages of PVC incineration it should be phased out for general use but may be appropriate where the final disposal of PVC is required.
- Formation of greenhouse gases, release of heavy metals, formation of HCl, release of chlorine and the possible formation of dioxins are the drawbacks of incineration.
- Mechanical recycling of PVC has none of these difficulties and provides sustainable development while minimising the risks to human health and the environment.
- To summarise, a three pronged approach is necessary,
 1. Divert waste from incineration to recycling where economically feasible.
 2. Further research into the formation of dioxins. (From ALL sources, this should not be driven only from a PVC perspective).
 3. Recovering harmful elements from flue gas should also be encouraged.

GREEN PAPER POINT 7

Issues for consideration:

The Commission considers, on the basis of the previous analysis, that the landfilling of flexible PVC waste raises some issues. A range of measures could be envisaged to address these issues. Environmental and economic implications of these measures should be considered. Such measures include:

- 1. Disposal of flexible PVC waste in controlled landfill sites with high emission standards as foreseen in the landfill Directive*
- 2. Further research on the leaching or emissions of additives.*

Question No. 7:

Are specific measures concerning the landfilling of PVC waste necessary? If so, which ones?

Answer to Question 7

- The use of landfill for the disposal of PVC should be minimised. Waste should be diverted from landfill to mechanical recycling where economically feasible, for all PVC.
- Leachate from landfill and gaseous emissions need to undergo further research.

GREEN PAPER POINT 8

Issues for consideration:

A number of issues regarding the environmental impacts of PVC have been identified, including the question of a horizontal approach and of appropriate instruments to address these issues. The Commission sees merit in developing a horizontal strategy on PVC. A number of instruments are available to implement such an approach. Environmental and economic implications, as well as the compatibility with the international obligations of the Community should be assessed.

Question No. 8:

Which are the appropriate instruments for developing a horizontal strategy on PVC? Should a PVC substitution policy for some specific applications be envisaged? If so, how?

Answer to Question 8

- There is a need for European legislative measures i.e. a 'PVC Directive', to require the mechanical recycling of PVC whenever possible with chemical recycling and/or incineration processes available where final safe disposal of PVC is required. Landfill by PVC should be minimised.
- PVC is such a stable, low-cost and versatile material that its forced substitution is undesirable and completely unnecessary providing its production, recycling and disposal are controlled.
- A PVC directive should be implemented to control / phase out the use of certain types of additives in PVC.
- Other instruments should be used to encourage recycling of PVC and minimise or prevent its disposal by landfilling / incineration. i.e. producer responsibility regulations, landfill directive, construction waste measures, etc. These should not single out PVC, specifically.

BEAMA T & E
30 November 2000

Message from :

David Vallet Moreno	Estefania Vallet Moreno	Gabriel Sanchez Calatyud
Pura Vindel	Antonio García Fuentes	B.Campos
Ximo Val	Miquel Angel	Juan José García
Luis Antonio Blanco	Luis Girbés Llopis	Xabier Hualde
Teresa Tió Batllori	Javier Santamarta	Manuel Aurelio Rodriguez
Ana Pascual Oosterling	Fdez. Valle	Durán Mellado Jerez de la Fra
Rabionet	Carbajo Cornejo	Romero Martín
Acuña Pazos	Campos	Soriano Seral
Sancho Maqueda	Arrue de Pablo	Antonio Giménez Lorang
Pacheco	Jose Antonio Salvatierra	Salvador Martí Recasens
Jorge Pérez Furdada	Julio Mauleon	Ángel Luis Gómez Jiménez
Antonio Grangel	Monica Cerdan Belda	Merche Alvarez Leiva
Jesus Cerdan Belda	Asuncion Salud Belda	Fabian Ibarra Rosales
Alberto Estévez	Gaspar Almazan	Jordi Cruz Plaja
Javier Losada	Amparo Candelas	Beatriz Fariña
Alex Ruiz Pastor	Jesús Torres del Rey	Maria Montoya Gonzalez
José M ^a Vela Torrea	Jesus Tejero Martin	Antonio Luis Tejedor Caballero
Erica Mirochnik	Cristina Peña Román	Reyes García-Doncel Hernandez
Ricardo Arnáez	Néstor Luque	Catalina Vallbona Adrover
Bittor Legorburu Lopez	Andrés Vales	José Pedro Alonso
José M ^a Gallardo Durán	Luisa M ^a Rubio Hernández	Itziar Echevarria Azkargota
Ana Yturralde	Patrick Schinnerling	Javier Santamarta
Mr. López	Manuel García	Victoria de las Heras Cañas :

En primer lugar quisiera comunicarles mi satisfacción por la decisión de la Comisión Europea de adoptar una extensa estrategia en torno al PVC, tras la publicación del Libro Verde sobre 'Las cuestiones medioambientales del PVC'.

Los estudios científicos que avalan el Libro Verde han puesto en evidencia un buen número de peligros asociados al PVC, especialmente durante la eliminación de sus residuos. Su depósito en vertederos es una bomba de relojería, debido a la liberación de los aditivos tóxicos del vinilo y la posible formación de dioxinas cuando se producen incendios en estas instalaciones. La incineración del PVC supone un problema todavía mayor, ya que aparte de los riesgos de generación de dioxinas, el volumen de residuos resultantes de la quema del vinilo podrían incluso exceder las cantidades originales de PVC que entraron en la incineradora. El reciclaje tampoco es la solución, ya que se estima que este sistema de gestión sólo tratará el 5% de los residuos de PVC para el año 2020. Lamentablemente la situación se hace más crítica día a día, en la medida que las cantidades de residuos incrementarán significativamente a lo largo de las próximas décadas.

Los peligros del PVC a lo largo de todo su ciclo de vida responden a dos cuestiones fundamentales: el PVC contiene cloro y necesita grandes cantidades de aditivos. Estas

características lo convierten en un plástico único, suponiendo un peligro no sólo su fabricación y uso, sino también cualquier opción de eliminación.

Como el PVC no puede existir sin la presencia de cloro, la única forma de frenar los riesgos del vinilo es eliminar su producción lo antes posible. En el mercado ya existen materiales alternativos más seguros. Según estudios realizados en Alemania y Canadá, la sustitución del PVC por dichas alternativas supondrían un claro beneficio en el empleo.

Hoy en día la presencia de los productos de consumo de PVC es una realidad preocupante, por lo que es necesario evitar que su eliminación mediante métodos poco seguros empeoren la situación. Los estudios de la Unión Europea han mostrado que las operaciones de gestión del PVC actuales no son seguras, por lo que se debe hacer el esfuerzo de separar el vinilo del resto de los residuos, evitando de esta manera que acaben en un vertedero o una incineradora.

En este contexto, les solicito que se adopte dentro de la UE una estrategia de eliminación clara para la producción total del PVC, y que se obligue al productor a asumir la responsabilidad de la recogida selectiva y posterior eliminación de los residuos de PVC.

Atentamente,

Message from Ecce :

EUROPEAN COMMISSION

Att.: Mr Krämer-Head of the waste management unit (DG ENV)

Mr Schulte Braucks-Head of the chemicals unit (DG ENTR)

200 rue de la Loi

1049 - Bruxelles

Bruxelles, le 11/12/2000

Dear Sir,

Re : PVC Environmental Issues

We are pleased to submit herewith the statement of our Association regarding the above matter and we thank you very much in advance for taking this in consideration.

We know we are somewhat late in replying to your request following the EC Public Hearing on PVC held on 23 October 2000. Please apologise for this.

We thank you in advance for your understanding.

Statement:

"The European Coil Coating Association (E.C.C.A.) is an industry association grouping over 200 members representing companies, including coaters, material suppliers, stockists and others involved in the coating of sheet metal by the coil coating process. In Europe, the coil coating industry produces more than 1 billion square meters of coated metal per annum, consuming 138,000 tons of paint of which PVC Plastisol accounts for almost 150 million square meters and 25,000 tons.

The E.C.C.A. welcomes the E.C. initiative as an important step towards a consistent and technically supportable approach to PVC across Member States. The E.C.C.A. welcomes the intention to look at the environmental impact and benefits of PVC and the studies the E.C. has commissioned.

The E.C.C.A. notes that special attention is being focussed on materials used in the formulation of some PVC materials, and also on the end of life disposal of the product.

The coil coating industry takes pride in its environmental performance, making strenuous efforts to minimise environmental hazards and to address environmental concerns at an early stage, for example member companies of E.C.C.A. no longer use Lead or Cadmium compounds as stabilizers in PVC coil coating formulations.

If substitution of PVC by alternative products is going to be considered, the E.C.C.A. considers the environmental impact of any proposed alternative materials has been studied in comparable detail.

As the E.C.C.A. only picked up this communication at a late stage we may wish to respond in greater detail later".

Thanking you again,

Yours sincerely.

On behalf of the ECCA Board of Directors

Yves Donon Paul J. Franck

President Secretary General

Message from Electricité de France:

Nous vous prions de bien vouloir trouver, ci-joint, les commentaires du Groupe Electricité de France sur le livre vert sur le PVC :

- Page 27 - paragraphe 4.5 : en région parisienne, outre le PVC, les autres sources de chlore sont les putrescibles (4%, très éloignés des 17 % indiqués), les textiles (9 %), le papier (8 %) et les combustibles (3 %).
- Page 28 : la définition du terme semi-humide est différente pour nous ; il s'agit en fait de la voie humide suivie d'une évaporation des gaz par injection.
- Page 28 : dans le cas des procédés humides, la quantité d'effluents liquides générés est de 10 à 20 kg ; le tonnage indiqué (0,4 à 0,9 kg) se rapporte en fait à la matière sèche, comme indiqué dans le tableau de la page 29.
- Page 31 : nous suggérons d'ajouter dans le 3ème alinéa les phrases suivantes : la réduction de la teneur en HCl n'aurait pas d'incidence notable car il faudrait une baisse très importante de cette teneur, à un niveau inférieur à 250 mg/Nm³. Par ailleurs, la corrosion est également liée à la teneur en soufre des fumées et à la composition des cendres volantes qui se déposent sur les parois d'échange.
- Page 33 : évolution et orientations futures : La technologie sèche avec utilisation de bicarbonate est également de plus en plus utilisée. Par contre la voie humide, du fait de la présence d'un panache important en sortie de cheminée, pourrait connaître un fléchissement. A noter que le remplacement des bouteilles PVC au profit du PET a pour conséquence d'abaisser notablement les teneurs en HCl dans les fumées.

MM. BOISSEAU et PIEROTTI (téléphone : 33 1 40 76 38 00 - Fax 33 1 45 61 46 12) se tiennent à votre disposition pour tout renseignement complémentaire.

En vous remerciant par avance de l'accueil que vous voudrez bien réserver à ces remarques, nous vous prions d'agréer, Messieurs, l'expression de nos sentiments distingués.

M. MAFFIOLO

Message from Françoise Binard :

A l'attention de M. KRAMER, Chef de l'unité "Gestion des déchets" (DG ENV)

A l'attention de M. SCHULTE BRAUKS, Chef de l'unité "Produits chimiques" (DG ENTR)

Saint-Gervais, le 30 novembre 2000

Messieurs,

Il existe des sujets que l'on aborde peu mais qui malheureusement touchent de nombreux malades. Un cancer, un accident peuvent amener des lésions internes irréparables dans les parois de l'intestin ou de l'estomac.

Les progrès de la médecine ont permis de trouver des solutions adaptées qui sauvent la vie de milliers de personnes chaque année. Des poches internes ou externes de substitution jouent le rôle des organes ainsi touchés, et ce, en toute discrétion.

Demandez à un chirurgien si de telles opérations seraient possibles sans usage systématique du PVC. Aucun autre matériel ne possède les caractéristiques physiques et techniques du PVC. A l'heure actuelle, malgré les recherches entreprises sur le sujet, le PVC reste irremplaçable.

Doit-on renoncer à soigner ces malades et à faire progresser la médecine ? Je ne le crois pas.

Veuillez agréer, Messieurs, l'expression de mes salutations distinguées.

Françoise BINARD

Message from G Haverbeke :

Mr. Ludwig Kraemer
Head of Waste Management (DG Environment)
European Commission

and

Mr. Reinhard Schulte-Braucks
Head of the Chemicals Unit (DG Environment)
European Commission

Dear Mr. Kraemer and Mr. Schulte-Braucks:

Can you please consider the improvement of new laws to regulate and discourage the usage of environment unfriendly PVC and PVC-derivates ?

Thank you very much.

Yours sincerely,

G Haverbeke

Message from Gloria Newell :

Schulte-Braucks, Head of the Chemicals Unit (DG Enterprise)

Dear Mr. Schulte-Braucks,

As an employee of a corporation focused on improving lives through modern medicine, I believe that PVC makes a significant contribution to furthering this cause. PVC products have been used in the world's healthcare system for more than 50 years in making such crucial medical products as syringes, tubes and catheters, inflatable splints, oxygen tents, disposable medical equipment...and the list goes on. No other product on the market offers the performance and safety provided by PVC.

Despite intensive research on the subject, PVC remains irreplaceable. It is the responsibility of everyone in the healthcare community to be stewards of better medicine and better health, and, thus, to support the continued production of PVC in its many medical capacities.

Thank you.

Respectfully,

Gloria Newell, PCV District Manager
Solvay Pharmaceuticals-Minneapolis District

Message from G-PLAS :

Mr E Liikanen, Commissioner for Enterprise and the Information Society, European Commission
Rue de la Loi, 200, B - 1049 Brussels

Dear Mr Liikanen

Re: EC Green Paper on PVC

G-PLAS is a small company specialising in the extrusion of rigid PVC film and PVC film laminated with polyethylene. We were founded two years ago with the concept of offering the UK market a fast and flexible service from an independent local producer. We have invested over €7 million in manufacturing facilities since start up and have established a strong position in our chosen segments of the UK market. Over the last two years 34 high quality new jobs have been created and G-PLAS is now a significant employer in our local community in South Wales. We are aware that the EC has released the Green Paper on PVC and that a strategy regarding its manufacture and waste management is being developed.

In two years G-PLAS has established over 80 regular customers who convert clear and coloured rigid PVC and PVE/PE film into an enormous range of applications in both the food and non-food industries. Typical applications cover all aspects of the food industry including presentation and collation trays, modified atmosphere packs for a wide variety of fresh and processed foods, various confectionery and biscuit packs. In all cases PVC is the material of choice by both our direct customers and their customers in turn, ranging from food processors to the leading supermarket chains.

Applications in the non-food area are extremely diverse and include DIY and hardware, toiletries and cosmetics, toys, computer games, communications equipment, medical and pharmaceutical goods.

The key driver dictating the preference for PVC varies by application but includes:

- Lightweight
- Energy efficient (57% based on salt)
- Durability and resistance to weathering
- Versatility – it can be rigid, flexible, transparent, opaque, coloured
- Safety
- Bio-compatibility
- Taint free
- Inert properties
- Ease of processing
- Design freedom
- Fire safety
- Cost effectiveness
- Full re-cyclability.

In the harsh commercial world of the packaging industry customers invest considerable time and energy in evaluating alternatives to PVC to determine whether they could possibly derive a competitive advantage. The answer is they can't – and PVC remains the material of choice because of its unbeatable price/performance package. This has remained the case over many years despite unfounded allegations against the environmental credentials of PVC.

We fully support the Voluntary Commitment of the European PVC industry that addresses environmental targets and we are committed to a sustainable approach. In this regard PVC offers major advantages versus competitive polymers in that far less scarce and unrecoverable resources are consumed in its manufacture.

Voluntary initiatives invariably involve a level of ownership and commitment that result in their being highly cost effective and transparent to all interested parties. The governments of many member states of the EC are increasingly favouring this approach across a broad spectrum of issues exactly for these reasons. We strongly support this approach. In the UK in particular the industries voluntary development of the PVC Co-ordination Group, where all stakeholders in the supply chain address areas such as Manufacturing Environmental Charter and an ECO Efficiency Code of Practice, have proven how non-regulated partnerships can work effectively. As a result an improved science-based understanding of the issues is developed by agreement – not legislation – and this delivers genuine improvements in the industry's performance.

On the basis of all known and scientifically verified information, the strong preference of all our customers and the proven record of voluntary initiatives, we feel strongly there is no case for legislation disadvantaging PVC against other polymers.

We are very proud of the position G-PLAS has established as a PVC processor in the UK and remain totally committed to the wider development of the industry. If you would like more information on G-PLAS please visit our web site: www.g-plas.com or contact me directly and we will gladly provide further information to support our strongly held positive views on PVC.

Yours sincerely

Graham L Johnson

**Greenpeace's comments and reactions to the
Green Paper on Environmental Issues of
PVC
of the European Commission**

30 November 2000

GREENPEACE

Introduction

This paper contains Greenpeace's comments and responses to the issues and questions raised in the EU Commission Green Paper on the Environmental Issues of PVC, published on 26 July 2000 as COM (2000) 469 final.

It is not meant to be a detailed submission on the manifold problems created by PVC, as these have been documented *inter alia* by the five studies commissioned by the European Commission on the problems related to PVC waste disposal, studies conducted at Member State level, diverse scientific studies or previous Greenpeace publications that are available on our website www.greenpeace.org.

The principal aim of this paper is to highlight the need for urgent action against PVC and to explain what action should be taken according to Greenpeace. Short comments will be made on those issues that were not adequately covered by the Green Paper and which add to the urgency to act against PVC.

Executive Summary

The scientific studies that support the Green Paper have highlighted a number of key hazards related to PVC, in particular during disposal. Landfilling is a ticking time bomb due to the release of hazardous PVC additives and the potential for dioxin formation during landfill fires. Incineration of PVC makes the problem even worse, as apart from the risk of dioxin formation, the hazardous residues resulting from PVC incineration may even exceed the quantities of PVC put into incineration. Recycling cannot solve the problem, as potential recycling rates under ecological criteria are projected to reach only 5% in 2020. And the problem is set to get worse, as waste quantities will increase significantly over the next decades.

The hazards of PVC throughout each step of its lifecycle always go back to the same two causes that are *specific* for PVC: it is made out of chlorine, and it requires large amounts of additives to be functional. These specific characteristics do not only create major hazards during production and use, but also leave no safe waste treatment option.

The problem of PVC can only be solved when both causes are addressed. A phase out of hazardous additives alone would only solve part of the problem. As PVC cannot be produced without chlorine, the only way to stop this hazard from growing further is to phase out the entire PVC production as soon as possible. Safer alternatives are widely available, and the full substitution of PVC with these alternatives would have a positive effect on employment.

As far as the disposal of the PVC products already on the market is concerned, it needs to be ensured that the existing problem is not made worse by unsafe disposal methods. As standard waste disposal operations have been shown to be unsafe by the EU studies, it has to be ensured that PVC is kept separate from the general waste stream to avoid its landfilling or incineration.

In conclusion, Greenpeace requests the European Commission to adopt a clear phase-out strategy for the entire production of PVC and to make producers responsible for separate collection and disposal of all PVC waste.

The PVC problem

The manifold hazards of PVC (polyvinyl chloride) throughout each step of its lifecycle always go back to the same two causes that are *specific* for PVC: it is made out of chlorine, and it requires large amounts of additives to be functional.

The chlorine trap: Pure PVC consists of 57% of chlorine. All chlorinated precursors of PVC (chlorine, ethylene-dichloride and vinyl chloride monomer) are highly toxic, and their production generates toxic wastes and emissions. The combustion of PVC - be it in accidental fires, waste incineration or metal recycling - leads to the formation of hydrochloric acid and dioxins, the latter being the most poisonous synthetic chemical known to man. When burnt in an incinerator, the chlorine content of PVC is transformed into hydrochloric acid, which needs to be neutralised by the addition of lime. This leads to the absurd effect that the incineration of 1 ton of PVC can lead to the formation of *more* than 1 ton of secondary residues - residues that are classified as hazardous waste. Finally, chlorine makes PVC recycling incompatible with the recycling of other plastics. While most of PVC's infamous high-volume organochlorine relatives, such as CFCs, PCBs, and DDT have been banned in the EU, the production of PVC continues to increase.

The additive trap: Pure PVC is useless. Hard PVC requires the addition of stabilisers; soft PVC requires the addition of softeners and stabilisers. Commonly used stabilisers are toxic lead, cadmium and organotin compounds; commonly used softeners are toxic phthalates. These additives leach out of PVC during use and disposal. The toxic phthalates used to soften PVC have become the most abundant man-made chemicals in the environment. The presence of a multitude of different additives creates incompatibilities during recycling - different PVC waste streams need to be separated from each other prior to recycling, or will otherwise lead to low-quality downcycling. The recycling of PVC containing toxic additives results in an uncontrolled spreading of these additives into new products.

In summary, the PVC building block chlorine and PVC's need for high amounts of additives not only create major hazards during production and use, but also leave no viable waste treatment option. Even if all PVC additives were non-hazardous, the key ingredient chlorine disqualifies PVC as a sustainable material.

General comments to the Green Paper

Greenpeace broadly welcomes the Green Paper as an important step towards effective action against PVC. The Green Paper would however have been improved further had it been put in the context of the ongoing work in international fora such as the drafting of the POPs Convention and the existing regional conventions for the protection of the marine environment (OSPAR, BARCON, HELCOM). The Contracting Parties to the POPs Convention are likely to agree on the objective of the reduction with the aim of elimination of certain persistent organic pollutants, starting with the "dirty dozen", which includes dioxins and furans. The OSPAR Convention agreed to the generational goal to cease discharges, emissions and losses of hazardous substances by 2020, a similar objective has been agreed by BARCON and HELCOM. These objectives cannot be reached without comprehensive action against PVC.

The substitution of PVC has not been given adequate priority in the Green Paper. Given the international context, the current EU discussions on Integrated Product Policy and the substitution principle, in particular in the review of the EU chemicals policy, Greenpeace recommends to take substitution as the starting point for the future Community strategy on PVC. This would help to see the PVC problem in the general context and would overcome the risk of getting lost in isolated policies on additives or waste management.

The environmental issues of PVC as presented in the Green Paper are almost exclusively based on the findings of the five studies commissioned by the European Commission. These studies deal with the problems of PVC waste disposal. A major problem related to PVC waste disposal is the formation of dioxins. However, the problem of dioxin formation in accidental fires, landfill fires, incineration and metal recycling of PVC was excluded from the scope of these studies. Greenpeace recommends that these issues be fully taken account of in the future Community strategy.

The findings presented on the problems of PVC waste disposal are alarming and more than sufficient to justify a full phase-out of the production and use of PVC. The justification for such comprehensive action against PVC would have been improved even further had the significant hazards related of the previous stages of the lifecycle of PVC (production, transport and use) been addressed with equal scrutiny.

The extensive environment contamination created by past and ongoing PVC production has been described e.g. at the public hearing on PVC by residents living next to the ICI plant in Runcorn. The EVC plants in Porto Marghera and Brindisi are further examples of the significant damage caused to the environment by PVC production. Unfortunately, the Green Paper refers to the problems during production only in very vague terms.

Furthermore, the Green Paper creates the false the impression that the problems of PVC production have been addressed by the ECVM voluntary commitment. However, the ECVM charter does not include the most important emission from PVC production, the highly toxic organochlorine tars, which contain almost all of the dioxin generated in the production process (van der Naald and Thorpe, 1998; UK Environment Agency, 1997). The charter furthermore only covers "normal "operation and excludes incidents, albeit they occur regularly. The best illustration of the value of the charter is the fact that a PVC plant in Venice that had been temporarily closed by the government following repeated accidents achieved 100% compliance in the audit of the ECVM charter (ENDS, 1999).

The problems related to the transportation of chlorine and VCM have not been addressed in the Green Paper, although numerous accidents have happened in the past. A study of the 1996 accident in Schönebeck, Germany, showed a statistically significant increase in chromosomal damage in the lymphocytes of the peripheral blood of the exposed group (Hüttner, 1996).

The Green Paper focuses on the environmental issues of PVC. Health related problems of PVC over its entire lifecycle (worker's exposure to VCM and hazardous additives during production and disposal, consumer's exposure to hazardous additives during use) are not fully covered. The full inclusion of

health aspects would have been desirable to highlight the full dimension of the problems related to PVC and the subsequent need to take comprehensive restrictive action. However, the partial lack of the inclusion of health issues in the Green Paper should under no circumstances be seen as an obstacle to taking comprehensive action against PVC.

Specific comments

1. Introduction

It would have been helpful had the Commission highlighted the two key differences between PVC and other plastic materials which are the very source of the problems related to PVC: its chlorine content and its need for high quantities of additives.

2. The PVC Industry and its Products

In December 1997, ECVI stated to the Commission that the PVC industry employed 200,000 people (direct and indirect). In March 2000, the PVC industry stated that they employed 530,000 people. As there was hardly any growth in the industry in that period, one of the two figures must be incorrect. It is recommended that the Commission have these figures independently verified.

The employment figures would have been clearer had an explicit breakdown of the total employment figures from the producing sector compared to the transforming sector been given. No figures are given for the latter. A subtraction of the employment figures given for the producing sector from the total employment figures given shows that 96% of the employment is in the transforming sector. A clarification that the transforming sector is also using alternative materials to a large extent or could easily shift to other materials and does therefore not depend on PVC would have been useful. Equally, it would have been valuable to show to which extent the PVC manufacturing sector itself is invested in alternative materials to PVC and would therefore not be threatened by a PVC phase out.

Employment figures given in isolation can be confusing. A Canadian study showed that employment figures in the PVC category amounted to 0.3% of total manufacturing employment, while industries manufacturing alternatives to PVC products accounted for 10.4% of the total manufacturing employment (Cheminfo, 1996).

While potential substitutes for PVC stabilisers have been mentioned (see section 3), a discussion of safer alternatives to PVC as such is missing completely.

3. The use of Additives in PVC

The Commission failed to make reference to the OSPAR strategy on hazardous substances, for which the aim of cessation of discharges, emissions and losses by the year 2020 has been agreed. As part of the OSPAR strategy on hazardous substances, a list of Chemicals for Priority Action was established. Programmes and measures against these substances have to be drawn up by 2003. The following PVC additives have been listed by OSPAR for priority action: cadmium, lead and organic lead compounds, organic tin compounds, brominated flame retardants, certain phthalates (Dibutylphthalate and Diethylhexylphthalate) and chlorinated paraffins. This illustrates not only the multitude of hazards linked to PVC, but also the fact that it has already been agreed that these substances are to be phased out.

3.2 Stabilisers

Issues for consideration

The Commission considers, on the basis of the above-mentioned analysis, that the contamination of the environment by lead and cadmium should be avoided as much as possible. The Commission is in favour of a reduction of the use of cadmium and lead as stabilisers in PVC products. A number of measures could be envisaged and should be assessed in the light of their potential environmental and economic implications.

- 1. Legislative phase out or other risks reduction measures for cadmium and/or lead with the possibility of temporary derogations*
- 2. Implementation of the voluntary commitment of the PVC industry on cadmium*
- 3. Development of further voluntary commitments for lead*

Question n°1:

Which set of measures should be implemented to address the issue of the use of lead and cadmium in new PVC? According to which timeframe?

Greenpeace welcomes the fact that the Commission confirms the need to take action against lead and cadmium and only raises the question which measures should be taken, and not whether measures need to be taken at all.

The voluntary commitment of the PVC industry only suggests phasing out the use of cadmium in the EU. In 1998, according to the Green Paper, the use of cadmium stabilisers amounted to 50t/a, whereas the use of e.g. lead and organotin stabilisers amounted to 112,000t/a and 15,000t/a, respectively. In other words, the PVC industry is prepared to renounce on merely 0.04% of the use of stabilisers that are known to be hazardous. The use of cadmium in imported products is not addressed, and no action is proposed regarding the use of cadmium, stearate and laurate. The industry intends to continue using large quantities of lead-based stabilisers, and the same has to be assumed for other hazardous stabilisers such as organotins, which are not addressed in the commitment. Implementation of the voluntary commitment of the industry alone would lead to hardly any improvement.

Given the inadequacy of the proposed measures on stabilisers in the voluntary commitment of the PVC industry, Greenpeace demands that the use of hazardous stabilisers be phased out by legislation. Such phase-outs should cover all hazardous stabilisers, and not only lead and cadmium and their compounds, to avoid lead and cadmium merely being replaced by other hazardous stabilisers, such as e.g. organotins. Such phase-outs should have no derogations and should be implemented by 2002 at the latest. However, and very importantly, phase-outs of hazardous stabilisers alone are not enough to address the problems of PVC.

3.3 Plasticisers

Phthalates are almost exclusively used to soften PVC (90% of the yearly production of 1 Mio tonnes). In order to be functional, they need to be added in high concentrations to PVC (between 10-60% of the final product weight). They are continuously lost from soft PVC products, thus making them ubiquitous in the environment today. Given the numerous toxicological problems linked to phthalates (including endocrine disrupting properties), their potential for persistence and bioaccumulation, it is clear that their use is unacceptable.

Alternative plasticisers are either poorly researched or also problematic. And they will also be lost from PVC over time – so they do not offer a solution to the problem.

The cause of this problem is the material PVC. Why make soft products out of hard materials? Alternative materials are widely available. The source of the problem is PVC's need for plasticisers, and it is for that reason that e.g. the German EPA recommended a phase out of soft PVC, and not just of phthalates.

Issues for consideration

The use of phthalates in PVC applications raises issues, described above, which could be addressed through a number of measures, including legislative or voluntary risk reduction measures. These potential measures should be assessed in the light of their environmental and economic implications.

Question n°2:

Should specific measures be taken for the use of phthalates as plasticisers in PVC? If so, when and through which instruments?

Greenpeace demands that the use of soft PVC be prohibited by 2002 at the latest with temporary derogations for those applications for which no alternatives are currently available.

4. The Waste Management of PVC

4.2 Mechanical Recycling

While the Green Paper correctly distinguished between high and low-quality recycling, it failed to reflect the conclusion of Prognos that down-cycling or low-quality recycling provides no environmental advantages and should therefore not be encouraged.

The Green Paper did not clarify that current recycling of PVC packaging waste other than bottles is not even recycling according to Prognos, as chlorine has to be removed from the process. Deducting the allegedly "recycled" quantities of PVC packaging other than bottles from the total recycled PVC post-consumer waste quantities, the resulting recycling rate stands at little more than 2%.

The Green Paper omitted the statement of Prognos that PVC can disturb the treatment and recycling of other wastes, leading to the formation of dioxins in thermal waste treatment processes (e.g. recycling of steel from end of life vehicles with PVC underbody coating), a well known source of significant dioxin emissions.

Issues for consideration:

The Commission considers, on the basis of the above-mentioned analysis, that recycling of PVC should be increased and that important efforts are therefore necessary. The recycling of PVC waste could be increased through a range of measures, which could be used separately or in combination. Their potential environmental and economic implications should be assessed. These potential measures include:

- 1. Mandatory collection and recycling targets for some relevant PVC waste streams***
- 2. Voluntary commitment of the industry to improve and finance, totally or partially, the collection and the recycling of some relevant PVC waste streams***
- 3. Recommendations to Member States with the objective of establishing and developing separate collection of PVC waste and other demolition waste***
- 4. Development of appropriate standards that allow the use of recycled PVC materials***
- 5. Marking of plastic products as a useful tool to facilitate the separation of PVC waste from the general waste stream***

Question 3:

Which set of measures would be the most effective to reach the objective of an increase of PVC recycling?

Greenpeace advocates that an increase in PVC recycling is not a meaningful objective. Most current recycling is downcycling and/or poses the problem of toxic additive transfer from old PVC products to new ones (see answer to question 4). High quality recycling without toxic additive transfer has been estimated by the Prognos report to reach a maximum of 5% by 2020. And even that would only postpone final disposal of PVC, which is fraught with environmental hazards.

The voluntary commitment of the PVC industry "anticipates" the recycling of 200,000 tonnes of post-consumer wastes in 2010. This would result in a recycling rate of 4% (compared with the current rate of 3%). Not only is this increase insignificant, the industry does not want to take any responsibility for the

collection of these wastes, which however forms the key prerequisite for any successful recycling scheme.

Looking both at the projections of the Prognos report and the voluntary commitment of the PVC industry, it is clear that recycling cannot solve the problem of PVC waste.

Greenpeace therefore demands mandatory marking of plastic products, separate collection of all PVC products when they become waste and temporary separate disposal in special landfills designed for hazardous wastes. Producers are to be held financially responsible for ensuring separate collection and disposal. For existing products, costs should be paid by the producer, for new products (until full phase out of PVC), costs should be met through internalisation into the price of new PVC products.

The recycling of PVC waste containing heavy metals raises specific issues due to the potential dilution of heavy metals into new and possibly wider range of products. Some potential measures could be envisaged to address these issues. They should be assessed in the light of their potential environmental and economic implications.

- 1. Legislative instruments to restrict the mechanical recycling of PVC waste containing lead and cadmium***
- 2. Specific conditions to this recycling, such as recycling in the same type of application, the control of the placing on the market of recyclates, the marking of the recycled products and the control of the use of heavy metals***
- 3. No specific conditions to this recycling***

Question 4:

Should specific measures be attached to the mechanical recycling of PVC waste containing lead and cadmium? If so, which ones?

PVC waste does not only contain lead and cadmium stabilisers. In addition to phthalates, soft PVC waste may also contain e.g. PCBs, chlorinated paraffins, halogenated flame retardants, bisphenol-A, biocides or fungicides (Argus, 2000). The composition of previously produced PVC applications is virtually always unknown, as "even in the same application (e.g. window profiles, pipes, films), the composition of the PVC material differs between different PVC converters having their own specific PVC compounds and between different production years" (Prognos, 2000). In other words, PVC wastes are toxic cocktails of unknown composition.

Recycling such unknown toxic cocktails into new products is unacceptable. It would not only perpetuate the mistakes of the past, it would actually knowingly sanction the continued use of substances that have already been, or are to be banned.

Greenpeace demands that the recycling of PVC wastes containing lead or cadmium or any other hazardous substances should be fully prohibited by legislative measures so as to avoid a spreading of these hazardous substances into new products.

4.3 Chemical recycling

Issues for consideration:

The Commission notes with interest the efforts described above to develop further chemical recycling technologies. In this context, potential measures could be envisaged in order to encourage these developments. Their potential environmental and economic implications should be assessed.

- 1. Further voluntary initiatives from the PVC industry*
- 2. Recommendations for targets for chemical recycling for those waste streams where mechanical recycling is not possible*
- 3. Setting of mandatory targets for chemical recycling*

Question n°5:

Which set of measures would be most appropriate regarding chemical recycling of PVC waste?

Greenpeace advocates that an increase in chemical recycling of PVC is not a meaningful objective. Chlorine is a highly toxic substance, which should not be recycled, but phased out.

Two out of three purpose-built plants in the EU have been shut down, which illustrates the economic problems linked to chemical recycling of PVC. According to the TNO report, "the most likely scenario is that chemical recycling will mainly play a role for packaging, and that blast furnaces will play a main part in this". PVC packaging waste is projected to amount to around 8% of the total PVC waste in 2020 (AEA, 2000). Not only is PVC packaging only a minor part of the total PVC waste, but it is also highly questionable to call the incineration of PVC in blast furnaces "recycling". The TNO report showed that "the main part of the chlorine forms HCl going into solution in the washer" and that "chlorine has no added value in the process, and may only contribute to problems like corrosion in the blast furnace". But PVC consists to a large extent of chlorine (14-53% in the final product). Given that the main technology for "chemical recycling" of the most eligible PVC waste stream does not actually recycle most of the PVC, it is clear that there are no benefits to be gained from chemical recycling.

To the contrary, chemical recycling may lead to the formation of dioxins and the release of heavy metal stabilisers. Given the environmental problems linked to chemical recycling of PVC, and the undesirability of recycling chlorine, chemical recycling of PVC should not be encouraged.

4.5 Incineration

The discussion of the various scenarios for the diversion of PVC from incineration is irritating, as it only gives the total amounts of PVC wastes diverted, but not the amounts of PVC still going to incineration.

The dimension of the problems caused by growing PVC waste incineration should have been illustrated by a calculation of the total amounts of flue gas cleaning residues, incl. liquid effluents, that result from the mix of incineration processes (now and as expected for the future).

The discussion on the problems of PVC incineration would have benefited from a calculation of the future chlorine content in municipal waste. Municipal waste generation can be expected to continue to increase, while composting and other recycling processes will reduce quantities going to final disposal. However, PVC amounts in waste will increase strongly, with a particular increase of rigid PVC with high chlorine content. This will result in a significant increase of the chlorine concentration in municipal waste, increasing the potential for dioxin formation and the formation of hazardous flue gas cleaning residues if these wastes are to be incinerated.

The discussion of dioxins focuses only on air emissions instead of on total dioxin formation from waste incineration. This omits the fact that significant amounts of dioxins are simply shifted to the fly ashes, creating a dioxin reservoir with unknown consequences for the future. According to the European Dioxin Inventory which served as the basis for the revision of the EU incineration directive, Dutch municipal waste incinerators emit 6 g I-TEQ to air, while generating another 350 g I-TEQ which end up in the filter ashes, which are then disposed of as filler in road asphalt. Finally, while air emissions may be reduced assuming full compliance with the emission limit of 0,1 ng/m³ in relative terms (per m³), total air emissions will increase with the increase of incineration in general.

Issues for consideration:

The Commission considers, on the basis of the above-mentioned analysis, that the incineration of PVC waste raises a number of issues. A range of measures could be envisaged to address these issues and should be assessed in the light of their potential environmental and economic implications.

- 1. Diversion of PVC waste, mandatory or not, as far as economically feasible, from incineration to preferably recycling or landfilling. This would require the introduction of collection schemes to ensure separate collection of PVC to be diverted.*
- 2. Similar diversion only for rigid PVC.*
- 3. Meeting the additional costs related to the incineration of (totally or partially), e.g. through internalisation of these costs in the price of new PVC products or direct financial contribution to operators of incineration plants.*
- 4. Encouragement of the conversion of the flue gas cleaning technologies that reduce the amounts of residues generated or allow the recycling of HCl instead of its neutralisation.*
- 5. Further research on the potential relation between PVC incineration and dioxin formation should be carried out.*

Question n°6:

Which set of measures would be the most effective to address the issues linked with the incineration of PVC waste?

Given the significant problems related to PVC waste incineration (e.g. hazardous flue gas cleaning residues, potential for dioxin formation), Greenpeace demands that PVC should not be incinerated under any circumstances.

To achieve this objective, three measures are necessary:

- a) mandatory diversion of PVC waste from incineration via separate collection to temporary separate disposal in special landfills designed for hazardous wastes,
- b) an immediate ban of all PVC products which are difficult to separate and therefore difficult to keep out of incineration,
- c) financial responsibility of the producers for the costs (including external costs) of incineration of all PVC waste, which has not been kept out of incineration despite mandatory diversion.

Meeting the costs for a) and c) should be different for existing as compared to new products:

- for existing products: costs should be paid by the producer,
- for new products (until full phase out of PVC): costs should be met through internalisation into the price of new PVC products.

4.6 Landfill

While the landfilling of soft PVC raises important issues related to migration of hazardous additives, the landfilling of hard PVC is also problematic, as it is a substantial source of chlorine input into landfills, leading to significant dioxin formation in landfill fires.

A study commissioned by the PVC industry (Mersiowsky et al., 1999) has shown that 40% of the PVC waste products that are disposed of in landfills contribute to 40% of the chlorine input to landfills. As the quantities of the products considered in this study reflect the share of soft vs. hard PVC in current waste streams, it can be extrapolated that 100% of PVC waste disposed of in landfill is likely to contribute to close to 100% of chlorine input to landfills. Landfill fires occur frequently and lead to the formation of significant amounts of dioxin. Given that PVC is almost the exclusive source of chlorine input to landfills, PVC is almost solely responsible for the dioxin formation during landfill fires.

The Green Paper makes no reference to the following finding in the Argus report: "The elimination of phthalates in leachates from landfills is, as outlined above, not completely possible with current usually applied leachate treatment methods. Technical solutions for leachate treatment are feasible, in Germany costs amount to ca. 25- 50 Euro/m³. However, due to the expected long time span of occurring emissions resulting from PVC in landfills and the technical guarantee for landfill liners the life span of the liner system needs to be prolonged and the leachate has to be monitored for long time when emissions of PVC to leachate should be eliminated completely". The impossibility of end of pipe measures to avoid contamination of the environment with hazardous PVC softeners highlight the need to substitute the use of PVC.

Issues for consideration:

The Commission considers, on the basis of the previous analysis, that the landfilling of flexible PVC waste raises some issues. A range of measures could be envisaged to address these issues. Environmental and economic implications of these measures should be considered.

- 1. Disposal of flexible PVC waste in controlled landfill sites with high emission standards as foreseen in the landfill Directive.***
- 2. Further research on the leaching or emissions of additives.***

Question n°7:

Are specific measures concerning the landfilling of PVC waste necessary? If so, which ones?

Greenpeace therefore demands that all PVC waste is diverted from normal landfills. PVC waste should be separated and disposed of temporarily in special landfills designed for hazardous wastes. Producers are to be held financially responsible for ensuring separate collection and disposal.

Meeting the costs should be different for existing as compared to new products:

- for existing products: costs should be paid by producer,
- for new products (until full phase out of PVC): costs should be met through internalisation into the price of new PVC products.

5. Other horizontal aspects on PVC

As it has been stressed before, the substitution of PVC has not been given adequate priority in the Green Paper. Given the international context, the current EU discussions on Integrated Product Policy and the substitution principle, in particular in the review of the EU chemicals policy, Greenpeace recommends to take substitution as the starting point for the future Community strategy on PVC. This would help to see the PVC problem in the general context and would overcome the risk of getting lost in isolated policies on additives or waste management.

Issues for consideration:

A number of issues regarding the environmental impacts of PVC have been identified, including the question of a horizontal approach and of appropriate instruments to address these issues. The Commission sees merit in developing a horizontal strategy on PVC. A number of instruments are available to implement such an approach. Environmental and economic implications should be assessed.

Question 8:

Which are the appropriate instruments for developing a horizontal strategy on PVC? Should a PVC substitution policy for some specific applications be envisaged? If so, how?

A comprehensive PVC directive is the only appropriate instrument for developing a horizontal strategy on PVC. Such a directive should ensure the substitution of all PVC applications, starting with short life applications, soft PVC, and products that are difficult to sort out of the waste stream. It has been shown that the full substitution of PVC does not only lead to environmental improvements, but also to the creation of employment (Prognos, 1994) and to net benefits to society (Harris, 1999). The directive should include a conversion programme of the chlorine industry.

References

AEA (2000) Economic Evaluation of PVC Waste Management - Technology.

Argus (2000) The behaviour of PVC in landfill.

Cheminfo (1996) A technical and socio-economic evaluation of options to the use of products derived from the chlor-alkali industry, Draft report for Environment Canada.

ENDS (1999) PVC industry releases factory emissions data.

Harris (1999) The Economic Importance of Chlor-alkali Industry Products and Alternative to those Products to the Canadian Economy, Chemosphere, Vol. 38 (11) 2533-2548.

Hüttner (1996) Genetic-toxicological study to assess the acute danger to a population exposed to vinyl chloride (accident in Schönebeck, June 1, 1996), Institut für Pflanzengenetik und Kulturpflanzenforschung, Gatersleben.

Mersiowsky et al. (1999) Long-term behaviour of PVC products under soil-buried and landfill conditions, Technische Universität Hamburg, Germany und Linköping University, Sweden.

Prognos (1994) Konversion Chlorchemie.

Prognos (2000) Mechanical recycling of PVC wastes.

TNO (1999) Chemical recycling of plastic wastes (PVC and other resins).

UK Environment Agency (1997) Regulation of dioxin releases from the Runcorn operations of ICI and EVC.

van der Naald and Thorpe (1998) PVC plastic - A looming waste crisis, Greenpeace.

Message from Hans-Henning Hub :

PVC ist der Werkstoff par excellence!

Kein anderer Kunststoff bietet ein derartig breites Leistungsspektrum. Mit wenigen Additiven kann der Rohstoff PVC entweder zu hochsteifen, schlagzähen Formmassen für Fensterprofile bzw für schwerentflammbare Kabelkanäle oder zu wetterbeständigen, flexiblen und bedruckbaren Klebefolien bzw zu durchstossfesten, hochtransparenten weichen Verpackungsfolien verwandelt werden.

Und das tollste an PVC ist, daß nach der Verwendung als Profil, als Folie oder als Fussboden in bereits existierenden Sammel- und Verwertungssystemen die eingesetzte Formmasse wiedergewonnen werden kann. Inzwischen gibt es sogar Einrichtungen die mit neuen Methoden PVC als komplette Formmasse aus Kunststoffgemischen herauslösen. Derartig rückgewonnene Formmassen können erneut in der ursprünglichen Anwendung sogar ohne Qualitätseinbuße eingesetzt werden.

Man zeige mir die Kunststoffe die vergleichbares in dieser Breite aufweisen können.
PVC IST PHANTASTISCH!

Hans-Henning Hub

Message from Heino Schwarzer :

Herrn Krämer
Leiter Abteilung Abfallwirtschaft (DG ENV)
PVC-Diskussion

Sehr geehrte Damen und Herren,

Ich verfolge die Diskussion über PVC mit Interesse, aber auch mit Sorge. Seit 15 Jahren arbeite ich bei der Benecke-Kaliko AG in Hannover mit dem Werkstoff PVC. Ich bin für PVC, weil dieser Werkstoff sowohl in der Produktion als auch beim fertigen Produkt ein hervorragendes Preis-Leistungsverhältnis hat und vom Markt gern angenommen wird. Ich arbeite in der Produktion und finde die Arbeit nicht ungünstiger als wenn ich mit anderen Rohstoffen arbeiten würde. Wir haben hohe Sicherheits- und Umweltstandards und stellen sicher, daß keine Umweltbelastung von unserer Produktion ausgeht.

Das Recycling von PVC in unserem Hause betreiben wir schon seit vielen Jahren über eigene Anlagen.

In unserer Firma hängen mehr als 1.200 Arbeitsplätze direkt am Kunststoff PVC. Eine Einschränkung der PVC-Verwendung ist für mich völlig unverständlich und bedroht nicht nur meine Existenz sondern auch die vieler meiner Kollegen direkt.
Bitte berücksichtigen Sie das bei Ihren Überlegungen.

Mit freundlichem Gruß

Heino Schwarzer

Message from Ian Coates :

Dear Sirs,

I am very sad that you are planning to ban PVC. You are being silly again.

My PVC windows are a big benefit to me being easy to clean and not needing painting.

If you ban PVC will I have to change my windows and who will pay for it?

You seem to spend your time at the EU dreaming up ways of damaging our ordinary lives, changing the name of chocolate, the size of bananas etc and now this latest silly idea.

Why dont you do something useful like ensuring the maximum is done to help stop poverty? All the money you waste on your silly ideas and employing lots of unelected civil servants to meddle in our ordinary lives would pay for a lot of hungry African mouths.

Message from Jack Warshaw :

Dear Madam/Sir,

As an architect practising in the field of cultural heritage conservation I welcome the intention of the European Commission to adopt a comprehensive strategy on PVC following the publication of the Green Paper on "Environmental issues of PVC".

The scientific studies that support the Green Paper have highlighted a number of key hazards related to PVC, in particular during disposal. Landfilling is a ticking time bomb due to the release of hazardous PVC additives and the potential for dioxin formation during landfill fires. Incineration of PVC makes the problem even worse, as apart from the risk of dioxin formation, the hazardous residues resulting from PVC incineration may even exceed the quantities of PVC put into incineration. Recycling cannot solve the problem, as potential recycling rates under ecological criteria are projected to reach only 5% in 2020. And the problem is set to get worse, as waste quantities will increase significantly over the next decades.

The hazards of PVC throughout each step of its lifecycle always go back to the same two causes that are specific for PVC: it is made out of chlorine, and it requires large amounts of additives to be functional. These specific characteristics do not only create major hazards during production and use, but also leave no safe waste treatment option.

The problem of PVC can only be solved when both causes are addressed. A phase out of hazardous additives alone would only solve part of the problem. As PVC cannot be produced without chlorine, the only way to stop this hazard from growing further is to phase out the entire PVC production as soon as possible. Safer alternatives are widely available, and the substitution of PVC with these alternatives would have a positive effect on employment as has been shown by studies in Germany and Canada.

As far as the disposal of the PVC products already on the market is concerned, it needs to be ensured that the existing problem is not made worse by unsafe disposal methods. As standard waste disposal operations have been shown to be unsafe by the EU studies, it has to be ensured that PVC is kept separate from the general waste stream to avoid its landfilling or incineration.

In conclusion, I therefore urge you to adopt a clear phase-out strategy for the entire production of PVC and to make producers responsible for separate collection and disposal of all PVC waste.

Yours faithfully,

Jack Warshaw

Message from José Rafael Mancho Guerrero :

Excmo. Sr. D. Ludwig Krämer
Jefe de la Unidad de Gestión de Residuos
DG Medio Ambiente
Comisión Europea
Rue de la Loi, 200
B-1049 BRUSELAS

Monzón, 30 de Noviembre de 2000

Excmo. Señor:

Como empleado de una Fábrica productora de resinas de PVC, pero más como ciudadano comunitario, considero de mi obligación el puntualizar algunos aspectos del documento "Green Paper", elaborado por la Comisión Europea y presentado a consulta pública el pasado 26 de julio. Quisiera dejar constancia de mi conformidad a todas y cada una de las observaciones presentadas por el Presidente del Comité Ejecutivo del Foro Ibérico del PVC con respecto a las ocho preguntas formuladas en el "Green Paper".

La condición de culpables que vivimos los trabajadores de una empresa productora de resinas de PVC, en el que dicho producto está siendo atacado indiscriminadamente, no es entendible. Es por ello que todos, y principalmente los trabajadores de dicha industria, deseamos que se zanje de una vez por todas esta situación.

Es de todos conocido, la cantidad de estudios elaborados sobre el PVC y con conclusiones bien diferentes en la mayoría de los casos. No cabe duda que el PVC, dado el reclamo social que se le ha hecho tener, es un producto ampliamente estudiado, pero se sigue cuestionando. Entiendo que la actual situación de "clorofobia" en que nos hallamos, hace que toda molécula clorada sea considerada proscrita sin ningún cuestionamiento más. Todo ello atenta a los razonamientos más simplistas, pareciendo que siempre se está jugando con el miedo a lo desconocido o a lo que no podemos ver o controlar.

Quiero hacer hincapié sólo en una cuestión, la cual entiendo que es el instrumento básico que debe facilitar la decisión sobre una actuación sobre cualquier producto y en particular el PVC; el análisis del ciclo de vida, el cual puede llevar integrado un análisis de riesgos para la seguridad y salud humana.

El análisis del ciclo de vida (LifeCycleAssessment), como su nombre indica, es una herramienta actualmente muy bien conocida para la gestión medioambiental, la cual se basa en el recuento de cargas ambientales. Una prevención efectiva de la contaminación está basada en un profundo conocimiento de todos los efectos adversos al medioambiente durante la vida de un producto.

Sirva esta introducción para observar que en el "Green Paper, únicamente se centra en una parte del ciclo de vida del producto (la gestión de residuos), obviando el resto de la vida del producto. Podría intuirse que la gestión de residuos es la única faceta del análisis del ciclo de vida del PVC que interesa, desconociendo si el resto de la vida del producto no aporta cargas ambientales significativas, o por el contrario éstas se han obviado.

Por otra parte, dadas las preguntas del "Green Paper", parece que la gestión de residuos se base exclusivamente en el reciclaje. Habrá que analizar qué cargas ambientales lleva consigo el reciclaje, ya que dependen una serie de factores que entiendo se obvian (centros de tratamiento, distancias a dichos centros, viabilidad económica, políticas, etc.)

Para terminar mencionar también la sistemática de la evaluación de riesgos, en la cual una vez identificado el riesgo (o sus factores de riesgo), se evalúa, y en función de la magnitud del riesgo y si éste no se considera tolerable, se aplican medidas a fin de disminuir o paliar el riesgo. Parece que en el "Green Paper" se ha realizado la sistemática al revés, ya que parece que se deban tomar medidas antes de haber evaluado la necesidad de tomarlas, basándose únicamente en magnitudes de equivocado interés social.

Esperando que los comentarios expuestos sean aprovechados en la medida que lo considere oportuna.

Atentamente,

Fdº.: José Rafael Mancho Guerrero

Message from :

Juan Carlos	Miguel Angel	Johnston	Dhaval Patel
Lehtola	Päivi Suihkonen	Sanchez	Ling
Palau	Palmer	Brattlund	Chrysaphi-Vaklava
Quintas	Bellanova	Griffin	Bertani
Worland	Gurley	Román Bustos	Laine
Coffey	Parra	Desmarais	Villac
Diaz Aguado	Pedro Diaz Aguado	Martin Nova	Louise Edge
Giulio di Lernia	Marc Choucair	Antonio	Linda Harty
Jason Fieldwick	Marianne Verellen	Jo Beecham	German Espinal
Henrik Ohlsson	Mathias Janssens	Roch Langlois	Cecilia Fernandez
Pawel Gluszynski	Ulrike Berghahn	Erica Vanessa	Maggiorini

The Environment Society (Aust),:

Mr. Ludwig Kraemer
Head of Waste Management (DG Environment)
European Commission

and

Mr. Reinhard Schulte-Braucks
Head of the Chemicals Unit (DG Environment)
European Commission

Dear Mr. Kraemer and Mr. Schulte-Braucks:

I welcome the intention of the European Commission to adopt a comprehensive strategy on PVC following the publication of the Green Paper on "Environmental issues of PVC".

The scientific studies that support the Green Paper have highlighted a number of key hazards related to PVC, in particular during disposal. Landfilling is a ticking time bomb due to the release of hazardous PVC additives and the potential for dioxin formation during landfill fires. Incineration of PVC makes the problem even worse, as apart from the risk of dioxin formation, the hazardous residues resulting from PVC incineration may even exceed the quantities of PVC put into incineration. Recycling cannot solve the problem, as potential recycling rates under ecological criteria are projected to reach only 5% in 2020. And the problem is set to get worse, as waste quantities will increase significantly over the next decades.

The hazards of PVC throughout each step of its lifecycle always go back to the same two causes that are specific for PVC: it is made out of chlorine, and it requires large amounts of additives to be functional. These specific characteristics do not only create major hazards during production and use, but also leave no safe waste treatment option.

The problem of PVC can only be solved when both causes are addressed. A phase out of hazardous additives alone would only solve part of the problem. As PVC cannot be produced without chlorine, the only way to stop this hazard from growing further is to phase out the entire PVC production as soon as possible. Safer alternatives are widely available, and the substitution of PVC with these alternatives would have a positive effect on employment as has been shown by studies in Germany and Canada.

As far as the disposal of the PVC products already on the market is concerned, it needs to be ensured that the existing problem is not made worse by unsafe disposal methods. As standard waste disposal operations have been shown to be unsafe by the EU studies, it has to be ensured that PVC is kept separate from the general waste stream to avoid its landfilling or incineration.

In conclusion, I therefore urge you to adopt a clear phase-out strategy for the entire production of PVC and to make producers responsible for separate collection and disposal of all PVC waste.

Yours sincerely,

Message from Kathy Cooper :

Mr. Ludwig Kramer
Waste Management Unit
DG Environment
Wetstraat 20
B-1049 Bruxelles, Belgium
Fax: 32-2-299-1068
Email: env-pvc@cec.eu.int

Mr. Reinhard Schulte-Braucks
Chemicals Unit
DG Enterprise
Wetstraat 20
B-1049 Bruxelles, Belgium
Fax: 32-2-295-0281
Email: env-pvc@cec.eu.int

Gentlemen:

Thank you for the opportunity to comment on the European Commission's Horizontal Initiative and Green Paper on PVC.

I am a worker in the plastics industry and I'm committed to improving the environment. I believe that plastics including PVC add great benefit to society. Products made from PVC help people by saving lives, improving efficiency, and conserving resources - an environmental plus. My company has been doing its share to reduce emissions, improving safety, and addressing the recycling of our products. We're proud of our record and progress toward continuously improving.

I am concerned that the EC may be studying PVC in preparation for singling it out as a material needing special attention when the alternatives to PVC in many applications may be worse for people and for the environment. I urge you to compare vinyl to its alternatives before making a decision.

The European PVC Industry has voluntarily committed to a number of actions that will address the questions raised in the Green Paper. The Voluntary Commitment is a progressive approach that could well set an example for other industries to consider.

Because the actions you take will affect PVC worldwide, I will be interested in your decisions.

Sincerely,

Kathy Cooper
PolyOne Elastomers

Message from Marc Jauniaux :

Je suis en faveur du PVC.

Messieurs,

Permettez-moi de réagir à votre livre vert au sujet des problèmes environnementaux relatifs au PVC.

Le PVC depuis son invention a très largement contribué au bien-être de l'humanité par l'intermédiaire de toutes ses applications.

S'il est depuis quelques années décrié, ce n'est que par l'intermédiaire de groupements écologiques qui abusent de slogans démagogiques. Puisque le PVC est en fin de vie, laissez-le tranquillement terminer son existence.

Laissez aux ingénieurs et industriels le temps de lui trouver des matériaux de substitution. Ce que les écologistes oublient de dire c'est que depuis sa création le PVC a été un formidable matériau plastique contenant relativement peu de matière issue du pétrole (43 %), que plus de la moitié du PVC est utilisé en construction avec une durée de vie de plus de 50 ans, que le PVC, comme tout autre matériau plastique, se recycle très bien.

Que proposent les écologistes pour remplacer le PVC ?? du bois ? Il faut donc "déforester" davantage. Du bois qu'il faut entretenir avec peintures et solvants ? Avez-vous vérifié avec autant de hargne l'effet sur l'environnement de ces produits ? Non, laissez le PVC terminer le plus dignement possible sa longue vie. Le consommateur lui-même décidera de ce qu'il doit faire. L'industriel aussi. Et de grâce, ne légiférez qu'en cas d'extrême nécessité....L'Europe qui se veut un continent de liberté croule sous les lois.

Je terminerai par un dernier commentaire :

Comment pouvez-vous, à partir de ce que vous appelez une vaste consultation publique, collecter une opinion démocratiquement valable sur l'avenir du PVC ?

C'est absolument par hasard que j'ai trouvé votre livre vert sur internet.

C'est absolument par hasard que je vous réponds.

Ce ne sera certainement pas par hasard que vous recevrez des milliers de lettres en défaveur du PVC, issues d'organismes comme Greenpeace toujours à l'affût de ce genre de manifestation.

Marc JAUNIAUX

Ingénieur civil CHIMISTE (et fier de l'être).

Message from Milan Havel :

Dear members of the European Commission,

We ask you to enact a ban on PVC. We consider it as the most important and probably the only way to lower the emissions of POPs (especially dioxins) in the Czech Republic and many other eastern European countries.

In our countries, the problem is the high percentage of individual household furnaces. Since people do not respect the prohibition on burning waste in households, the Czech Ministry of the Environment estimates that up to 60% of total dioxin emissions in the country are produced from households alone. This means approximately 400 gTEQ/year.

The situation will not change in any significant manner even with the implementation of the EU directive on landfilling, which our government intends to meet by constructing 8-15 large waste incinerators. First, this will hardly affect the household combustion of waste (on the contrary, the high fees associated with waste incineration will motivate people to destroy their waste by themselves) and, second, their construction will elicit wide public protests.

It needs to be noted that in Czech Republic, according to the State Health Institute (SZU), the acceptable daily intake (ADI) for dioxins is already today exceeded many times over (the current estimated dioxin intake is 12.3 pgTEQ/kg bodyweight/day).

That it is necessary to adopt a ban on PVC is clearly demonstrated by the legislative development in Czech Republic. The Waste Law (no. 125/1997 Coll.) included a ban on PVC packaging. However, because of the approximation of Czech legislation with the EU legislation, the ban was dropped at the beginning of this year.

Many thanks for considering the aforementioned arguments. We believe that you will take the right decision in favor of public health, not private profit.

Milan Havel

Children of the Earth, Program for Clean Earth, Air and Water

The Czech Republic

Message from Permapack AG :

Att.: Mr. Krämer, Head of the waste management unit (DG ENV)
and: Mr. Schulte Braucks, Head of the chemicals unit (DG ENTR)

Re: Green Paper on Environmental issues of PVC

Although a little late we like to inform you of our interest regarding PVC and its continuance.

We are a producer of PVC-films for the packaging of food. Approx. 60 employees (of 240 in total) are involved in this business. We have been selling PVC-films now for more than 30 years. Our own producing started in 1976.

PVC-film offers a lot of advantages, such as: An excellent memory effect; it is self-adhesive on all food trays; perfectly transparent with a high gloss; anti-fog finished; it can be printed. The material has good mechanical strength and excellent stretch and also a wide sealing temperature range. It is suitable for many different functions, as catering, hand-wrap or machine film.

As far as we are informed and from our own experience - we are producer of a Non-PVC-film too - no other material offers such a wide range of good properties.

We recommend therefore to authorize PVC also for the future.

Thanking you for your support, we remain

Truly yours
Permapack AG
Th. Hansmann

Message from Prof. Dragaun :

Sehr geehrte Damen und Herren,

vorerst möchte ich festhalten, dass im vorgelegten PVC-Grünbuch eine sehr sachliche Darstellung des aktuellen Standes der PVC-Situation gelungen ist.

Aus Sicht unseres Prüfinstituts, das im Bereich der PVC-Produkte hauptsächlich mit solchen aus dem Bereich der Langzeitanwendung (30 bis 50 Jahre Mindesteinsatzdauer) beschäftigt ist, liegen umfangreiche positive Erfahrungen zur Funktionstüchtigkeit der PVC-Produkte im Bereich der Wasserversorgung, Abwasser- und Kanalisationstechnik, Kabelschutztechnik, Bau- und Fensterprofile, etc. vor.

Zur Frage Nr. 1 möchte ich seitens der österr. Gegebenheiten mitteilen, dass der Einsatz von Cd bei Kunststoff-Formmassen gemäß der CD-Verordnung bereits seit 1.1.1994 untersagt ist. Eine analoge Maßnahme wäre sicherlich auch in anderen europäischen Ländern anzustreben. Der Gedanke zur freiwilligen Selbstverpflichtung scheint uns dabei ein Schritt in die richtige Richtung zu sein.

Zur Frage Nr. 2 möchte ich einen Hinweis auf die Möglichkeit eines verstärkten/geforderten Einsatzes von alternativen Weichmachersystemen zu den Phthalaten geben. (Polymerweichmacher, Naturstoffsysteme)

Zu Frage Nr. 3:

In Österreich sind derzeit Selbstverpflichtungssysteme zum Sammeln und Recyceln in Verbindung mit nationalen Qualitätsmarken für die jeweiligen Produktgruppen z.B. auf dem Gebiet der Wasserwirtschaft (ÖVGW-Qualitätsmarke, GRIS-Gütezeichen, etc.) mit Erfolg eingesetzt.

In einigen Produkt-ÖNORMEN ist direkt auf die Einsatzmöglichkeit von PVC-Recycling-Werkstoff hingewiesen.

Zur Frage Nr. 5 erscheint die Abgabe von Empfehlungen von Zielmengen für das chemische Recycling, die aber bei entsprechender Einhaltung auch eine Bonifikation des Unternehmens erbringen müssten, als erstrebenswert.

Zu den Fragen Nr. 6 und 7 erscheint eine Umlenkung des PVC-Abfalls (Maßnahmen 1 und 2) langfristig am günstigsten Probleme mit der Verbrennung des PVC-Abfalls auszuräumen.

Eine Umlenkung auf Deponie erscheint aus Sicht der in Österreich mit dem Jahre 2004 in Kraft tretenden Deponieverordnung BGBl. 164/96 dabei grundsätzlich problematisch.

Zu Frage Nr. 8:

Kurzlebige Verbrauchsgüter aus PVC sollten möglichst rasch mit übernationalen Übereinkommen substituiert werden.

Wir hoffen damit Ihrem Wunsch zur Stellungnahme entsprochen zu haben und verbleiben

Mit freundlichen Grüßen