



Roy T. Gottesman
Executive Director

September 3, 1991

To: Vinyl Institute Executive Board
Vinyl Institute Company Representatives

RE: Update on European Environmental Developments Relating to PVC

I am once again pleased to be able to provide you with a copy of the "Update of the PVC Related Environmental Developments in Europe" as of July 1991. This report has kindly been provided by Rolf Buehl of EVC and we thank him for this.

You will find it useful in understanding the most recent environmental and recycling developments in Europe.

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From : R. BUEHL

August 7, 1991

RB07083/OL

To : see circulation list

UPDATE OF THE PVC RELATED ENVIRONMENTAL DEVELOPMENTS IN EUROPE
AS PER JULY 1991

NOTE

This periodical update has been put together for our employees, customers and selected members of the industry. It covers the current, but constantly "moving" environmental debates in Europe concerning PVC to encourage an exchange of information. Tomorrow some major developments may have changed in one or the other direction. Therefore, this and other updates on environmental developments should only be seen as a "spotlight" that needs regular adjustments to present the trends.

We do not recommend that any part of this note is quoted out of context or distributed, since this could lead to misunderstandings.

Last "update" : December 1990

CTL007610

1. AUSTRIA

The draft ordinance on PVC, to be seen in context with the revision of the Austrian chemicals law, is still in its (unofficial!) version from November 1990 :

- * Residual VCM levels in all PVC products not to exceed 1 ppm by January '91
- * Limitation on heavy metals, i.e. cadmium and barium phased out by January '92. Exceptions are calandered and plastisol products, where phasing out is delayed until January 1994.

The new Environmental Minister has not made up her mind on how to progress this subject. Except for the barium position, industry is in support of this ordinance. The barium phase out, which Austria raises as the first country in Europe (or worldwide?), is still strongly opposed by the processing industry, challenging the hazardous claims and the timescale to find effective alternatives.

API, the local industry working group, is now in full shape and has defined its activity programme. PR- and advertising to reposition PVC in the public domain is one of the key activities. As a part of this, the advertising campaign, using Albert EINSTEIN as the copy platform and test run in autumn last year, has been adjusted according to the positive responses for publication this year in the major weekly magazines throughout the country. A sample is shown in Appendix 1.

RECYCLING

The other core activity for API is recycling, with the target to develop regional initiatives into a nationwide concept, preferably for all plastics. RWE Entsorgung has been contracted to come forward with such a nationwide disposal concept for all PVC (plastics) waste, including the options for recycling. Results from this analysis should become available in spring 1992.

In the meantime, the recycling activities as already initiated by the PVC industry, continue and cover windows, pipe, flooring, credit cards and municipal plastic waste in the HALLEIN-SALZBURG area.

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2. BELGIUM

Overall situation still rational, with media reports from Holland showing less influence in the public debate.

RECYCLING

In the Flemish Region, an agreement was reached between industry and the Flemish Region Ministry on the foundation of a none-profit-making association for prevention and recycling of packaging waste. Kerbside collection will start this year, with a trial period for which no recycling targets are fixed. They follow experience from the trial period.

Brussels and the Wallon Region are drafting a similar arrangement, which contains a 60% recycling target for plastic packaging, to be achieved by the year 2000.

SOLVAY, jointly with ERRA, is still developing the collection of PVC bottles. Some 110 cities are now connected to this industry funded collection and recycling scheme.

3. DENMARK

The series of consultations between the Environmental Minister and the plastics trade organisations "to voluntarily substitute PVC" resulted in an agreement covering :

- * to have 85% of PVC packaging substituted or reduced from incineration by the year 2000
- * to have 77% of waste from PVC longlife products (pipe, profile, cable, flooring, etc...) recycled by the year 2000
- * to have Pb stabiliser substituted "wherever technically possible" by the end of 1993

This "voluntary agreement", signed in April, was drawn up in spite of strong protests from the Danish PVC Committee and APME-DK. The agreement is based on a number of assumptions, to which the PVC industry provided facts and counter arguments (for more background see previous periodical reports on DK).

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Not surprisingly, the public reaction is in favour of the agreement. but GREENPEACE would have liked the Minister to take even sharper actions, i.e. a total ban on PVC applications.

Since "other parts" of the plastics industry were willing to sign this agreement, APME has been asked to establish a "code of practice" for this type of voluntary agreements and its discriminatory elements.

Following the advice from APME, the PVC industry will continue to defend its product through whatever route is left open, including the advice for legal actions.

The Environmental Protection Agency (EPA), headed by the Environmental Minister, is now drawing attention to an all packaging waste regulation and published its strategy in June. With the exception of PVC, which is described as an "environmental problematic material", all other plastic packaging materials and their disposal methods are not condemned. The reports puts emphasis on quantitative reductions and requests industry to cooperate in "cradle to grave" investigations. This is an opportunity to reposition PVC.

The European video "PVC FACTS and VIEWS", prepared by a Danish filmstudio and sponsored by APME/ECVM is now available in a long and short version in English and Danish. Translation work for other languages have already started. The video, now in the hands of all PVC producers, should be given widest distribution because of its high quality information level and the profession behind it.

4. FRANCE

Overall situation still quiet concerning "public debates on PVC", with only occasional media reports "with a negative tone on PVC".

Legislative developments concerning waste management are based on constructive dialogues between the relevant Ministries and industry. Priority is given to the packaging sector to come forward with a counter proposal to the EC Draft Directive on Packaging Waste, which in the opinion of the French industry follows too closely the German Packaging Ordinance. An underlying principle is to ensure the free movement of packaging. Aspects under discussion are :

- * "valorisation" with its alternatives for energy recovery, material recycling and re-use
- * targets for "valorisation"
- * ban on packaging materials which cannot be recovered

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RECYCLING

PVC bottle recycling in France is now organised by "GECOM PVC RECYCLING", an economical interest group created by ATOCHEM, SOLVAY, SHELL and the three mineral water producers EVIAN, VITTEL and PERRIER. This group organises selective collection, e.g. "Operation PELICAN", guarantees a price of collected PVC bottles for three years, improves recycling technologies and develops outlets for the recycled material.

Likewise in Germany, the French car industry is now pushing for recycling, too, and asked their component suppliers to cooperate.

5. GERMANY

The "TOEPFER Packaging Ordinance" has passed the Federal Chamber ("Bundesrat") in May, and was subsequently published in June, thereby becoming a law. During this process, various attempts were made to single out PVC, but failed. In an amendment to the ordinance the Bundesrat requests the Government to substitute "environmental problematic" packaging demand, with a definition to follow by the end of this year. There is, as usual now, some speculation that PVC may fall into this category.

A first industry reaction, initiated by the trade, was the foundation of the DSD ("Duales System Deutschland GmbH") in December last year to organise the collection of all sales packaging under the "green point" funding scheme (for more background, see previous periodical report).

The plastics packaging industry followed in February with the foundation of the VGK (Association for the Recycling of Used Plastic Packaging GmbH) to cooperate with DSD and to provide, on behalf of the plastics packaging industry, the recycling guarantee for all plastic materials and the funds for pre-sorting and recycling. A much simplified scheme of what the major relations and tasks for DSD/VGK are, is shown in Appendix 2 A, B and C.

Beyond all question, for those already directly involved with the setting up of this more than complex scheme, this is a "nightmare" and much is still to be seen, and first to be understood of how all this is going to work in practice : the targets for the German plastics industry are to have some 60 ktons (approx. 9%) by 1.1.93 and some 450 ktons (approx. 64%) of the plastic packaging waste recycled by 1.7.95. Recycling of plastic packaging under the "green point" scheme will now start in August in selected territories, with the intention to cover "step by step" the whole of Germany.

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The IG Chemie (union of the chemical industry) followed closely the public debate with all its PVC discriminations. A working group was installed to define their own position. It concluded that the negative publicity about PVC does not meet the facts and they are going to support the industry in their attempts for a factual, less emotional debate.

An "unofficial (?) PVC status paper", originated by the Environmental Office (UBA) in Berlin, has been circulated to a number of communities, repeating all negative claims as they are well-known to us. Following a series of direct talks between industry experts and UBA officials, they now "agreed to reconsider their position".

In the way the "Green Party" lost its power at a federal level, they now concentrate their anti-PVC efforts on the next lower political levels, i.e. in the various countries and communities. Within this movement the request for "PVC free zones" is coming up again, but facing today a much better organised industry to counter such motions.

Analysing the "PVC climate" in Germany today, it is extremely difficult to conclude, whether or not the "summit" is reached. Whilst on the one hand the legislative developments will most likely move in favour of PVC, the "industry campaign for green products" is still at an early start. The poor public image puts PVC in a very bad starting position. AG-PU, together with the VKE is reacting with a "repositioning campaign", covering all plastics, but with an emphasis on PVC and its recyclability. First full page adverts are appearing from July onwards in all major print media. One of the first adverts with the theme "recycling PVC windows" is shown in Appendix 3.

RECYCLING

The key challenge for the PVC industry as part of the entire plastic packaging industry is "to act more than talk" and to move towards the packaging recycling targets. Clearly, the targets are extremely ambitious and unlikely to be achieved within the given timescale. Whilst technologies for the separation into generic polymers and the processing as mixed feedstocks are much advanced, the focus is now on economics and market development. The VGK will play a key role to provide subsidies into recycling plants, whilst the industry must concentrate their efforts on product and market development. The raw material suppliers are forced to take an active role by operating such plants, at least in the initial phase. Communal recycling plants in existence, such as the EVC-VKW Staufen operation in the Freiburg area, or those "still on paper" (HOECHST-WIESBADEN, EVC-WILHELMSHAVEN, EVC/SOLVAY/SHELL-BIELEFELD) are just an early selection of what is to become a "coordinated network of recycling plants with product supplied by the DSD/VGK scheme.

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Progress is being made with the PVC flooring consortium (AG-PR) to fund collection and recycling of used PVC flooring. This concept is seen as a model by other PVC application sectors such as windows, wall coverings and roofing membranes to follow shortly. The PVC window industry already launched its concept and is starting now. Through co-extrusion the feedstock from used window profiles is extruded back as a core material into new window profiles.

6. HOLLAND

The motion by the Green Party from autumn '90 to ban PVC for shortlife applications was rejected by the majority of the Parliament in June. Instead, following the series of consultation rounds between the Environmental Ministry (VROM) and the packaging industry (SVM = Stichting Verpakking en Milieu) a "packaging covenant" was signed in May. The voluntary agreement contains :

- * Full "chain" responsibility
- * PRIORITY ORDER :
 1. Prevention
 2. Re-use
 3. Incineration with energy recovery
 4. Incineration
- * PREVENTION + RE-USE

For period 1991 to 1994 : "stand still principle"

By year 2000 : no more packaging quantity than in reference year 1986, "preferably 10% less by weight"
- * RECYCLE

By end 1995 : min. 40% of non-reusable packagings (incl. plastics) to be recycled

By year 2000 : dto, but min. 60% to be recycled
- * LANDFILL

By end 1995 : to have dumping waste reduced by 40%
- * Avoid usage of non-recyclable materials
- * Progress substitution of PVC by alternatives "less damaging to the environment"
- * Industry Ministry shared commission to monitor the targets

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There is some similarity with the voluntary agreement in DK, in that once again, despite the strong opposition from the PVC industry, the "other parts of the plastics industry" agreed to discriminate one product. As in the case of DK, APME is forced to come forward with a "code of practice".

However, the damage from the "para-legal" PVC statement is there. The arguments backing this statement are weak and have been thoroughly disputed beforehand. The PVC industry is trying all its routes open for a correction. Part of this approach is to request a definition "of what alternatives, less damaging to the environment", stand for. This, once again, highlights the urgent need for creditable ecobalances.

The Dutch Government is now drawing attention to an "all plastic waste covenant" and has invited industry to cooperate. Priorities are waste prevention and recycling.

The Dutch chemical society (VNCI) and the Ministries for Environment and Industry have contracted a study to MC KINSEY to develop a method for integral management of the chlorine chain. The first part of the study evaluates 3 selected "model substances" : methylene chloride, polycarbonate and HCFC 123. In the second part PVC will be investigated.

Influenced by the outcome of the "packaging covenant" the Dutch PVC industry decided to postpone its advertising project.

RECYCLING

Activities concentrate on pipe (FKS, a consortium representing the leading pipe manufacturers in NL has started to fund collection and recycling of used PVC pipes), building profiles incl. windows, and a pilot project to recycle municipal plastic waste (incl. PVC) for the Dordrecht commune.

Altogether, the Dutch plastics industry is increasingly confronted with the obligation to recycle its material after use at high levels, a development almost in parallel of what is happening in Germany.

7. ITALY

"LEGA AMBIENTE", an environmental protection group consisting of highly reputable representatives of the public, is meeting with industry to investigate the chlorine and PVC chain. Following an "emotional" start, the continuing dialogue has become much more constructive.

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RECYCLING

Since January, Law 475 (published January 1989) is in force to have beverage bottles recycled. Targets are to have by the year 2000 40% of the plastics bottles recycled, of which half (20%) by material recycling, the half allowed by incineration with energy recovery

Polymer suppliers are paying a 10% "recycling tax" on the polymer feedstock going into bottle manufacture, to finance recycling schemes. If targets are not achieved by 1992, an extra "levy" = approx. 2000 Lira/kg polymer feedstock, will be raised.

The TECOPLAST bottle recycling plant (GOVONI/EVC/ENICHEM/SOLVAY joint venture) is developing well. They moved into new buildings and extended their activity to colour separation. The recovered PVC feedstock is sold to a pipe manufacture, for conversion into conduit. Much more of this type of recycling plants need now to be build in Italy to handle the volume.

8. LUXEMBOURG

In April, industry and government signed an agreement to recover within 3 years 70% of the packaging waste. Kerbside collection, feeding 2 sorting centres are part of the scheme agreed between the two parties. Still open are economics, meaning who covers the collection costs. The early aggressive tone against PVC has gone and there is no discrimination of PVC in this document.

9. NORWAY

Nothing new to report.

10. SPAIN

Nothing new to report.

11. SWEDEN

Contrary to many media and consultancy reports, there are no legislative plans against PVC. The agreement from 1988 between the packaging industry and the Environmental Ministry to search for PVC alternatives still causes confusion and is often used against PVC.

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The new chemical law requests, with regard to PVC and its feedstocks, voluntary actions to reduce or terminate mercury based technology for chlor-electrolysis, heavy metal stabiliser (lead, cadmium), organotin compounds and chlorinated paraffins.

GREENPEACE is heading the anti-chlorine and PVC campaign, but there are some positive signals that from within other environmental protection groups criticism is raised opposite the GREENPEACE actions.

Despite all the negative reports that "VOLVO becomes green and is going to ban PVC" - the truth is on the contrary (or in the middle?) : they fully appreciate the benefits PVC brings as a low weight material. Their lifecycle analysis also ranks PVC high amongst other plastics, but VOLVO is afraid to have such conclusion published at this stage.

IKEA, the well known furniture retail chain, has come to similar conclusions, but will not go public with their findings.

The NORSK HYDRO publication "Aspects on PVC as a product and as waste", resulting from an environmental audit when applying for a permit to expand capacities, is given wide circulation, with favourable comments by the media.

12. SWITZERLAND

The law to ban PVC from use as beverage bottles becomes effective from November 1, 1991, this in case the industry fails to have this ban lifted or corrected. Negotiations between the "PVC Bottle Recycling CH GmbH" (ATO, EVC, SOLVAY and the three French mineraliers, EVIAN, PERRIER, VITTEL) and the Environmental Minister are intense, but still open for its outcome.

The industry offer concentrates on :

- * recycling of PVC at equal levels as PET, i.e. 35%
- * take back salts from incinerators for recycling (based on experience made in Germany) and contribute to the extra costs associated with HCl neutralisation

Equally, the EC-DG III is in direct talks with the CH Government to secure the "free trading of products" principle, but again it is too early to comment the outcome of these consultations.

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The long awaited ecobalance on packaging materials, covering alu, glass, paper, cardboard, PE, PP, PS, PVC and PET, has now been published by BUWAL under Report No.132 (February 1991). It finishes with the ecological impact data per kg of packaging material and, for plastics, excludes recycling (not practised!). Industry is now going to use these data as a platform to calculate "packaging systems", i.e. bottles and thermoformings. Results from these "much more valuable calculations" will become available by autumn/end '91.

RECYCLING

Collection and recycling of PVC bottles, organised and funded by "PVC Bottle Recycling GmbH" already started with the installation of skips in the Friebourg commune. The PET recycling industry is still hesitant to cooperate.

13. UK

Dust has settled over the "cling film issue", covered extensively in the last December update.

In spring '90 an expert working group was put in place by the Health Authorities to investigate the hypothesis that gases from additives as used in plasticised PVC for mattresses is a cause of "Sudden Infant Death Syndrome" (SIDS, also known as "COT DEATH"). This expert group now published their conclusions in June by stating, that there is no scientific evidence to support the claim.

The "LANDBANK Report" on packaging materials, commissioned by the supermarket Gateway, was given great attention by the public media because of its negative conclusions on plastics, and on PVC in particular. (LANDBANK is an Environmental Consultancy, lead by an ex-GREENPEACE Manager.) Because of its poor research it became heavily criticised by many sections of the packaging industry.

To correct the picture and to offer dialogue, a number of meetings between industry experts and LANDBANK representatives have taken place since then. One focal area for dialogue is the chlorine-PVC chain in which both parties make "an attempt to revise the report for shared signatures".

During a recycling conference in London in March, MARKS & SPENCER, a leading retailer, publicly stated their commitment to PVC as an environmentally acceptable packaging material (Appendix 4).

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In May, the Department of the Environment published its "Draft Waste Management Paper-Recycling" for consultation with industry. The recycling target for household waste is 25%, achieved by the year 2000. Municipalities are given an important role in achieving the target through collection and direct participation!

Companies supplying the car industry are alarmed about the negative reports on PVC from German car manufacturers. A working group, shared between component supplier and polymer manufacturer, has been created to address itself to the issues and to prepare for solutions.

The Department of Environment is likely to open a case on lead stabilisers used in pipe manufacturing. Apparently, this is not due to concern about migration of lead into contact water but because of concern about the impact of lead on the environment.

RECYCLING

RECOUP (collection) and EVC-REPRISE (recycling) progress their activities for plastic bottle recycling. The NRT automatic detection system is installed at REPRISE. Feedstock are "mixed plastic bottles" (Appendix 5). Whilst acceptable "purity levels are achieved for HDPE and PVC (> 99%), tuning work concentrates on the purity level requested by the PET industry, > 99.9%! This already highlights the problem the PET industry is faced with when recycling this material from a "mixed collection stream" and explains their (unrealistic) request for "separate collection schemes".

DEVELOPMENTS AT EUROPEAN COMMISSION LEVEL

The Commission abandoned the idea to bring forward an "all plastic waste directive", at least for some time. Instead, DG XI published the first draft of an "all packaging waste" directive in May, of which the principle objectives are :

- * no increase in annual per capita output of packaging waste
(= "standstill principle")
- * waste managements targets (to be achieved 5 years after adoption)
 - 60% material recycling
 - 30% energy conversion
 - 10% landfill

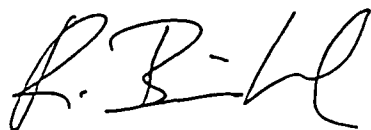
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Beyond all question, the Commission is once again under pressure to bring forward a "harmonised directive", whilst Germany and Holland are already ahead on this subject and will do everything to keep their position. Industry and trade (and this for all materials!) have created a forum ("ad hoc packaging group") in which to harmonise their position for the consultation rounds with DG XI officials. This group is requesting major changes, containing objectives such as :

- * Implementation of a range of packaging waste recovery measures, thereby eliminating within 10 years 80% of packaging waste going to landfill (prime objective should be reduction in waste going to landfill).
- * recycling of collected and sorted material
20% within 5 years .
40% within 10 years
However, such recycling targets, to be applied across all packaging materials, should only have to be achieved if research shows that recycling is in fact the most environmentally effective way of recovering material. If this is not the case, the recycling targets will have to be revised.
- * Municipalities have responsibility to collect and sort packaging waste from the current waste stream. This should be done in partnership with economic operators and consumers.

APME/PWMI are representing the plastics interests in this packaging group opposite the Commission. There are no signs to discriminate one material. But as one can expect from the discrepancies between these two "starting positions", the EC draft will have to undergo substantial revision. However, DG XI is committed to present a text, ready to make a proposal to the Commissioners by year end.

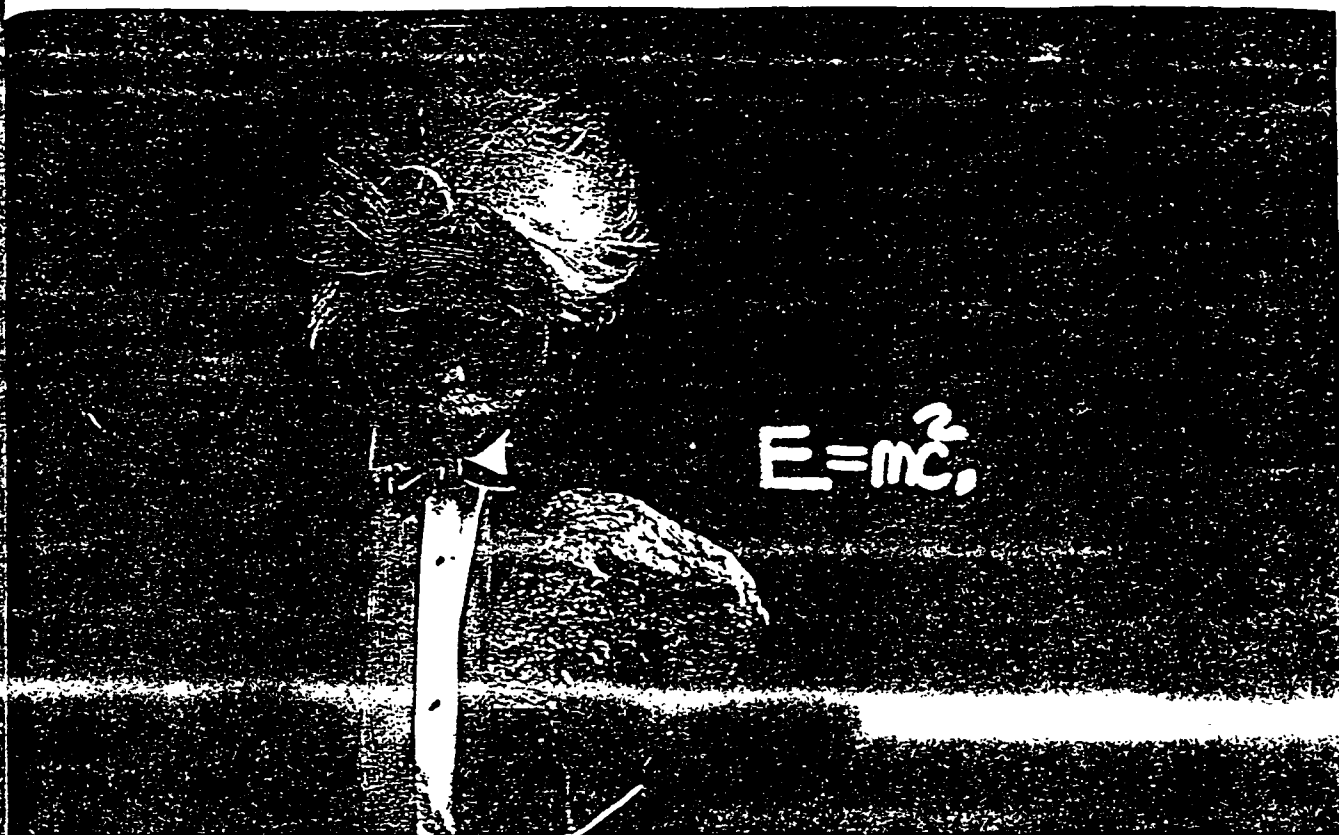


R. BUEHL

(with input from ECVI and EVC Environmental Committee)

Enclosure : Appendix 1 to 5

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$$E=mc^2,$$

PVC IST EIN STEIN.

Wenn Sie verantwortungsbewußt über den Kunststoff PVC sprechen wollen, ist es gut zu wissen, warum PVC ein Stein ist.

PVC ist einerseits ein **Salzstein**. Der Rohstoff für PVC kommt zu mehr als 50 Prozent aus Salz. Dieses Salz ist nahezu unbeschränkt in der Natur vorhanden und kann auch wiedergewonnen werden.

Andererseits ist PVC ein **Baustein**. So schützt PVC als Kabelmantel die Telefon- und Stromkabel unserer Kommunikations- und Energieversorgung. Als Rohr sorgt es dafür, daß keine schädlichen Stoffe in unser Grundwasser gelangen. In der Medizin verrichtet PVC seine wertvollen Dienste als Heftplaster oder als Spezialbeutel für lebensrettendes Blutplasma.

PVC bietet nämlich eine Reihe von herausragenden Eigenschaften und ist recyclingfähig.

Bald wird in ganz Österreich PVC-Recycling zum guten Umweltton gehören, damit niemand mehr über den vielseitigen Kunststoff PVC „stolpert“.

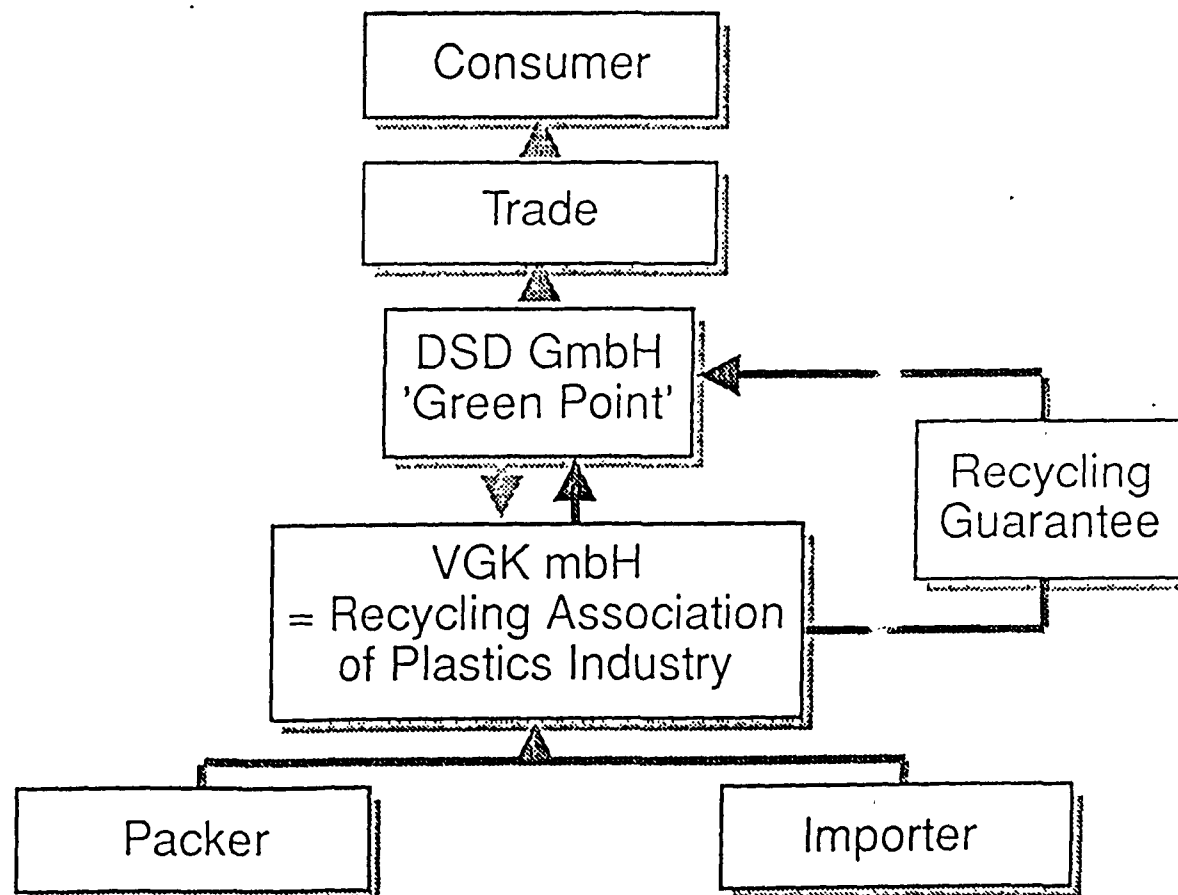
PVC.

Es lohnt sich, mehr zu wissen.

API, PVC- und Umweltberatung GmbH, Untere Viaduktgasse 53, 1030 Wien, Telefon: 0660/60 14

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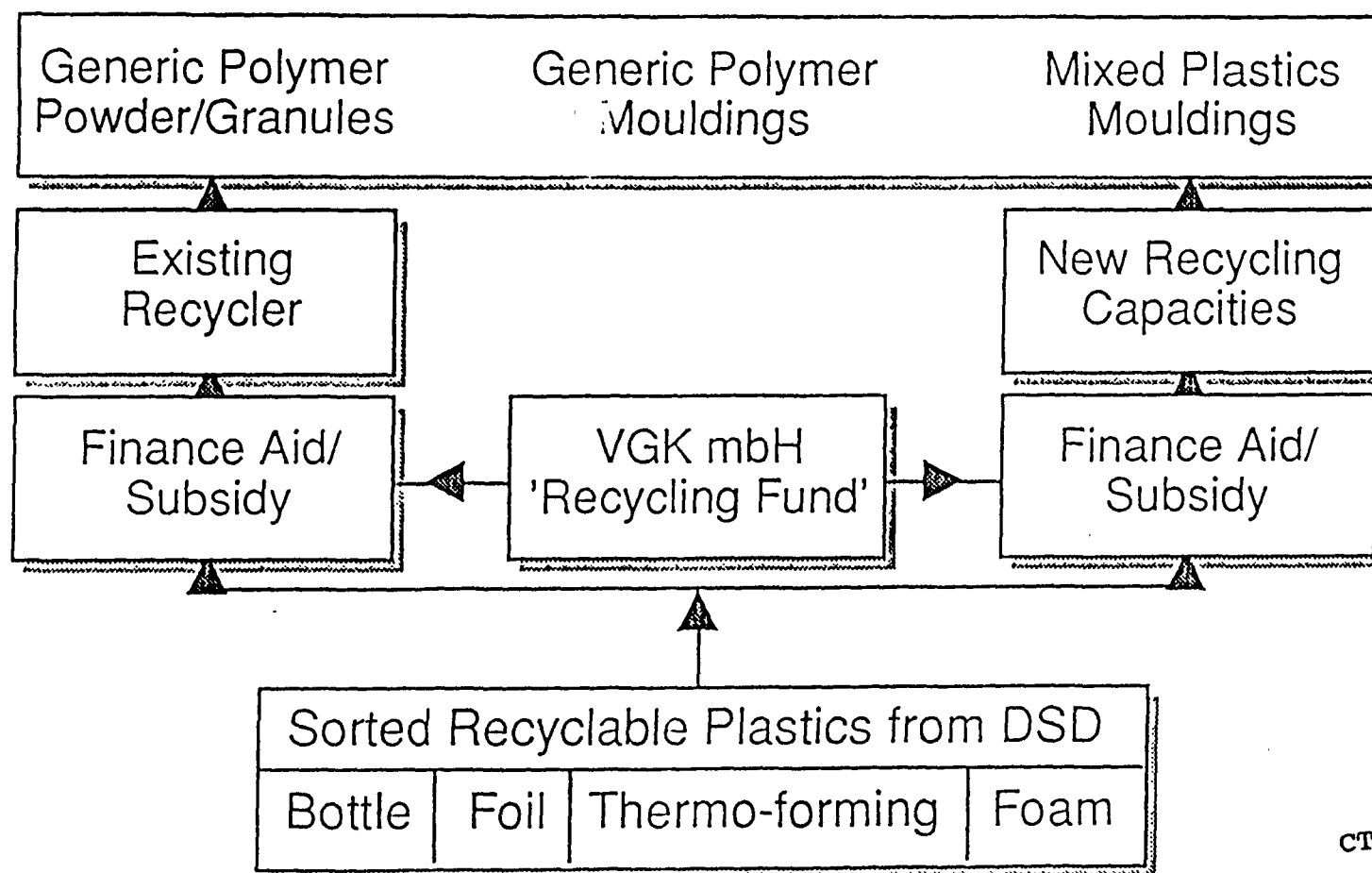
DUAL DISPOSAL SYSTEM FOR USED PLASTIC PACKAGINGS



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EVC
ECONOMY VEHICLE COMPANY

RECYCLING OF USED PLASTIC PACKAGINGS



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EVC

MAJOR TASKS FOR VGK mbH

VGK mbH = Verwertungsgesellschaft Gebrauchte Kunststoffverpackungen

- Representation of plastic packaging industry's interests
- Declaration of recycling guarantee opposit the 'Dual Disposal System'
- Coordination of countrywide network of recycling capacities
- Payment of 'Finance aids/subsidies' to recycling companies
- Provision of interim storage facilities
- Promotion of technology and application development projects

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July 1991

Bisher wanderten alte PVC-Fenster bei Umbau, Abriss oder Renovierung allzuoft auf den Müll. Diese Zeiten sind vorbei. Denn aus alten PVC-Fenstern wird jetzt im Rahmen einer Ökovereinbarung ganz einfach etwas Neues gemacht. Dazu werden Glas, Dichtungen und Metallteile entfernt und das übriggebliebene PVC ohne Umweltbelastung zerkleinert und neu verarbeitet. So schont PVC vor allem unsere Ressourcen. Denn die Herstellung von Recyclingprodukten spart Rohstoffe und verbraucht wesentlich weniger Energie als die von Neuprodukten. Darüber hinaus sollte man wissen, daß selbst

neue Fenster aus PVC mit sehr geringem Energieaufwand gefertigt werden.

PVC. Der vielseitige Werkstoff.

Fenster aus PVC isolieren ausgesprochen gut. Sie senken unsere Heizkosten und Emissionen und sind dabei weitgehend wartungsfrei. Das heißt, sie müssen weder lackiert noch gegen

Faulnis geschützt werden. Alles glasklare Vorteile, die für PVC-Fenster sprechen.

Das Mehrwegfenster ist eins der Beispiele, wie sich Recyclingmethoden für PVC entwickeln. Ein anderer Ansatz sind PVC-Bodenbeläge, die in vielen Fällen schon aus Recyclingmaterial bestehen. Oder auch Wasserflaschen aus PVC, die schon seit längerer Zeit zu langlebigen Wasserrohren verarbeitet werden

Ein weiterer Modellversuch sind Automaten, die, an Ladenskassen aufgestellt, Verpackungen direkt zu wertvollem Rohstoff zerkleinern. Und nicht zu vergessen Telefonkarten, die in Boxen gesammelt und dann zu PVC-Folien wiederverarbeitet werden. Daraus kann man dann unter anderem wieder neue Telefonkarten machen.

PVC. Aus alt mach neu.

Außerdem werden PVC-Verpackungen, die zusammen mit anderen Kunststoffen aus dem Hausmüll aus-

sortiert wurden, zu Produkten für den Landschaftsbau wiederverwertet.

Diese Praxisbeispiele zeigen, daß auf dem Gebiet des Kunststoffrecycling einiges geschieht. Damit Kunststoffe aber recycelt werden können, kommen zuallererst praktikable Entsorgungssysteme zum Tragen. Deren Ziel ist es, die Kunststoffe zunächst einmal sortenrein zu sammeln. Mit der Automobilindustrie gehen wir bereits solche Wege. Darüber hinaus arbeiten wir mit Hochdruck daran, mit weiteren Branchen entsprechende Entsorgungs- und Recyclingssysteme in Gang zu bringen.

Wenn Sie mehr über PVC wissen möchten, schreiben Sie uns. Die Deutsche Kunststoff Industrie, Karlstraße 21, 6000 Frankfurt am Main 1. Wir schicken Ihnen gerne und kostenlos interessante Informationen.



Kunststoff.
Wir stellen uns
der Zukunft.

Hier sehen Sie das erste Mehrwegfenster.



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MARKS and SPENCER

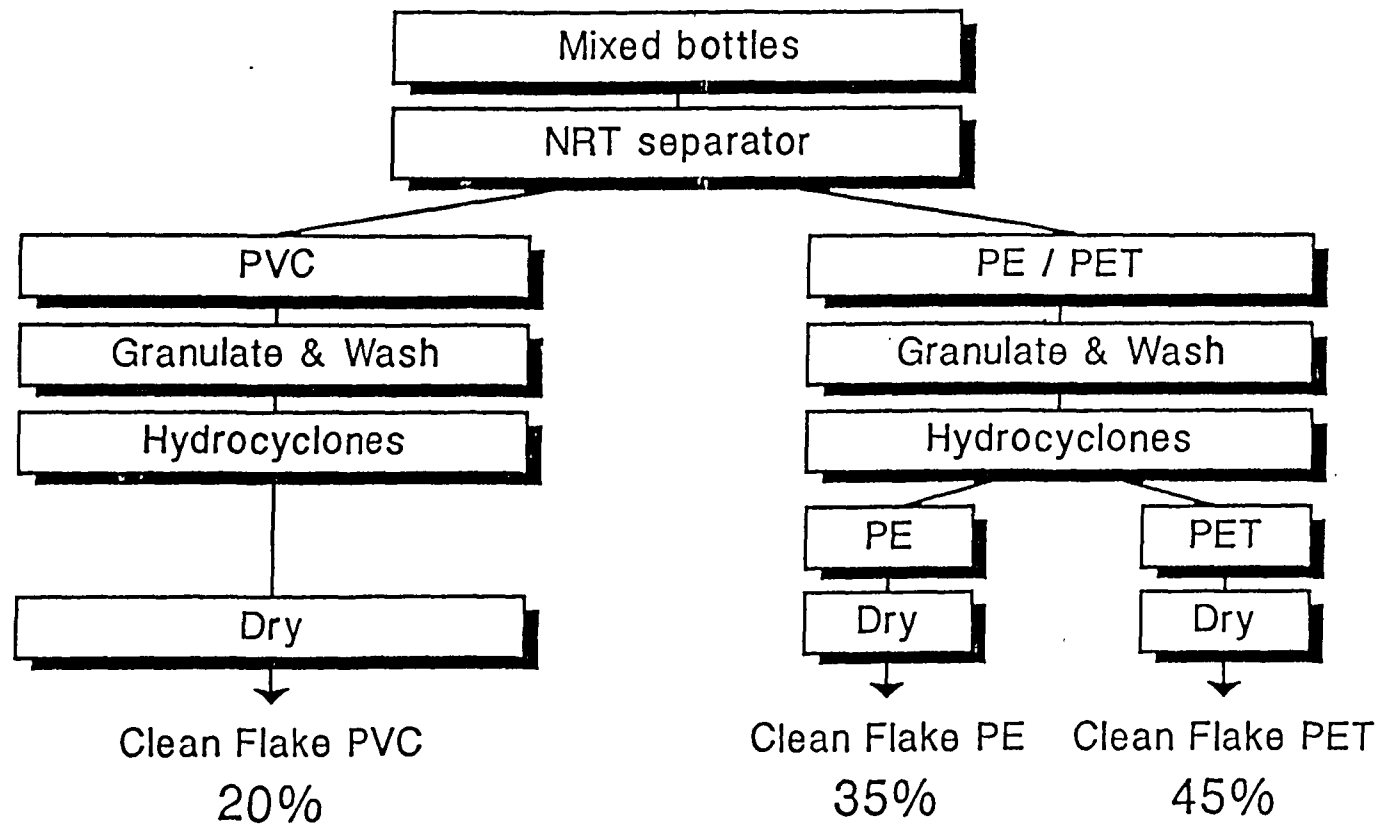
BACKS "FRIENDLY" PVC PACKAGING

" Marks and Spencer has chosen PVC over both PET and OPS as the store's most environmentally friendly polymer. The supermarket chain, so often a bellwether for the habits of the UK high street, has begun a recycling operation that will involve 4,000 tonnes of straight-on trays each year. All of these will now be made from PVC. "

Edwin Lucas, Marks and Spencer
"PRI Plastics Recycling" Conference, London, 13-14 March, 1991.

EVC

BOTTLE RECYCLING PLANT



REPRISE

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