

reporting on the progress of the Australian PVC industry's Product Stewardship Program during 2007

Summary of Key Commitments and Progress

Issue	2007 Commitment	2007 Progress	2008 Commitment
one: production and storage			
VCM in finished resin	Residual VCM in finished resin powder not greater than 1 ppm.	Achieved by 10 out of 11 relevant Signatories. One Signatory failed to report on this commitment in time.	Ongoing
VCM emissions resulting from manufacturing	VCM emissions no greater than 50g / tonne PVC.	Achieved. Emissions of less than 18g/ tonne PVC as at 30 June 2008.	Ongoing
Environmental management systems at manufacturing and storage sites	To encourage and support advances in environmental management of Signatory operations. All Signatories to work towards reaching or exceeding the industry's Minimum Acceptable Standard.	18 Signatories reported meeting the Minimum Standard (an increase from 12 last year). Four Signatories in the process of meeting the minimum standard.	All Signatories to work towards reaching or exceeding the industry's Minimum Acceptable Standard. 75% of the terms of the Standard to be met by the end of 2008 for Signatories not meeting the Standard as at end 2007.
two: the use of lead and cadmium			
Code of Practice	Adherence to the industry Code of Practice for the use of lead and cadmium in PVC products in Australia.	All but one Signatory for whom it is relevant confirm adherence to the industry Code of Practice.	Ongoing
Cadmium use	Maintain commitment to avoid the use of cadmium stabilisers	No report of cadmium use by Signatories	Ongoing
Lead use	To phase out the use of lead stabilisers in 2008 for pipes and fittings and 2010 for other applications.	The cable and one of the pipe Signatories phased out use by end of 2007. Remaining Signatories on track to meet targets.	Ongoing
Pigments	To substitute lead, cadmium & hexavalent chrome pigments by 2010 where technically feasible and alternatives are available.	Technical reviews performed and substitution taking place where feasible.	Ongoing
Other additives	To monitor any pertinent overseas developments.	Monitoring maintained	Ongoing
Open Disclosure	To provide general information on additives used in PVC products or components to stakeholders upon request.	Commitment has been communicated to relevant staff and systems are in place.	Ongoing
three: the use of phthalate plasticisers			
Phthalate plasticisers	To implement the industry Policy on Plasticiser Use.	All relevant Signatories confirmed adherence.	Ongoing
	To share relevant information with NICNAS.	Relevant information shared with NICNAS.	Ongoing

Issue	2007 Commitment	2007 Progress	2008 Commitment
four: waste management			
National Packaging Covenant (NPC)	All relevant Signatories to have submitted waste management Action Plans under the NPC and to maintain compliance with NPC obligations.	All relevant Signatories (four) are signed up and action plans lodged.	Ongoing
Recycling	To implement commitments contained in Vinyl-2-Life action plan.	Most actions completed and new actions have been set (see Appendix)	Ongoing
	To monitor overseas developments.	Information on recycling developments overseas shared with Signatories and TSG.	Ongoing
Encouraging consumer responsible care	To provide information to end consumers on management options for end-of-life PVC, by end 2007	Five of the 15 relevant Signatories reported compliance using a range of methods to provide information to end consumers	Ongoing
Life cycle thinking	To consider whole-of-life in the development of new products, taking into account end-of-life issues and waste management options	Signatory initiatives include focusing on recycling, energy efficiency and material efficiency	Ongoing
five: research			
Research	To monitor national and international scientific research and share pertinent information with signatories and stakeholders	Information on a range of issues and matters was shared with Technical Steering Group members and/or Signatories (see pg 16)	Ongoing
six: public reporting			
Performance against commitments	Publish 2007 annual performance report by 30 June 2008	Published in October 2008 Report verified by independent third party. Audit statement provided	Publish 2008 annual performance report by 31 August 2009
PVC life cycle impacts	To publish annual product stewardship issues review	Review for 2007 published in this document	Ongoing
Review implementation and effectiveness of the product stewardship program	Publish a review and recommendations by December 2007	Review completed in Dec 2007 5 Year Evaluation Report issued in early 2008	Complete a review by end 2012 and publish recommendations by end March 2013

Product Stewardship Report 2007

The PVC industry's Product Stewardship Program (PSP, or 'the Program') is a voluntary initiative setting out a series of commitments to address environmental and health issues associated with the life cycle of polyvinyl chloride (PVC, or vinyl). These commitments bind the Signatories to deliver specific outcomes.

This is an ongoing long term undertaking of the Australian PVC industry to recognise and progressively address all pertinent environmental issues within responsible and deliverable timeframes. This annual report provides information on progress in meeting the commitments, assesses the status of issues, and records new or revised commitments where appropriate.

Executive Summary

The PVC industry's voluntary Product Stewardship Program, now in its sixth year, works to address the environmental and health issues associated with the life cycle of PVC. Signatories commit to a range of actions in areas including manufacturing emissions, additives and end-of-life management.

A key activity in the past year was an evaluation of the program after 5 years of implementation. This evaluation found the Program to be successful at reducing environmental impacts across the life cycle, and the continuation of the Program in its current form was recommended.

Achievements during 2007 highlighted how industry stewardship can influence the wider manufacturing industry. By the end of 2007, a revised Modified PVC pipe standard (AS/NZS4765) was published with lead, cadmium and mercury explicitly not permitted. This was a result of pipe Signatories working with Australian Standards in an environmental initiative that will extend to non-Signatory companies.

Other achievements in 2007 include two Signatories phasing out the use of lead stabilisers ahead of schedule, ongoing development of recycling initiatives, an improvement in the management of Signatories' Environmental Management Systems and the development of a new commitment on the use of pigments.

We continue to welcome and thank the support and input received from the NSW Department of Environment and Climate Change, the Australian Government Department of Environment, Water, Heritage and the Arts and the CSIRO through their participation in the Technical Steering Group. At the end of the year, we also welcomed Sustainability Victoria and the Green Building Council of Australia as observers to the Group and Program.

George Macovaz
Chairman
Technical Steering Group

Foreword

Signatories to the PSP are required to supply data for analysis and monitoring by the Program's Technical Steering Group for preparation of the Program's annual progress reports and to show evidence of meeting the Program's commitments. For the 2007 reporting year, one Signatory, FPI Compounds, failed to submit data. In line with the Program's terms and conditions, this has resulted in the Technical Steering Group recommending the de-listing of FPI Compounds from the program to the VCA Board. The process of delisting the company was underway at the time of publishing.

All data reported in this year's report does not include data for FPI Compounds. Excluding FPI Compounds, there are 26 Signatories to the Program. The relevance of each commitment to each Signatory varies depending on whether they are a supplier or converter or industry association and the type of product produced or supplied. For each commitment, this report notes non-compliance by any Signatory and the number of Signatories that comply.

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Significant Program Developments in 2007

- New Commitment on the use of pigments
- Two Signatories completed lead stabiliser phase out ahead of schedule
- VCM manufacturing standard met
- More Signatories meet minimum standard for EMS
- Flooring recycling trials begin
- Waste Sub-Committee formed to engage key sectors in meeting *Vinyl-2-life* plan

Commitment one: production and storage



Residual VCM

PVC resin manufacturing involves the polymerisation of vinyl chloride monomer (VCM), a hazardous substance and potential human carcinogen following prolonged, high level exposure. Once polymerised to form polyvinyl chloride, the resin is essentially inert and does not revert back into the monomer. However, minute amounts of unreacted VCM may remain in the resin.

International voluntary industry standards require resin to have no more than five parts per million (ppm) VCM in final resin to be used in general products and less than one ppm in resin to be used in food contact and medical device applications. Such standards protect the health of workers from exposure to VCM during conversion of the resin into finished goods, as well as consumers (VCM should be undetectable in the final product).

Under the PSP, the Australian industry has set a standard of no more than one ppm for all resin.

Local PVC resin manufacturer, Australian Vinyls Corporation, confirmed that the average concentration of VCM in domestically manufactured PVC resin has not exceeded the Program commitment of one ppm. For the year 1 July 2006 to 30 June 2007, Australian Vinyls reported an annual average residual VCM in resin product of 0.08ppm.

All Signatories but one who import PVC resin from overseas confirmed that the residual VCM in such resin was at or below 1ppm. Orica Chemnet had not provided data in relation to this commitment at the time of verification.

VCM Carcinogenicity Reviewed

During 2007, the International Agency for Research on Cancers (IARC) updated its evaluation of the carcinogenicity of VCM and found that VCM exposures had the potential to cause hepatocellular carcinomas (HCC) in addition to angiosarcoma of the liver. HCC is a more common liver cancer than angiosarcoma of the liver, and its main causes are alcohol and hepatitis B and C. Employees at Australian Vinyls have been briefed on this matter; employees whose work may potentially expose them to VCM in the PVC manufacturing process undergo comprehensive health monitoring.

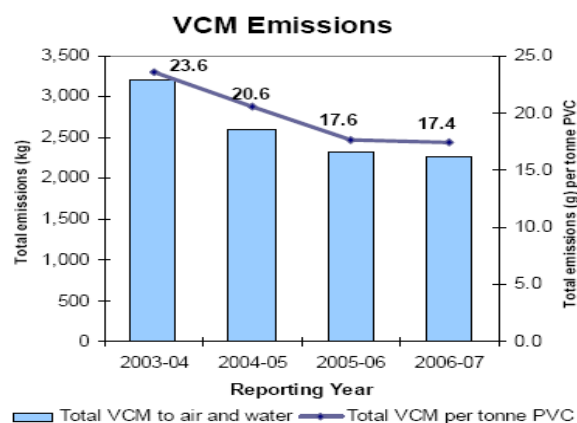
Manufacturing emissions

Australian Vinyls is committed to ensuring VCM emissions arising from the manufacture of PVC resin meet the PSP standard of less than 50g per tonne of PVC produced. The company's reported VCM emissions to air and water for the period 1 July 2006 to 30 June 2007 were less than 18g per tonne produced. For more information on the company's performance, refer to its Sustainability Report, published on its website at www.av.com.au.



PSP 2007 Commitments:

- *VCM retained in manufactured resin shipped to, or imported direct by converters and compounders will not exceed 1 part per million, consistent with best published international standards.*
- *VCM emissions resulting from Australian manufactured PVC resin will not exceed 50 grams per tonne of PVC produced.*
- *Encourage and support advances in environmental management of Signatory operations, measured by a repeat survey in 2007.*
- *Provide further resources for development of improved EMS*



Source: Australian Vinyls Corporation Sustainability Report 2006-07.

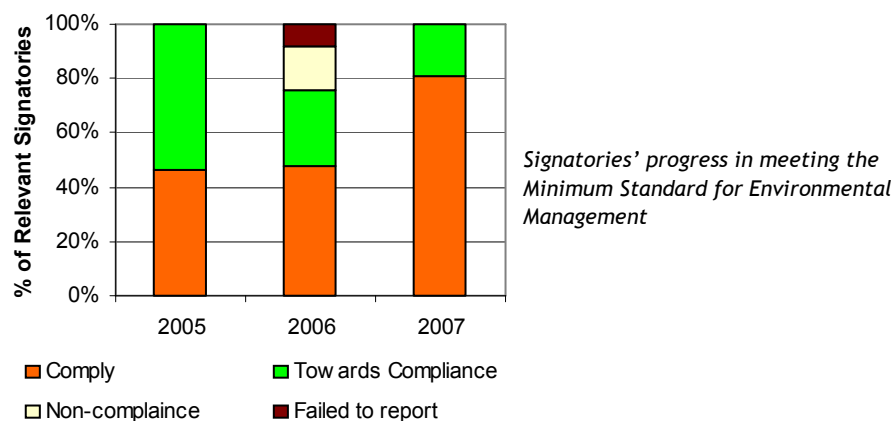
Environmental management policy and procedures

Following a survey of the status of environmental management at Signatory sites, in 2005, Signatories agreed to work towards a PVC industry *Minimum Acceptable Standard for Environmental Management* (a copy of this Standard is available on the Vinyl Council's website at www.vinyl.org.au). All Signatories involved in production and storage activities are expected to confirm annually that their company meets this Standard or is working towards it.

For the reporting year 2007, 18 Signatories confirmed that they meet or exceed the Minimum Acceptable Standard with five of these having their environmental management systems (EMS) certified to ISO 14000. This is an improvement on last year's performance when only 12 Signatories confirmed meeting the minimum requirement.

As at the end of 2007, 4 out of the 22 relevant Signatories were in the process of improving the environmental management of their operations in order to meet or exceed the Minimum Acceptable Standard.

The graph below demonstrates the increase in the number of Signatories meeting the minimum standard for environmental management.



2007 Survey

In order to assist Signatories to review their compliance to the minimum standard, gauge progress in advancing EMS at Signatory sites and to determine what key aspects of environmental management need to be improved, a self-assessment survey was conducted in 2007.

Sixty-four percent of relevant Signatories returned their surveys. Of the 28 percent of respondents who were in the process of meeting the Minimum Standard, EMS training, emergency preparedness and EMS auditing and review were identified as areas needing further support.

Ongoing commitment to advancing EMS

A five year evaluation of the Program completed in late 2007, identified the EMS commitment as scoring low in terms of practicality as it is difficult to quantify and measure progress under the commitment. The review noted that although there are clear benefits to meeting this commitment, a small number of Signatories were experiencing difficulties in implementing an EMS.

It was agreed that in order to bring all Signatories up to the Minimum Acceptable Standard, the commitment needs a stepped approach focusing on a few key elements of the EMS in the short term. The results of the 2007 survey have helped to inform specific areas where Signatories need assistance.

A review of the commitment was undertaken in early 2008 and revisions made to facilitate measurement of progress.

2008 Action:

- *Review EMS Commitment, improve practicality and measurability.*
- *Support Signatories in EMS areas identified as needing improvement.*

Commitment two: heavy metal additives



Implementing the Code of Practice

The Code of Practice for the use of lead and cadmium in PVC products is a voluntary Code for relevant Signatories to this Product Stewardship Program. Under the Code, Signatories who use these stabilisers are committed to comply with its terms and oversee its implementation.

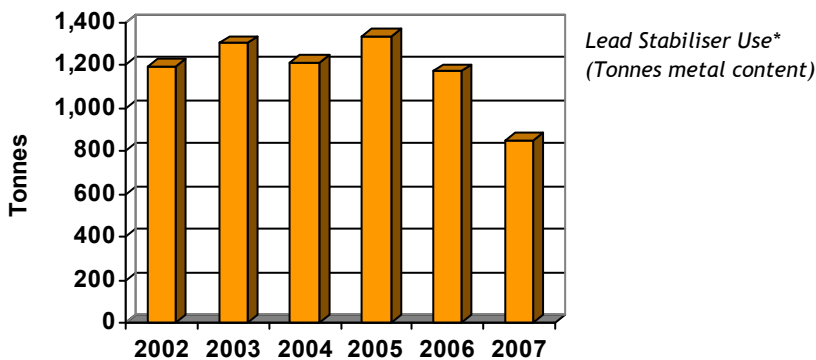
At the time of publishing all relevant reporting Signatories using lead and/or cadmium confirmed implementation to the Code of Practice, except for Pacific Plastics. Pacific Plastics did, nevertheless, comply with other aspects of the Commitment.

Two Users Complete Lead Phase Out

By the end of 2007, two Signatories – one each from the pipe and cable sectors – had phased out the use of lead stabilisers from their products, ahead of the targeted phase out dates. The remaining Signatories from the pipe sector are planning to complete phase out by the end of 2008 in line with the commitment. All other lead stabiliser-using Signatories intend to meet the 2010 target phase-out date.

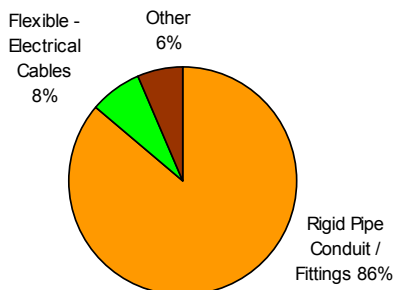
By the end of 2007, a revised Modified PVC pipe standard (AS/NZS4765) was published with lead, cadmium and mercury explicitly not permitted.

The charts below represent annual total usage of lead metal content of stabilisers used by reporting Signatories and demonstrates an overall reduction in the use of lead stabilisers as the Signatories move towards the phase out.



Lead Stabiliser Use by Sector (%)

This chart demonstrates the majority of lead stabiliser is used by the rigid pipe/conduit sector therefore a sharp decrease is expected by the end of 2008 as the pipe sector completes its phase-out.



PSP 2007 Commitments:

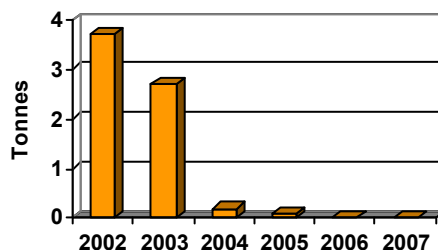
- Implement the Code of Practice for the use of lead and cadmium in PVC products in Australia
- Complete the phase out of the use of lead stabilisers by 2008 for pipes and fittings and 2010 for all other applications
- Substitute the use of cadmium, lead and hexavalent chrome pigments by Signatories, subject to availability of suitable alternatives, by 2010

Signatory Sector	Lead Phase Out Target Date
Pipe/Fittings	2008
Custom compound	2010
Cable	Achieved
Profile	2010
Hose and tubing	2010
Mouldings	2010
Other building materials	2010

*To avoid double-counting, the figures are derived from data reported by converters for products sold on the local and export markets, and stabilisers reported sold by Signatory compounders to non-Signatory converters.

Cadmium stabilisers

All Signatories as at 31 December 2007 reported no use of cadmium based stabilisers.



Cadmium Stabiliser Use (metal content)



Stabiliser trends overseas

Lead stabilisers substitution is ongoing in Europe and is confirmed by the corresponding growth in calcium zinc and organic stabilisers, used as alternatives to lead. By the end of 2007 lead stabiliser use had decreased by 34 percent (EU-15) from 2000 levels. A 50 percent reduction is targeted for 2010. In 2007, the European industry's commitment to phase-out lead stabiliser use by 2015 was extended to the EU-27 (the expanded European Union covering 27 countries and states including Central and Eastern Europe).

Cadmium stabiliser phase out was completed in the EU-25 in 2006 and in the EU-27 in 2007.

The introduction of Europe's new chemical policy and regulation, REACH*, may expedite the phase out of lead stabilisers in Europe as lead compounds will need Registration and Evaluation and are unlikely to be Authorised under REACH for use.

In South America, the PVC industry association, INSTITUTO DO PVC, the 10 largest PVC pipe makers and the three largest stabiliser producers committed to substitute lead based stabilisers for calcium zinc stabilisers in PVC pipes.

Three of the companies have reached 100 percent substitution and the others are in the process of substitution, so that by 2007, 75 percent of lead stabiliser use had been replaced. This is considered the maximum extent of substitution achievable on a voluntary base and the industry is now seeking legislation to be put into force by the end of 2010.

In Korea, the industry commenced a voluntary commitment in 2006 to change lead stabilisers in sewage pipe to alternatives by 2010. The Korea Agency for Technology and Standards (KATS) is planning to amend standards for PVC sewage pipe accordingly.

Alternative stabilisers

Alternative stabilisers for lead-based compounds have been covered in our previous reports. For more information refer to the Product Stewardship section of the Vinyl Council's website www.vinyl.org.au

Pigments

The PVC industry in Australia accounts for only a small proportion of the total consumption of cadmium, lead and hexavalent chrome pigments, which are used in a wide range of applications across a number of sectors. Alternatives are available for use, although there may be technical and commercial constraints in moving to these for some applications. However, Signatories to the Australian PVC industry Product Stewardship Program are committed to removing toxic heavy metals from PVC products as reflected in the ongoing progress to remove lead stabilisers and the phase out of cadmium stabilisers.

A number of Australian PVC manufacturers and suppliers have already ceased the use of cadmium, lead and hexavalent chrome pigments, or are publicly committed to phasing them out within a specified timeframe. Only two Signatories are currently using them because of the specific colour and technical properties these metals offer as pigments.



2007 Use of Pigments reported in kilograms of metal content

Pigment	Lead based	Cadmium based	Hexavalent Chrome based
Use (kg)	6920	0	2331

The table above shows the usage of lead, cadmium and hexavalent chrome based pigments by Signatories. There was no report on cadmium pigment usage for 2007. Two Signatories reported use of lead-based pigments and chrome-based pigments.

Both Signatories still using lead pigments have performed a technical review and no new products will be developed with lead pigments. While one of the two Signatories plans to phase out of the use of lead pigments by the end of 2008, well within the target of 2010, the other Signatory is still working on a time line for phase out.

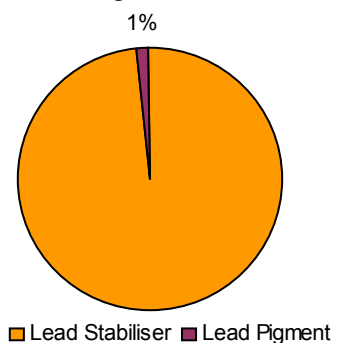
Regarding chrome based pigments, one plans to phase out their use by the end of 2008. The other only uses chrome based pigments where no technical or commercial alternative system is currently available.

Where these pigments are still in use, Signatories agree to adhere to relevant Australian Standards, and not to use cadmium, lead and hexavalent chrome pigments in sensitive applications (e.g., toys, childcare articles, potable water products, food contact).

They also agree to ensure good industrial hygiene practices at their sites to protect employees and the community from exposure to pigments and to manage pigment-contaminated wastes appropriately.

The chart shows the amount of lead used by Signatories in pigments compared with stabilisers. It demonstrates the small impact a reduction in the use of the lead pigments by Signatories has compared to the lead stabiliser phase-out.

Lead Stabiliser vs Lead Pigment Use



Open Disclosure

PSP 2007 Commitment:

- Signatories agree to provide general information on the additives used in their PVC products or components to stakeholders upon request.

Signatories reported training relevant personnel to ensure any requests for information were responded to in accordance with the Open Disclosure Commitment.

Most Signatories have used their existing, relevant internal processes to record any requests for information. Suppliers of raw materials and intermediates continue to supply Material Safety Data Sheets with their products.

Commitment three: plasticiser use

PSP 2007 Commitments:

- Continue the adoption of the PVC industry's policy for the use of phthalate plasticisers in flexible PVC products in Australia;
- Share relevant information with NICNAS to assist its review of phthalates.

Plasticisers are added to PVC resin to impart flexibility and produce a wide range of products such as cable sheathing, floor-coverings, footwear and furnishings. These plasticisers are usually esthers of phthalic acid, or the group of substances commonly called phthalates. Concerns have been raised about the safety of certain phthalate plasticisers and so the Australian PVC industry's Product Stewardship Program developed and included a *Policy for the Use of Plasticisers in PVC Products*.

The Policy includes monitoring developments regarding the health and environmental safety of plasticisers here and overseas and promotes sharing of information among Signatories and state and federal regulatory authorities. It includes a commitment to cease the use of a phthalate plasticiser in any application where available scientific evidence shows it to have unacceptable health or environmental impacts. In 2007, all relevant Signatories (i.e. those using plasticisers) confirmed adherence to the Policy and the Vinyl Council continued to monitor international scientific and regulatory developments concerning phthalate use.

Australian Regulatory Developments

In 2007, the Australian Government's National Industrial Chemical Notification and Assessment Scheme (NICNAS), the regulatory authority for industrial chemicals, released and sought comment on draft Human Health Hazard Assessments for 25 phthalate chemicals as part of its review of phthalates.

In addition to these individual hazard assessments, the hazard profiles for all 25 phthalates were compiled into a draft Phthalate Hazard Compendium providing a comparative analysis of key toxicity endpoints for these phthalates. Comment was also sought on this Phthalate Hazard Compendium.

The Vinyl Council submitted comments on these documents to assist finalisation of the reports.

NICNAS also intends to publish risk assessments of nine phthalates focused on particular sensitive end applications such as toys, cosmetics and medical devices.

Overseas Plasticiser Developments

In 2007, the Brazilian government banned the use of three phthalates in toys and restricted the use of another three. The ban prohibits the use of DEHP, DBP and BBP in all kinds of toys, and bans the application of DINP, DIDP and DNOP in toys and child oriented products for children under three years old. The decision follows the position adopted in the EU in early 2005.

Also in 2007, the state of California in the U.S. banned any product made for young children that contains more than one-tenth of one percent of phthalates from being made, sold or distributed in California beginning in 2009.

In Europe in 2007, the text for the risk assessment of di-(2-ethylhexyl) phthalate (DEHP) was finalised. The risk assessment concluded that existing control measures for adult exposure to DEHP were adequate; however, it suggested a need to reduce exposure to children from DEHP in toys and child-care articles. The implementation of Directive 2005/84/EC which prohibits the use of DEHP in toys and child-care articles in Europe from January 2007 reduces this risk.

*2008 Action:
Review NICNAS Hazard and Risk
Assessments and overseas
assessments of phthalates*

In Australia, in December 1998, the Vinyl Council and the Australian Toy Association advised Australian PVC toy suppliers and manufacturers to consider removing phthalates until more scientific work was done in order to minimize possible concerns in the minds of parents. There is very little, or no, PVC toy manufacturing in this country.

The European risk assessment reported that the level of DEHP breakdown products measured in human urine showed that the intake of DEHP is low and is not a concern for the general population. It found use of DEHP was safe in a large variety of indoor and outdoor applications.

The European Commission's Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR) was asked to evaluate the exposure to DEHP for the general population and patients during medical procedures. Its preliminary opinion published in 2007 found that there was limited clinical or epidemiological evidence indicating a relation between DEHP exposures and certain effects in humans. However, under certain circumstances, the potential exposure of a person undergoing a medical procedure may exceed the doses at which toxicity was observed in animal studies.

It was recognised that alternative plasticisers for PVC medical devices are available. A risk assessment of these available alternative plasticisers could not be performed due to a lack of exposure data from medical devices. SCENIHR recommended however, that each alternative to DEHP be evaluated with regard to their functionality in respect to medical devices and the risks and benefits of using alternative plasticisers evaluated case by case.

In March 2007, the European Commission published its Directive 2007/19/EC requiring limitation of the use of DEHP in food contact materials. It states that DEHP may only be used in repeat use application (tubes, conveyor belts etc) with non-fatty foods and with a specific migration limit based on 50 percent of its tolerable daily intake.

Phthalates, like all other chemicals will be subject to the implementation of the new European chemical regulatory process, REACH.

Following the publication of the EU risk assessments on the most commonly-used phthalate plasticisers such as DINP, DIDP, DBP, DEHP, the European Council for Plasticisers and Intermediates has undertaken a major study on human volunteers. The purpose of the study is to define the best methodology in order to correctly measure DEHP and DINP metabolites in humans and therefore the levels of acceptable exposure.

*Information on alternatives to
phthalate plasticisers was
shared with Signatories during
2007*

In Australia, DEHP continues to be used in some applications. There are no bans on its use. Major PVC applications such as floor-coverings and cable sheathing have moved away from DEHP to alternative phthalate plasticisers such as DINP and DIDP both of which were found safe for use in the EU risk assessments.

Commitment four: waste management

PSP 2007 Commitment:

- *Where relevant to the company concerned, Signatories will be signatories to and maintain compliance with, the National Packaging Covenant (MKII). A summary of their progress under their Covenant Action Plans to be provided.*



NPC Highlights:

- *Aperio made progress in reducing use of raw materials and packaging and increasing the amount of recyclate used in products. Aperio has also consulted with customers to down-gauge packaging film to reduce materials and waste.*
- *Vinyl Council and Plaspak Peteron continued to participate and fund the Vinyl Cycle Program.*

Packaging waste

The National Packaging Covenant (NPC) is a self-regulatory agreement between industries in the packaging chain and all spheres of government. It is based on the principles of shared responsibility through product stewardship and applied throughout the packaging chain, from raw material suppliers to retailers and the ultimate disposal of waste packaging.

Signatories to the NPC are required to submit documents that demonstrate their aims and achievements against Covenant goals and targets. These action plans and annual reports are then sent for assessment against Covenant requirements and if registered, placed on the NPC website for public view at www.deh.gov.au/settlements/waste/covenant/index.html

In 2007, PSP Signatories **Aperio**, **Pliant**, and **Plaspak Peteron** – all packaging manufacturers – and **Australian Vinyls**, as a resin supplier to the sector, were signatories to the NPC and had action plans submitted and registered.

The **Vinyl Council**, **Plaspak** and **Australian Vinyls** participate in **Vinyl Cycle**, a program to recover and recycle PVC bottles from kerbside-collected waste in Australia. The program has included encouraging Material Recycling Facilities (MRFs) to sort and recover the PVC bottles – usually cordial bottles, rice and oil containers – for which Vinyl Cycle pays a fee per tonne. The bottles are recycled by a dedicated PVC reprocessor and the recyclate purchased from Vinyl Cycle by PVC converters for use in vinyl flooring and pipes and fittings.

PSP Signatory **Armstrong World Industries** continued to purchase and use post-consumer PVC bottle recyclate in floor coverings with 80 tonnes used in 2007.

In 2007, the recovery rate of PVC bottles by MRFs was 50 percent. A large proportion of the recovered bottles are being sent offshore for recycling due to increasing demand overseas for mixed plastic bottles, diverting available tonnes away from Australia. However, an estimated 6.8 percent of recovered bottles were recycled locally.

Plaspak advertises the Vinyl Cycle Programme to all its customers.

Vinyl Cycle raises awareness among local councils of the recyclability of PVC bottles to encourage the inclusion of PVC bottles in kerbside waste collections. In 2007, Vinyl Cycle found the percentage of Australian households having access to PVC recycling through their councils had increased from about two-thirds of households to 90 percent of the population living in councils of greater than 10,000 people. Efforts continue to encourage a greater range of those councils (via their collection contractor/MRF) to sort PVC bottles and supply them to Vinyl Cycle for reprocessing and recycling within Australia.

Other packaging recycling initiatives include:

Armstrong World Industries' waste minimisation included using 6.5 tonnes of post-consumer recycled high-density polyethylene supermarket shopping bags. All the company's packaging materials are recycled and recyclable.

Australian Vinyls has set up a recycling partner for chemicals cardboard packaging that was previously considered prescribed industrial waste and land-filled, diverting tonnes of waste from landfill. **Chemson Pacific** similarly has waste packaging materials externally recycled.

Welvic introduced collection of bulk packaging for recycling and all box packaging is returned and reused.

Post Industrial Recycling



Aperio reported recycling the majority of its PVC waste. Approximately five to eight tonnes including reclaimed used edge trims, off-specification material and set-up rolls were recycled internally. Contaminated or burnt material sold for recycling externally made up approximately five tonnes per month.

Armstrong World Industries (Aust) reported recycling approximately 1,500 tonnes of their post industrial waste, including more than 235 tonnes of PVC. One of its plants is waste neutral, recovering and recycling more waste than it sends to landfill.

Australian Plastic Profiles reported reworking all internal PVC waste (approximately 350-380 tonnes per annum) into either the same finished product or micronising the recycle for usage in APP foam core pipe products.

Nylex reported recycling all in-house PVC waste into like products except for PVC contaminated during processing which is estimated at less than one percent of all converted product. Due to the special requirements of Nylex products, no PVC scrap was purchased and converted into product.

Olex Australia recycled all PVC scrap produced on site, for use in cable or sold for other applications.

Pacific Plastics reported recycling approximately 40 tonnes of internal factory waste in 2007.

Pipemakers recycled in excess of 800 tonnes of post industrial waste during 2007.

Plaspak Peteron has closed loop recycling on each production line. The majority of any factory waste it cannot recycle in-house is sent to a third party recycler.

Polyflor has increased investment in the development of its recycling capacity for both flooring and waste materials at its UK facilities. Post-industrial material collected from Australian sites was shipped back to the UK manufacturing plant.

Vinyl-2-Life waste action plan

The Vinyl-2-Life waste action plan was launched in 2005-06 in response to the findings of the 2005 PVC Waste Audit commissioned by the Vinyl Council. It sets out a series of goals and actions to improve recovery and recycling of key PVC waste streams including cable, pipe, flooring, packaging and profiles. Since then, a number of actions have been completed and new actions have been set. Progress in the following applications has been reported for 2007:

Pipe

Growth of the Pipe Recovery Program in Sydney, Melbourne and Brisbane occurred. A third party reprocessor was engaged to recover waste in Melbourne. In 2007, the first full year of operation, over 500 tonnes of pipe was recycled in Sydney. Material recovered has been used in the manufacture of foam core pipes and conduits for non-pressure applications.

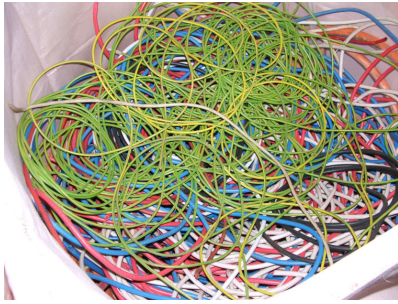
Vinidex, for example, recycled pipe offcuts from the Pipe Recovery Program, as well as material derived from non pipe PVC products, to produce foamed pipe and conduit. All of the company's internally generated plastic waste was reprocessed with no PVC material or additives being sent for external disposal. In 2007, Vinidex reprocessed over 1000 tonnes of material.

PSP 2007 Commitment:

- **Implement Vinyl-2-Life action plan**

2007 Highlights

- **Cable recycling trial completed**
- **Vinyl flooring recovery and recycling trials commenced**
- **Vinyl Cycle bottle recovery continued**
- **Pipe waste recovery and recycling grew**
- **Progress reports were made quarterly to the Technical Steering Group**



Cable

The cable recycling trial was completed. Eight tonnes of cable were recycled in 2007 from the trial, diverting material from landfill; however, closed-loop recycling was not found to be feasible due to potential copper contamination of new sheathing material and stringent Australian Standards for cable. The Vinyl Council developed a relationship with the Australian Metal Recyclers Industry Association (AMRIA) in order to promote the recycling of PVC cable scrap and divert potentially recyclable material from landfill.

Floor Coverings

Discussions were held with Signatories from the flooring sector to develop a Product Stewardship commitment on recovery of end-of-life flooring and to move towards developing programs to support Commitment.

The vinyl flooring Signatories have all commenced trials and investigations with two reprocessors to recover flooring waste. **Armstrong World Industries** completed successful recycling trials of end-of-life flooring.

Polyflor, an importer of vinyl floor-coverings, shipped the first container of clean, installation off cuts from Australian sites back to its UK factory for recycling. Cages for on-site installation waste are offered on major contract work in Australia.

Tarkett, another importer of vinyl flooring, has three European based recycling facilities which recycle over 88,000 tons of PVC based materials each year. The company's local program for end-of-life PVC backed carpet tiles was highly commended and well regarded by Australia's eco-label program, Good Environmental Choice Australia. It has commenced a recycling initiative for its resilient vinyl sheet products with a local recycler.

A detailed summary of the progress against the **Vinyl-2-Life** plan is given in the Appendix.

2008 Actions

- *Improve collection data on PVC recycling*
- *Continue implementation of Vinyl-2-Life*

Vinyl Cycle Progress

- The Vinyl Council of Australia took over the management of the Vinyl Cycle bottle recycling project in August 2007.
- The project continues to be financially supported by Australian end users of PVC bottles.
- Collections from households remain very strong with an estimated 50 percent of PVC bottles being returned to collection facilities.
- Demand from offshore however is still extremely strong and the majority of recovery facilities export their mixed plastics, leaving limited opportunities for Vinyl Cycle to reprocess bottles in Australia.
- Purchases for the 2007-08 financial year totaled 130 tonnes and this was supplemented with a further 35 tonnes of post industrial blister pack.
- Demand for the recyclate end product remains very strong and exceeds the ability to supply
- Efforts continue to source from WA and from additional regional VIC and NSW areas such as Wodonga and Wingecarribee.

Life cycle thinking

Under the Program, Signatories are encouraged to consider life cycle thinking and management in respect of their products. Here we report on how some Signatories have responded to this commitment.



Armstrong World Industries trialled development of a high recycled content (>25 percent) version of one of its vinyl flooring products for a specific project. The recycled materials in the new product included job site off cuts and end-of-life material. The product has been successfully installed in a major hospital and achieved recognition under the Australian Green Star building rating tool for innovation.

Armstrong is also continuing to run a pilot program on recovery of end-of-life (EOL) vinyl sheet and tile products. Plant trials have been run and the company is currently confirming a system for "EOL tile take back" with a key customer.

Australian Vinyls initiated a project in 2007 to reduce the fresh water used in its manufacturing process by half over the next two years, with an eventual goal of zero fresh water in manufacturing. This will reduce embodied water in its resin product which has a beneficial flow-on to products made using its resin. The company has also reduced its energy consumption by about 20 percent since 2000 which reduces the embodied energy of its resin, and contributes to lower embodied energy PVC products.

Chemson Pacific world wide is embracing The Natural Step life cycle assessment programme and is working with other major companies and suppliers in Europe to implement this approach to sustainability. The local company is adopting a parallel strategy in Australia by the elimination of lead components and the introduction of heavy metal free stabiliser systems.

Polyflor Australia is researching and conducting projects/trials in the UK into adhesive systems for flooring that will successfully bond the material to the substrate yet minimise contamination issues associated with end-of-life material. This will increase the amount of material available for recycling.

Tarkett is actively participating in the NSW Government's Sustainability Advantage Program sponsored by the Department of Environment and Climate Change. Under this program, the company is focusing on energy and recycling initiatives. Late in 2007, Tarkett won Westpac NSW's area competition for Sustainability which was awarded in consideration of many of the international and local initiatives, particularly in the area of recycling and product stewardship programs.

Vinidex continues to expand the use of PVC recyclate material (see earlier section). Manufacturing operations focused on projects to reduce specific energy consumption and water use as well as systems for recycling of materials other than plastics such as timber packaging, diverting waste from land fill.

PSP 2007 Commitment:

- *Signatories agree to consider the whole-of-life in the development of new PVC products, taking into account the end-of-life of the product and appropriate waste management options.*

Consumer Responsible Care

PSP 2007 Commitment:

- *Signatories manufacturing PVC products commit to disseminate publicly, through company websites or other appropriate media, information pertinent to the final consumer of their products on how to and where to reuse, recycle or dispose of their product safely.*

In order to assist end-consumers and users of PVC products with how to manage the product at the end of its life, Signatories have agreed to provide information on how to safely reuse, recycle or dispose of the product. As at the end of 2007, five Signatories out of 15 for whom it is relevant have fully complied with this commitment.

Aperio, Australian Vinyls, Polyflor and Plaspak currently use their websites to share information with consumers on use and disposal/recycling of products. **Tarkett** shares information on end-of-life of their products in marketing material.

The commitment is also relevant for **Armstrong, Australian Plastic Profiles, Innua, Iplex, Nylex, Olex, Pipemakers, Pliant, Tyco and Vinidex**. **Armstrong** are currently running a pilot program on the take back of end-of-life floor tile and sheet. Upon successful completion of the pilot program, **Armstrong** will generate a statement on its website informing end customers of the options.

Australian Plastic Profiles and **Pipemakers** plan to make progress on communicating end-of-life options for their products in 2008. **Innua, Polyflor** and **Nylex** all continue to assist their customers with the end-of-life of their products with technical support and the use of Material Safety Data Sheets.

The **Vinyl Council** provides information via its website, brochures and media articles on PVC recycling and disposal. The organisation regularly receives inquiries about end-of-life PVC products and directs enquiries to appropriate reproprocessors or product manufacturers.

Commitment five: research

PSP 2007 Commitment:

- *Monitor national and international developments in scientific research relevant to the potential health and environmental impacts of the PVC product life cycle. Share information with other Signatories and responsible Authorities and Agencies. Where data is required but unavailable to answer significant and material questions about the health or environmental impact of PVC products or raw materials in Australia, make appropriate endeavours to secure the*

Information sharing in 2007

At each Technical Steering Group (TSG) meeting, the opportunity to share news of research and industry developments was included on the agenda. The following are examples of research and development discussed:

- PVC plasticisers including alternatives to phthalates.
- UNEP global framework for international action on mercury, lead and cadmium.
- US Green Building Council Report - Assessment of the Technical Basis for a PVC-related Materials Credit for LEED, February 2007.
- The European PVC industry's Vinyl 2010 Progress report.
- Monash University Engineering Cleaner Production Assignments.
- Trends in world PVC resin and PVC additive markets.
- Australian Carpet Industry certification standard for EMS.
- EU Risk Assessment findings for organic tin stabilisers.

In addition, the following speakers presented at TSG meetings during 2007:

- Robyn Hageman, Communications Manager of the Vinyl Council presented findings and recommendations from the Vinyl Council's Stakeholder Engagement Research relevant to the Product Stewardship Program.
- Dr Tony Marker from the Australian Greenhouse Office discussed the "Your Home" and "Your Building" guides and their approach to PVC.
- Maree Lang, Director, Industry Development - Sustainability, PACIA, gave an update on the Australian Life Cycle Inventory Database Initiative and plastics data.

Commitment six: public reporting



The deadline for publishing this report was unfortunately not met, despite an improvement in the data collection process from Signatories. Data collection commenced in late January 2008 and data was received more promptly this year compared to previous years. However, verification of the Signatories data and the draft report did not occur until July/August 2008 and took some time to complete.

Despite our best efforts to meet the deadline, our limited resources and the complex nature of assessing and compiling data from 26 Signatories has led us to extend the target publishing date for future reports to 31 August.

Updates on key issues such as vinyl chloride, phthalates and stabiliser use have been included in the report.

Five Year Evaluation

The Vinyl Council under the guidance of the Technical Steering Group completed a review of the implementation and effectiveness of the Product Stewardship Program since its launch in 2002. The review considered

- Feedback on the Program received from stakeholders;
- Analysis of other product stewardship programs and a comparison of our Program with these;
- Consideration of government policy trends related to product stewardship, waste, extended producer responsibility and voluntary industry programs;
- Evaluation of the Program's commitments in terms of key criteria: appropriateness, commercial feasibility, practicality and impact.

Key findings

The review found that the Program had evolved in five years with new, refined and expanded commitments. The Program was found to be unique compared to other Product Stewardship Programs in Australia because of its whole-of-life cycle focus and supply chain support.

The review found that the industry had achieved milestones in phasing out lead and cadmium stabilisers, manufacturing emissions and recycling. Greater focus on life cycle thinking, recovering end-of-life product and recycling would be required in the future.

The Signatories to the Program identified value in participating in an industry scheme and in this Program, in particular, to support life cycle thinking within their companies. However, future commitments need to be practical, measurable and verifiable. It was recognised that this requirement increases demands on Signatories which will need to have robust systems in place and supporting resources to ensure they can meet the commitments and, most importantly, demonstrate compliance and improvement. A small number of commitments were found to need refinement in order to improve their practicality and measurement.

The Technical Steering Group was unanimous in its support for continuing the Program, subject to a further evaluation in 2012.

Recommendations from the report will be addressed by the Technical Steering Group in 2008. A copy of the Evaluation Report is available on the Council's website in the Publications section at www.vinyl.org.au

PSP 2007 Commitments:

- *Publish the 2007 progress report by 30 June 2008, together with an updated review of product stewardship issues.*
- *Review and report on the implementation and effectiveness of the Product Stewardship Program by 31 December 2007.*

2008 Action:

- *Publish the 2008 progress report by 31 August 2009, together with an updated review of product stewardship issues.*

Some key recommendations

- *Consider formal feedback channels and processes*
- *Present progress annually to stakeholders*
- *Consider co-regulatory approaches to underpin the Program*
- *Improve practicality and measurability of some commitments*
- *Develop strategies to maintain and expand number of Signatories*
- *Continue to build relationships across the supply chain to facilitate companies take responsibility for their products*
- *Encourage continuing transparency.*

Verification

As with last year, this year's report has been independently verified by NetBalance Foundation. The objective of the verification process is to provide an independent opinion on the accuracy of the data and statements made in the Report.

Four of the recommendations by NetBalance from last year's verification have been completed. These related to improvements in the electronic data collection form, access to data by the verifying body, and the Environment Management System commitment. Other recommendations relating to Signatories' internal processes for data measurement, collection and coordination, have not yet been progressed.

For this 2007 report, the verification process involved four Signatory site visits to examine data sources and verify data/statements and four Signatory desktop data audits, verified by telephone. The methodology uses a specified set of principles and standards to assess the quality of a Signatory's reported data and the organisation's underlying systems, processes and competencies that underpin its performance. Olex was to be subject to a desktop audit but at the time of publication had not submitted data as requested by the verifier. Olex, a cable maker, withdrew from the Program in 2008.

Verification identified five instances of misinterpretation of commitments, three of which related to the Consumer Responsible Care commitment. This highlights a need to provide clearer reporting requirements as to what constitutes compliance.

Another of the misinterpretation errors related to reporting against a commitment not relevant to the Signatory and the remaining error to the Vinyl Council misinterpreting Signatory data submitted in the draft report.

There were three transcription errors, two of which were where Signatories did not report results against Commitments during data collection; however subsequent auditing confirmed compliance.

Compliance reports will be presented to each Signatory stating the relevant Commitments to their business and their compliance status to help improvement in progress going forward.

Feedback

During 2007, the Vinyl Council conducted some independent research into its engagement with stakeholders, including the non-industry members of the Technical Steering Group. The research, conducted by Fenton Communications, found that a broad range of stakeholders valued the Product Stewardship Program and engagement with the industry through the Technical Steering Group. The recommendations arising from the research specific to the Program include:

- conducting information seminars to report annual progress and to present the annual report to stakeholders;
- continuing to invest resources in the Technical Steering Group, where possible, extending membership to a wider range of stakeholders;
- identifying and responding to future gaps in research by engaging an objective, third party to undertake research and using stakeholders to determine the research's terms of reference.

In response to the feedback, invitations were extended to Sustainability Victoria and the Green Building Council to join the Technical Steering Group.

2008 Action

- *Provide Signatories with Compliance Reports*
- *Provide clarification on reporting requirements for each commitment*

2008 Action

- *Conduct annual presentation to stakeholders on progress and developments under the Program.*

Representatives from these bodies are now ‘observers’ to the Program and receive agendas, minutes and meeting papers. Information seminars were planned for Sydney and Melbourne in 2008.



Feedback on the Product Stewardship Program by members of the Community, and our responses, has been published on the Vinyl Council’s website at www.vinyl.org.au.

We welcome feedback on the report and the program itself. If you would like to comment, please contact us at P.O. Box 211 Richmond, VIC 3121 or email info@vinyl.org.au, or call 03 93686171.

Commitment seven: Technical Steering Group

Membership of the TSG has remained fairly stable. In 2007, representatives from Tarkett and Welvic Australia joined the Group. Invitations were extended to Sustainability Victoria and Green Building Council to join, however both elected to act as observers and participate as and when necessary.

***PSP 2007 Commitment:**
Discharge Technical Steering Group responsibilities as outlined in the 2002 Commitment.*

Members of the Technical Steering Group 2007	
Member	Organisation
Sophi MacMillan	Australian Vinyls Corporation Pty Ltd Vinyl Council of Australia
Alex Hruza	Chemson Pacific Pty Ltd
Mike O’Shea	CSIRO
Angela Gillman	Dept of Environment, Heritage Water and the Arts
Alan Whittle	Iplex Pipelines Australia Pty Ltd
Alex Young	NSW Dept of Environment and Climate Change
David Williamson	Nylex Films and Fabrics
David Janetzki	Olex Cables Australia Pty Ltd
Paul Martonhelyi	Plastral Pty Ltd
Tom Elovaris	Pliant Corporation Pty Ltd
Ian Lilja	Sun Ace Australia Pty Ltd
Brenton Coles / Colin Bray	Tarkett
George Macovaz (Chairman)	Vinindex Pty Ltd
Lia Anna Maiorino	Vinyl Council of Australia
Stephen Dowling /Matthew Hoyne	Welvic Australia Pty Ltd

Year	No of TSG Meetings
2003	4
2004	4
2005	4
2006	4
2007	4

Glossary

Australian PVC industry (the industry): For the purpose of this document, the Australian PVC industry is the Vinyl Council, its member companies and other PVC companies which are Signatories to this Program.

BBP:

ylbenzyl phthalate

But

Converter: a manufacturer of PVC product from resin or compound.

DBP:

utyl phthalate

Dib

DEHP:

hylhexyl phthalate

Diet

DIDP:

odecyl phthalate

Diis

DINP:

ononyl phthalate

Diis

EMS: Environmental Management System

MRF: Materials Recovery Facility

NPC: National Packaging Covenant

The Program: the Product Stewardship Program, signed by members of the Australian PVC industry.

Phthalate Plasticiser: Softeners from the phthalate family of chemicals added to PVC resin to impart softness and flexibility to products requiring those attributes.

PVC (Vinyl): Polyvinyl chloride

Signatories: the members of the Australian PVC industry who have signed the Program as an indication of their commitment to product stewardship.

Stabiliser: A compound used as an additive in the manufacture of PVC products to improve the thermal stability during processing and the heat and/or UV stability of the end-use product.

Stakeholders: The PVC industry, its employees, suppliers and customers, the local and general communities, consumers, government and regulators, and any other groups significantly impacted by the industry.

Signatories

As at the end of 2007, the Product Stewardship Program Signatories are:

Aperio Group (Australia) Pty Ltd	Plaspak Pty Ltd
Armstrong World Industries (Australia) Pty Ltd	Plastral Pty Ltd
Australian Plastic Profiles Pty Ltd	Plastics Industry Pipe Association
Australian Vinyls Corporation Pty Ltd	Pliant Corporation Pty Ltd
Chemson Pacific Pty Ltd	Polyflor Australia Pty Ltd
FPI Compounds Pty Ltd	Sun Ace Australia Pty Ltd
Innua Australasia Pty Ltd	Tarkett
Iplex Pipelines Australia Pty Ltd	Techplas
Nylex Industrial Products	Terminals Pty Ltd
Olex Australia Pty Ltd	Tyco Water Pty Ltd
Orica Chemnet	Vinidex Pty Ltd
Pacific Plastics (QLD)	Vinyl Council of Australia
Pipemakers	Welvic Australia

Note: Prior to publishing this report in mid-2008, there may have been further changes to the list of Signatories. The current list is available on the Council's website at <http://www.vinyl.org.au/product/signatories>

Change of Signatories

During 2007, Welvic Australia became a Signatory to the Program. One Signatory, Polvin Compounds, did not renew Program membership in 2007.

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INDEPENDENT VERIFICATION STATEMENT

To the Signatories and Stakeholders of the Vinyl Council of Australia:

The Vinyl Council of Australia (VCA) commissioned Net Balance Foundation (Net Balance) to provide a statement, representing our independent opinion on the integrity of information presented within "Vinyl Council of Australia Product Stewardship Progress Report 2007" (this report). This is the sixth year of the PVC's industry's Product Stewardship Program (PSP) and the fourth progress report by the organisation. The VCA was responsible for the preparation of the report and this statement represents Net Balance's independent opinion. Net Balance's responsibility in performing our verification activities is to the Signatories of the VCA alone and in accordance with the terms of reference agreed with them. Other stakeholders should perform their own due diligence before taking any action as a result of this statement.

Verification Objective

The objective of the verification process is to provide VCA and its stakeholders with an independent opinion on the accuracy of the information presented within the report. This is confirmed through verification of the information provided during site visits and at a broad desk-top level, reviewing underlying systems, processes and competencies that support the claims made within this report.

Verification Process and Limitations

The verification process was undertaken during July to August 2008 and involved:

- a review of the accuracy and source of statements made in the PSP database and the report through examination of over 103 selected data points for the purpose of verifying that the commitments were met;
- undertaking site visits and examining site-based data at four signatory sites;
- reviewing data from an additional three signatory sites by desk-top assessment, and by telephone and e-mail dialogue (four sites were initially selected however one signatory failed to submit data within the given timeframe);
- completing a logic test on the data submitted by the remaining signatories to ensure what has been submitted by the organisations not verified is compatible and consistent with data submitted by organisations subject to verification;
- reviewing the PSP 2007 Progress Report and verifying data and statements within the report that were aggregated from data submitted by signatories; and
- providing this independent verification statement and brief report on findings.

Signatories that were subject to the site-based review:

- Australian Vinyls, 65 Leakes Road, Laverton, Victoria.
- Orica Chemnet, Level 8, 1 Nicholson St, Melbourne.
- Aperio Group, 162 Garnet Rd, Kirrawee, NSW
- Welvic, Orica site, Gate 3, Deer Park, Victoria.

Signatories that were subject to the desktop review:

- Iplex Pipelines, 35 Alfred Road, Chipping Norton, NSW.
- Tarkett Australia, 16 Anella Avenue, Castle Hill, NSW.
- Innua Australasia, Suite 23 / 1, Gladstone Road, Castle Hill State, NSW.

Olex Australia was also selected for the desktop review however failed to submit data within the required timeframe.

The verification process was subject to the following limitations:

- The process was undertaken through a review of data provided by VCA and the seven selected signatories to the PSP. Interviews were conducted with data owners in person for the four signatories selected for the site-visit; and by email and telephone for those three signatories that were selected for the desktop review.
- The remaining data was subjected to a logic test and this sampling methodology was selected to give an appropriate representation of the signatory group, and it is expected that future verification programs will select different signatories to compile a sample in order to give a fuller picture of the PSP going forward.
- A desktop review of information provided by the VCA was also conducted.
- The PSP Progress Report was reviewed within the context of considering the data that was submitted to the Vinyls Council via the PSP database.
- The scope of work was limited to verification of data and statement accuracy and did not extend to a AA1000 assurance process.

Our Independence and Credentials

Net Balance was not responsible for preparation of any part of this report. Net Balance has not undertaken any commissions for VCA in the reporting period concerning reporting or data collection. Independence was ensured by selecting a verification team that had no other involvement with VCA during the reporting period that could impair the team's independence or objectivity. The team comprised of individuals with expertise in environmental and social performance measurement. The verification team has collectively undertaken over 80 verification or assurance engagements in Australia over the past 10 years and is also led by a Lead Sustainability Assurance Practitioner (Lead CSAP) accredited by the Independent Register of Certified Auditors (IRCA UK).

Our Opinion

Based on the scope of the verification process, the following represents Net Balance's opinion:

- The findings of the verification engagement provide confidence in the reporting processes established. The level of data accuracy was found to be within acceptable limits, but some additional improvements to data management are recommended to reduce potential for minor anomalies.
- Data trails selected were easily identifiable and traceable, and the personnel responsible were able to reliably demonstrate the origin(s) and interpretation of data.
- The statements made in the report appropriately reflect the environmental performance achieved during the period.
- All suggested changes were satisfactorily addressed by VCA prior to finalising the report.

Conclusions and Recommendations

The following key recommendations are made:

- It is recommended that internal processes for the measuring and reporting of progress against commitments and actions plans, as well as specific environmental, health and safety data, be further developed by the VCA and each of the signatories to the program, reducing potential for human error or loss of intellectual property through natural staff turn-over, which are key risks in performance measurement and reporting.

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INDEPENDENT VERIFICATION STATEMENT

- Continue to engage and consult with VCA's internal and external stakeholders through the established engagement processes, and expand the content of the engagement process to include obtaining stakeholders' opinion on reporting performance, in particular their requirements of the report.
- Continue to use the sampling approach applied to this project in future verifications to ensure that selection of signatories for verification is methodical and varied from year to year.
- Net Balance has also provided additional suggestions for reporting improvement in some areas which have been outlined in a more detailed report presented to the VCA.

Overall, the auditor is satisfied that the report is an appropriate representation of the sustainability performance of the signatories to the VCA in relation to the PSP during the reporting period.

On behalf of the verification team

3rd September 2008

Melbourne, Australia



Terence Jeyaretnam

Director, Net Balance & Lead CSAP (IRCA UK)

Vinyl-2-Life Action Plan Progress Report

As at 31 December. 2007

Objective 1 Cables	Actions	Timeline	Progress to Date
Investigate current recovery and recycling, including: <ul style="list-style-type: none"> • how effective is existing infrastructure? • what barriers to recovery exist? • what parties are/would be involved in recovery? • what programmes for recovery exist overseas and what are the better practices? 	1. Coordinate recovery and recycling of cable waste for three month trial period. Measure and report progress.	April-June 2007	Done. One 8 tonne trial has been successfully run. Olex confirmed that recycle not feasible for reuse in new cable products. That is, closed loop recycling not feasible due to copper contamination. Recycling of cable waste to continue now that trial is complete.
	2. Identify other sources of PVC cable waste: - Promote the capability for re-processing contaminate granulated cable.	Dec-Mar 2008	Discussions with re-processor regarding current cable recycling activities have continued. Re-processor reported increase in sources of cable scrap. Sourcing cable is a major issue as metal recyclers seem to be exporting whole cable overseas for recycling, therefore little PVC cable scrap is unavailable in Australia for reprocessing. Flyer on cable recovery distributed to Australian Metal Recyclers Industry Association (AMRIA). Presented information to Australian Metal Recyclers Industry Association AGM to promote recycling of PVC cable scrap. Previous inability to re-process granulated cable scrap with metal and PE content was stated as the reason for sending cable off shore. Separation of PE and metal from PVC is now possible here in Australia.

Objective 2 Pipes & Profiles	Action	Time Line	Progress to date
Develop a more consistent supply of pipe & profile material for reuse/recycling	1. Maintenance of Recovery Program in Sydney, Melbourne, Brisbane.	Ongoing	<p>Collection continues relatively smoothly. All projects are active. Due to the expansion of businesses, waste management companies have sort larger premises and required relocation (all cities).</p> <p>PIPA is committed to produce collection data for 2007 and should then be in a good position to develop estimates for 2008.</p> <p>Waste pipe washing facilities must be established at each location to maximize recovery of PVC pipes that are suitable for conversion into new pipes.</p>
	2. Identify additional sources of waste which can be reprocessed by pipe makers: - investigate sources of window off-cuts waste	June 2007	<p>A new recycler is in the market. They are interested to collect all window profile offcuts. VCA to meet with recycler to discuss other types of scrap that they are able to process.</p> <p>Referred non-pipe material to recycler eg windows, credit cards etc.</p>

Objective 4 Floor Coverings	Action	Time Line	Progress to date
Understand work currently being undertaken in Australia and overseas to assess feasibility for expanding recovery of floor coverings	1. Identify potential recyclers/reprocessors of vinyl floor coverings both in Australia and overseas.	March 2007	Done. Two reprocessors engaged in discussions with vinyl sector.
	2. Develop a commitment with relevant Signatories to trial recovery of end-of-life flooring and installation off-cuts when fitting new vinyl floor coverings.	March 2007	End of Life reprocessing trials are being conducted and information sought from all flooring suppliers about recycling activities. Signatories are committed to developing appropriate and feasible product stewardship policies in respect of EOL flooring. Further discussions held with 3 Signatory members and 1 non signatory member to discuss Commitment and to move towards developing programs to support Commitment.
Objective 5 Bottles	Action	Time Line	Progress to date
Support the Vinyl Bottle Group in continually enhancing recovery and local recycling of PVC bottles	1. Actively engage with the Vinyl Bottle Group to support their activities.	Ongoing	VCA has agreed to the financial management of the Vinyl Cycle program. Maintaining active involvement.
	2. Promote the view that sleeves/labels used on plastic containers be compatible with the container polymer for recycling purposes.	December 2006	Done. Statement posted to website
Objective 6 Blister Packaging	Action	Time Line	Progress to date
Investigate the feasibility of recovering PVC blister and thermoformed packaging	Identify any opportunities to work with stakeholders in recovery of this waste.	Ongoing	Discussed further with Packaging Stewardship Forum, expressing our interest in advancing this issue.
Objective 7 Automotive Products	Action	Time Line	Progress to date
Investigate opportunities for PVC recycling in the automotive sector.			Done. No further action at this stage.
Objective 8 Management	Action	Time Line	Progress to date
Establish Waste Sub Committee.	Report Waste Sub-Committee progress quarterly.	March 2008	Waste Sub Committee established and first meeting held.