MEDIA BACKGROUNDER

PVC production in Europe

April 2011

Polyvinyl chloride, or PVC, is one of the most widely used polymers in the world. Due to its versatile nature, PVC is used extensively across a broad range of industrial, technical and everyday applications from window profiles and blood bags to credit cards and raincoats.

Composed of salt (57%) and oil/gas (43%) PVC was first produced commercially in the late 1920s after additives were blended into this mixture to create a plastic which quickly became popular for its flexible, durable and cost-effective qualities.

PVC has always been regarded a resource efficient material due the long lasting nature of most of its applications. In recent years, the European PVC industry has taken further steps to enhance the contribution of PVC to sustainable development throughout its life cycle by means of a pioneering voluntary commitment on collection and recycling, responsible use of additives and research and development of innovative new technologies – known as Vinyl 2010.

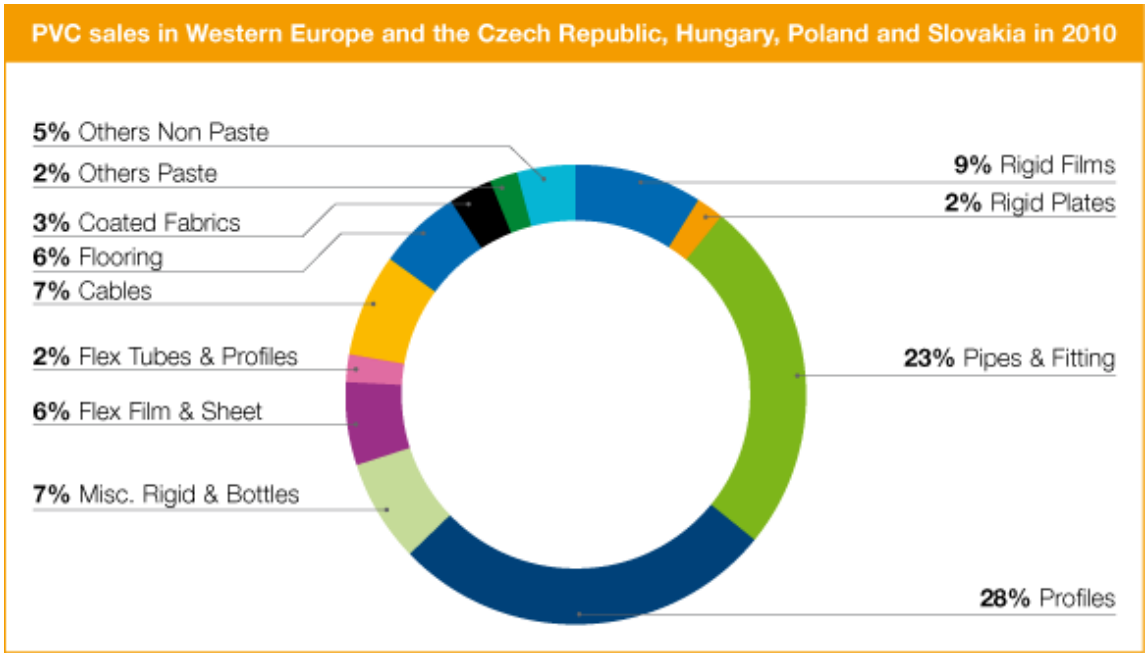
Uses of PVC

PVC contributes to making life safer, more comfortable and more enjoyable. In addition, few other materials can match its cost-performance characteristics.

PVC brings important benefits to products and applications in areas as diverse as construction, automobile manufacturing, medical devices, electric and IT cabling, packaging and fashion. With its flexible nature, PVC helps to make cars lighter, more resistant against corrosion, enable windows to last longer, allow fresh water saving through durable piping, and store blood to save or improve the quality of people's lives.

PVC applications also continue to function effectively for much longer than when alternative materials are used in similar situations. This can extend up to and over 60 years in the case of many cables, pipes and window profiles. As a result, PVC has the advantage of remaining in use for a long period before it enters into the waste chain. In addition, PVC products need minimum maintenance, and hence very limited additional consumption of energy, raw materials and chemicals is necessary to ensure their continued functionality.

The construction sector alone uses approximately 60% of all the PVC produced in Europe each year. Examples of typical products include pipes, window frames, flooring, cables and roof membranes.



The PVC sector in Europe

Global demand for PVC is around 35 million tonnes a year. Within this total, European industry produces around 8 million tonnes of products for both domestic consumption and export to third countries, with a market value of €80 billion.
As with all industries, demand for PVC products reduced somewhat as of 2008 as a result to the global recession. While the cost-efficiency of PVC makes it an even more valuable resource in tightened economic circumstances, the slowdown in activity across a range of sectors in Europe saw consumption of PVC raw material fall back to 5 million tonnes in 2009 from a peak of 6.5 million tonnes in 2007.

In 2010, the PVC sector showed signs of recovery and European consumption of PVC resin rose to 5.4 million tonnes due in part to improved performance in Eastern Europe.

The PVC industry employs over half a million people in Europe across 21,000 different companies, including many small and medium sized firms. This includes the whole industrial chain, from resin manufacturing to the production of end products.

At European level, the PVC industry is represented by four associations:

- **ECVM** (the European Council of Vinyl Manufacturers), representing the 13 European PVC resin producing companies which account for almost 100% of the current total EU-27 PVC resin production. These businesses operate around 60 different plants spread over 35 sites and employ approximately 10,000 people.
- **ESPA** (the European Stabilisers Producers Association), representing 11 companies which produce more than 98% of the stabilisers sold in Europe. They employ some 5,000 people.
- **ECPI** (the European Council for Plasticisers and Intermediates), representing the 7 major European plasticiser and intermediate producers that employ approximately 1,200 people in plasticiser production.
- **EuPC** (the European Plastics Converters), representing close to 50,000 companies in Europe that produce over 45 million tonnes of plastics products of various types every year. EuPC estimates that

around 21,000 of these businesses (many of which are SMEs), employing over half a million people, are involved in the conversion of PVC into final home and industrial products.

PVC and sustainable development

As noted above, PVC has always had important qualities which meet key sustainability criteria. For a start, it is far less oil dependent than another major thermoplastic. It is also highly durable and energy efficient across a range of applications which makes for an extremely effective use of raw materials and avoids unnecessary depletion of natural resources.

Viewed across its life cycle PVC is therefore a highly competitive material in terms of its environmental impact. Several recent eco-efficiency and Life Cycle Assessment (LCA) studies on the main PVC applications show that in terms of energy requirements and GWP (Global Warming Potential) the performance of PVC is at least equal to that of alternative products, and, in many cases, PVC applications show advantages both in terms of total energy consumption and in terms of low CO_2 emissions.

However, a unique advantage of PVC, compared to other materials, is the possibility of changing the formulation to improve the safety and eco-efficiency of the final product, while maintaining the same level of technical performance.

This has allowed the European industry to make huge strides in the past ten years to enhance the sustainable use of PVC throughout its life cycle without in any way compromising its cost-performance benefits. Under the pioneering Vinyl 2010 voluntary commitment launched in 2000, the PVC industry has succeeded in meeting or exceeding a series of ambitious ten year targets including:

- The recycling by end 2010 of an additional 200,000 tonnes/year of unregulated 'post-consumer' PVC waste beyond what was already covered by European legislation on end-life-vehicles, electric and electronic equipment and packaging and the limited amount of post-consumer waste already recycled in Europe in 1999[1];
- The phase out of cadmium stabilisers and significant steps to replace lead stabilisers totally by 2015;
- Ongoing research on the part of the plasticiser industry in order to provide scientific studies and expertise to help policy makers develop well informed decisions;
- A Research and Development programme on new recycling and recovery technologies, including feedstock recycling and solvent-based technology;
- The implementation of a social charter signed with the European Mine, Chemical and Energy Worker's Federation (EMCEF) to develop a social dialogue as well as training, health, safety and environmental standards.

[1] From 'Vinyl 2010 – Voluntary Commitment of the PVC industry', October 2001 (p.2): '*The recycling in 2010 of 200,000 tonnes of post-consumer PVC waste. This objective will come in addition to 1999 post-consumer recycling volumes and to any recycling of post-consumer waste as required by the implementation after 1999 of the EU Directives on packaging waste, end-of-life vehicles and waste electronic and electrical equipment*' (*www.vinyl2010.org/library/voluntary-commitment.html*)

These concrete results of voluntary actions on the part of the industry have helped significantly improve the image and appeal of PVC as a material of choice for sustainable purchasing in Europe.

Vinyl 2010 has received broad recognition within and outside the industry and has been acknowledged for its contribution to enhancing the sustainable uses of PVC in a recent report setting draft guidelines on green procurement commissioned by the European Commission. [2]

Not content to sit still, the industry is constantly striving to improve production process and products, to invest in innovative technology, to minimize emissions and waste and to increase the scope and volume of collection and recycling of PVC.

A new industry voluntary commitment, VinylPlus, will be launched in June 2011 and will set even more ambitious targets with a view to realising the full market potential and societal benefits of sustainably produced PVC.

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[2] Green Public Procurement – Windows Technical Background Report – European Commission, DG Environment, 2010