



PV TRACING PAPERS®

Scientific data on health and the environment.

2005, Number 15
Second Quarter

Restricted Distribution

www.pvtracingpapers.org

IN THIS ISSUE:

- ◆ **EU:** Good practices guide on waste plastics recycling, a guide by and for local and regional authorities.
- ◆ **DENMARK:** The association between asthma and allergic symptoms in children and phthalates in house dust: a nested case-control study.
- ◆ **UNITED KINGDOM:** Recycling of organic-coated steels and the potential recycling of organic-coated steels show very low dioxin emissions.
- ◆ **AUSTRIA:** The Contribution of plastic products to resource efficiency.
- ◆ **UNITED STATES:** Follow-up study of adolescents exposed to di-2-ethylhexyl phthalate (DEHP) as neonates showed no significant adverse effects.

FOREWORD

This newsletter aims to provide a platform for objective and scientific information on a subject often scrutinised by regulatory authorities, namely the life cycle of PVC and its applications. In this issue, some of the latest studies or reports related to the PVC life cycle are reported. We hope that this will help you to find your way in this debate.

The previous editions of the newsletter as well as this one are also available, with a convenient classification system by theme, on the website: www.pvtracingpapers.org.

EU: Good practices guide on waste plastics recycling, a guide by and for local and regional authorities.

This guide seeks to bring together information from many sources to help L/RAs identify the practical issues associated with collecting and processing waste plastics, while identifying the approaches needed to manage and exploit these wastes in ways which best suit their individual characteristics. The guide is published by the ACRR (Association of Cities and Regions for Recycling), an international network of local and regional authorities across Europe and beyond. Established in 1994, the association provides a resource through which the exchange of information and experiences on municipal waste management can be facilitated, particularly in the areas of prevention at source, recycling and recovery.

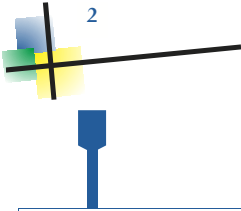
Reference: [http://www.acrr.org/projects/pdf/Plastics/ACRR-pasticsUK\(lo-res\).pdf](http://www.acrr.org/projects/pdf/Plastics/ACRR-pasticsUK(lo-res).pdf)

Danemark: The association between asthma and allergic symptoms in children and phthalates in house dust: a nested case-control study.

Bornehag et al. (2004) report statistically significant associations between BBP levels in dust and the induction of rhinitis and eczema and between DEHP levels in dust and asthma. They assert that the different associations "can be explained by a combination of chemical physical properties and toxicological potential." and that the results have "global implications." In the July 24 issue of Science News Danish Toxicologist Gunnar Damgaard Nielsen of the National Institute of Occupational Health in Copenhagen said: "whether there is a causal relationship between phthalates and promotion of asthma is not clear." In its analysis, Bornehag's group didn't include factors that influence the abundance of allergens, such as a home's humidity and cleanliness. Furthermore, Nielsen notes, vinyl flooring is often used in buildings with other cheap materials, some of which may independently promote the growth of allergy-causing moulds and dust mites.

Reference: CG Bornehag; J Sundell; C J Weschler; T Sigsgaard; B Lundgren; M Hasselgren; L Hagerhed-Engman, *Environmental Health Perspectives*, online July 15, 2004 *Environ Health Perspect* 112(14):1393-1397, 2004. © 2004 <http://ehp.niehs.nih.gov/members/2004/7187/7187.html>

.../...



United Kingdom: Recycling of organic-coated steels and the potential recycling of organic-coated steels show very low dioxin emissions.

There were concerns that, because of the nature of this material, there was a potential for dioxin formation leading to increased emissions. This paper describes a comprehensive study into the recycling of steel coated with Plastisol, a material based on polyvinyl chloride. Results showed that the addition of OCS did not cause a significant increase in the emission of dioxin compounds. Dioxin emission concentrations were very low and generally within ranges previously obtained at other Corus UK steel-plants.

Reference: Recycling of organic-coated steels and the potential recycling of organic-coated steels and the potential for dioxin emissions. David R. Anderson, Raymond Fisher, Richard A. Leonard and Ian Russon Corus R D & T, Swinden Technology Centre, Rotherham, UK. Phone +44 1709 820166 2 Corus Strip Products UK, Port Talbot, UK 3 Corus Colors, Shotton, UK.

Austria: The contribution of plastic products to resource efficiency. Estimation of the savings of energy and greenhouse gas emissions achieved by the total market of plastic products in Western Europe.

The goal of this study was to estimate the savings of energy and greenhouse gas emissions achieved by the total market of plastic products (compared to theoretical substitutes) in Western Europe by means of a projection based on a sufficient number of examples. About 21 % of the total market of plastic products cannot be replaced realistically by other materials. Only very few plastic products consume more energy than possible substitutes made of different materials. Most plastic products need less energy to be produced, and additionally many plastic products save significant amounts of energy during the use phase (especially all automotive parts, insulation used in the sectors building and E&E, and packaging products). The GHG emissions saved are equivalent to 30 % of the EU-15 Kyoto target regarding the reduction of GHG emissions. The final conclusions, from the view of the total life cycle, are that plastics can be considered as one of the most energy efficient materials and substitution of plastic products by other materials will in most cases increase the consumption of energy and the emission of greenhouse gases. Plastic products have replaced many washing and cleaning processes in the medical sector. The development of electronic equipment would not have been possible without plastics. Changes in the function and design of processes and services can have a bigger impact on the total energy demand than the effect of different materials.

Reference: The Contribution of Plastic Products to Resource Efficiency. Estimation of the savings of energy and greenhouse gas emissions achieved by the total market of plastic products in Western Europe by means of a projection based on a sufficient number of examples. Vienna, September 2004. Final Report GUA Gesellschaft für umfassende Analysen GmbH Authors: Harald Pilz, Johann Schweighofer, Evelin Kletzer. Sechshauser Straße 83, A-1150 Vienna Tel.: +431 / 892 08 14 E-Mail: office@gua-group.com . Http://www.gua-group.com

United States: Follow-up study of adolescents exposed to di-2-ethylhexyl phthalate (DEHP) as neonates showed no significant adverse effects.

Di(2-ethylhexyl) phthalate (DEHP) is used to make polyvinyl chloride (PVC) plastic tubing soft and flexible. Known treatments that involve high DEHP exposures are blood exchange transfusions, ECMO and cardiovascular surgery. Although potential exposure to DEHP in ECMO patients is significant, it has not been associated with short-term toxicity. To evaluate long-term toxicity, a study of neonatal ECMO survivors was undertaken to assess their onset of puberty and sexual maturity. With the exception of one patient with Marfan syndrome, the rest had normal growth percentile for age and sex. All had normal values for thyroid, liver and renal functions. Sexual hormones were appropriate for the stage of pubertal maturity. The results indicate that adolescents exposed to significant quantities of DEHP as neonates showed no significant adverse effects on their physical growth and pubertal maturity. Thyroid, liver, renal, male and female gonadal functions tested were within normal range for age and sex distribution.

Reference: Follow-up study of adolescents exposed to di(2-Ethylhexyl) phthalate (DEHP) as neonates on extracorporeal membrane oxygenation (ECMO) support. Khodayar Rais-Bahrami, Suzan Nunez, Mary E. Revenis, Naomi L.C. Luban, and Billie L. Short. In : Environment Health Perspectives 112:1339-1340. Doi: 10.1289/ehp.6901 (available at <http://dx.doi.org/>).



Printed on recycled paper

Should you wish to obtain a full copy of one of the above summarised reports, you may contact directly the address indicated in reference or possibly the Publisher. Similarly, if one of your colleagues would like to benefit from this restricted distribution, please contact the Publisher:

EURALIA sa rue du Luxembourg 19-21 B - 1000 Brussels BELGIUM Tel: (32 2) 506 88 20 Fax: (32 2) 506 88 25 E-mail: info@euralia.com

© Copyright 2005 **EURALIA** sa All rights reserved. No reproduction without the publishers' agreement.