

# theaxionnewsletter

**WELCOME** to the Axion Newsletter. This issue includes news about a new WRAP-funded study looking at the feasibility of using recycled polypropylene in food packaging, the UK launch of innovative new recycling containers and Axion's use of additives to create polymers to customers' exact specifications.

## WRAP FUNDED PROJECT TO DEVELOP SUSTAINABLE FOOD GRADE PACKAGING

WRAP (Waste & Resources Action Programme) has recently begun a scoping project with the aim of enabling retailers and brands to use recycled polypropylene plastic in food packaging.

Polypropylene is regularly recycled into industry plastics application (such as buckets and pallets), but until now, recycling it into food grade packaging has not been possible. WRAP has commissioned Axion Consulting, in partnership with Greenstar WES, Fraunhofer IVV and Pira Consulting, to undertake the scoping study to test the process of recycling polypropylene, and the commercial viability of it in food grade packaging. Using polypropylene instead of virgin plastics, for food packaging also presents significant environmental benefits that can be enjoyed by retailers, brands and consumers.



Greenstar WES machinery used in the Polypropylene packaging study

Polypropylene makes up a significant proportion of plastic packaging in the household bin in terms of food pots (e.g. yoghurt pots), food tubs (e.g. margarine), and sauce bottles (e.g. brown sauce), and developing a process to enable it to be recycled is an important next step towards sustainable packaging.

Paul Davidson, WRAP's Special Advisor on Plastics said: "Developing a commercial process for food grade polypropylene is widely seen as the next big challenge for food grade recycling technology. WRAP recognises that the retailers, brand owners and packaging companies all want polypropylene to be available for food grade packaging. However with its many different grades and colours used in packaging, developing such a process will be demanding. We are pleased to be working with experts in this area to help scope this work, and enable the industry as a whole to move towards more sustainable packaging."

Roger Morton, Director of Axion Consulting said: "This is a fascinating and technically challenging development project, which will involve us gaining a more in depth understanding of the issues associated with the feasibility of recycling polypropylene for food packaging. The project will also test whether the food grade High Density Polyethylene (HDPE) recycling process already in existence can be used to recycle polypropylene which meets food grade standards. The findings will help to identify what further technical requirements exist to developing a successful food grade recycling process for polypropylene and what recommendations need to be made to achieve this."

The scoping study ends in late August 2009 and WRAP will be making findings available in the autumn.

## AXION OFFERS ATTRACTIVE RECYCLING OPTION

Axion Consulting has launched an attractive, inexpensive and efficient alternative to unsightly recycling containers for Local Authorities who want to provide recycling facilities in environmentally-sensitive areas, such as conservation sites, parks, shopping centres, stadiums or social housing developments. Axion has been appointed UK agent for SERAC@c, the leading French manufacturer of semi-buried containers for all types of mainstream recyclables, such as glass, plastic, cans and paper.

The system consists of high-capacity plastic containers (HDPE) that are partly hidden up to a 1.5 metre depth with wooden slatted sides above ground. Inside is a



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## AXION OFFERS ATTRACTIVE RECYCLING OPTION

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'carrying bag' capable of holding the recyclables. This bag is easily removed and emptied in less than three minutes using a lifting arm in a simple low-cost, one-man operation.

"We are introducing a European aesthetic, cost-saving and safer recycling concept to the UK," explains Axion's David Wiles, who heads up the scheme. "The container's unobtrusive appearance helps it to blend in with a low visual impact. It's an ideal solution for increasing recycling facilities in areas such as

national parks or heritage sites."

He adds: "Ease of emptying cuts the Health & Safety injury risks associated with heavy wheelie bins and labour costs are reduced as it requires less manpower."

The space-saving system is popular in France with more than 22,000 in use. Containers are available in sizes up to 5,000 litres – equivalent to five wheelie bins and can easily be adapted for a variety of waste collecting applications.

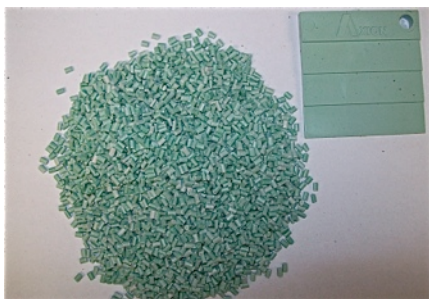
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## NEW SMELLS AND SHADES FOR AXION'S POLYMERS

Axion Polymers has expanded the innovative and technical properties of its high grade Axpoly recycled polymers by adding perfumes and pigments in response to rising customer requests for unusual applications - including some major brand names.

Axion's laboratory experts can adjust the additives or WEEE-derived polymer mix, or source a suitable waste and modify its properties, to optimise the recycled plastic for various product applications - from engineering to furnishing sectors. Other recycled materials are used to add a particular smell, colour or even extra elasticity, to new products.

Trends, according to Axion Director Keith Freegard, are towards more interesting applications, such as solving design issues, adding colour, reducing cost or achieving a lower carbon impact by using recycled content.



Axpoly® PSO1 - coloured green to meet customer's requirements

He explains: "Colour is a popular request and people have

asked whether they can have our PS01 near-white product in green, blue or terracotta like a pot, or to match a certain RAL number. Our trained colourist Steve Bell has developed a colour palette allowing us to mix shades to the customer's specification."

Axion has provided specialist client solutions including tailoring the melt-flow index of its Axpoly polymer with additives to match a particular virgin polymer specification for a non-food packaging container. Another client had a particularly demanding specification for elongation at break – a combination of recycled materials and additives not only matched the virgin specification, but also reduced cost for the customer.

Axion is currently working on a highly-confidential solution for a global company requiring a low-carbon recycled polymer with a specific colour and special odour built in for a furnishing product. Initial samples have successfully incorporated other recycled materials to achieve the desired physical properties.

Keith adds: "It is possible to use really inventive chemical additives with 'magic dust' properties, but at up to £3,500 per tonne, these can also bring high added costs to the end result. We're researching other recycled materials as 'active fillers' to get the same enhanced 'additive' performance, but at lower cost while maintaining the 100% recycled label for the final product."

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