



Technology and product news

A novel PU foam manufacturing process with reduced isocyanate content

The aim of the research project **FreeFoam** is to evaluate a new technique that could reduce the exposure of workers to isocyanates during PU foam manufacturing through lowering the concentration of free isocyanate and reducing their emission to the atmosphere. This EU-funded project is proposing to develop and evaluate a unique, homogeneous reactive mixture for polyurethane foaming purposes where reactants are physically separated using functionalised microcapsules of isocyanate conveniently dispersed in the polyol component.

The reactive system will allow an increase in the mixture reactivity due to the increased compatibility and homogeneity between isocyanate and polyol components, while decreasing the exposure of workers to harmful emissions by lowering the residual monomer content in the foam, thus avoiding the emissions and migration of such components from the foams. In addition, this technique will create a decrease in the volume of waste generated due to bad cell homogeneity and low product density as consequence of bad

mixing process. The expected results include:

- New method for isocyanate encapsulation
- New PU foam formulation based on polyols and micro-encapsulated isocyanate
- New foaming method for PU foam manufacture

FreeFoam brings together a consortium of nine organisations to deliver the project led by **CETEM** (Science & Technology, Spain) and includes **Inspiralia** (Research, Spain), **PolymerExpert** (Research & Development, France), **Tagra** (Research & Development, Israel), **Plama-pur** (Flexible PU producer, Slovenia), **Cosmetic Valley** (Research & Development, France), **Lesarki grozd** (Wood Industry Cluster, Slovenia), **ZCHF** (Chemical & Pharmaceutical Association, Slovakia), and the **British Furniture Manufacturers' Association (BFM)**, UK. Having commenced in May 2013 the project has a planned duration of three years.

Further information can be found at www.freefoam-project.eu

New switch cabinet seal from Sonderhoff fulfils UL 94 HF-1

Sonderhoff Chemicals has introduced the flameproof PU foam seal **Fermapor K31-A-45C4-2-UL-FR**, which complies

with US fire protection standard UL 94 HF-1. The seal also has a UL listing for US testing standard UL 50E for switch cabinets and

electronic housings in non-explosion-proof areas, in addition to UL 508, the US specification for electric switchgear safety. As the independent organisation **Underwriter Laboratories** recently confirmed, the new seal passed the testing criteria for UL 94 HF-1 for fire protection and has been registered as "UL-recognised". During single part tests for the UL 94 HF-1, the property profile for the seal was investigated under the application conditions specified by the UL. It can therefore be used for the sealing of switch cabinets and electronic housings made of metal or plastic in application locations where the stringent US fire protection

regulations apply. Fermapor K31-A-45C4-2-UL-FR, with its "HF-1" UL class, achieved the highest fire protection class for

Switch cabinet with flameproof PU foam seal Fermapor K31-A-45C4-2-UL-FR



PU foams. The seal is therefore classified as self-extinguishing without burning drips, which could otherwise cause their own fire, in accordance with UL 94 HF-1.



Kingspan to use Honeywell's Solstice LBA in insulation panels

Kingspan Insulation has adopted **Honeywell's** next-generation, low global warming **Solstice Liquid Blowing Agent (LBA)** for use in certain high- and premium-performance insulation panels. According to Kingspan, Solstice LBA will enable production of insulation panels used in homes and commercial applications that are 10 % thinner and have lower global warming impact, while keeping their good insulation performance. Solstice LBA has a GWP of 1, which is 99.9 % lower than previous-generation hydrofluorocarbon (HFC) blowing agents. Solstice LBA has the potential to provide a reduced lambda value of as low as 18 mW/mK in Kingspan's

insulation products, says the manufacturer. This reduced lambda value reflects a thinner product, which is a key benefit for end users, especially in buildings and rooms where space is at a premium. Solstice LBA is non-flammable and is not a volatile organic compound. It is approved by the US **Environmental Protection Agency** under the Significant New Alternatives Policy (SNAP) programme and is REACH registered in Europe. Honeywell is currently providing commercial quantities to customers and is building world-scale production capacity for Solstice LBA that is expected to come online in the second quarter of 2014.

