MATERIALS. In the field of plastic materials the following key trends are evident: renewable raw materials have outgrown their infancy and are increasingly acquiring desirable product properties. Polymers are continuing to penetrate into applications which hitherto were the exclusive domains of metals. In the field of flameproofing powerful systems are increasingly being achieved with halogen-free systems.

Set for Special Applications

DuPont de Nemours

Flame-retardant without Halogens

Engineering thermoplastics with optimized properties form the central theme on the booth of DuPont de Nemours (Deutschland) GmbH, Bad Homburg, Germany **(Fig. 1)**. On it the halogen-free flame-retardant plastics for the electrical and electronics industries occupy pride of place. These meet the requirements of class V-0 in accordance with UL94. Zytel FR7025V0F and Zytel7026V0F are unreinforced PA66 grades having high ductility and high tracking current resistance (CTI), e. g. for plugs in household appliances. Zytel FRG25NHV0 is a corresponding glass fiber-reinforced PA66 whose CTI is almost twice as high as that of comparable standard types. In the case of Zytel HTNFR52G30NH a flame-retardant polyphthalamide has been developed whose ductility, thermal stability and tracking current resistance exceed those of standard types. The product additionally provides high resistance to chemicals, moisture and heat. The material is ideally suitable for use in lead-free SMT soldering processes.

A new PET flameproofed with halogen, Rynite RE19041, has properties similar to those of conventional flame-retardant PET grades.

Fig. 1. Custom-made thermoplastics outperform traditional materials (photo: DuPont)

The polyester elastomer, Hytrel RS, is based in part on renewable raw materials. In this 20 to 60 % of the polyols are derived from renewable raw materials. These polyols (Cerenol) are recovered from corn starch.

In automotive applications polymeric materials are found which in the engine compartment area are progressively substituting metallic materials. These have direct contact with hot engine oil.

The inherently nonflammable liquid crystalline plastic, Zenite, allows the low-cost production of light sockets in which it replaces ceramics.

▶ **Hall B4, booth 4201**

PolyOne

Wide Range of Novelties

By acquiring the GLS Corporation the PolyOne Corporation, Assesse, Belgium, has redoubled its commitment to thermoplastic elastomers. The product group comprises SBS and SEBS block copolymers, polyolefin elastomer blends, polyolefins with cross-linked EPDM (TPVs, thermoplastic vulcanisates), thermoplastic urethanes (TPUs) and halogen-free flame-retardant TPE compounds for which a patent application has been filed. The special advantage of these flame-retardant materials lies in that they can replace conventional halogenated TPEs without modifications to the mold.

In cable applications, apart from standard grades formulations having particularly good resistance to UV radiation and the impact of heat with flame retardance are also supplied.

Special applications are very deliberately targeted by the LubriOne compounds which combine a low coefficient of friction with good resistance to wear. In the field of additive masterbatches formulations for combating ant and rodent infestation are provided.

PolyOne offers the OnCap BIO series for use in the area of renewable raw materials. Anti-fog T is itself based on 100 % renewable raw materials and prevents the tarnishing of packaging materials. Impact T is a transparent impact resistance modifier for polylactic acid (PLA). Biopolymer compounds based on PHBV (polyhydroxybutyrate-valerate copolymer) provide materials that decompose within six to nine months when composted. Household, office and bathroom articles can be manufactured from these.

▶ **Hall B3, booth 3214**

Granulat2000

Helpers for Renewable Raw Materials

Among its complete range of additive and colorant masterbatches Granulat2000 GmbH & Co. KG, Troisdorf, Germany, is presenting a new series of products obtained from starch that are biodegradable in accordance with EN 13432. With this new series Granulat2000 is backing the trend towards the sustainability of raw materials.

The polyolefin additive masterbatches exhibit a completely new basis for slip and lubricant masterbatches specially destined for use in the packaging sector. The products are to be supplied both as standard products and also, with a specific customer orientation, tailored to the special needs of individual processors. Naturally, these products too are available with a biodegradable support material.

▶ **Hall B4, booth 4212**

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Comptek

Custom-made Specialists

On account of increased demand for special compounds **(Fig. 2)** and thermoplastic fluorocarbon polymers Comptek Kunststoffverarbeitung GmbH, Diez, Germany, has expanded both its production capacity and its range of products. Among the fluorocarbon polymers a series of compounds based on PVDF, EFTE, FEP and PFA are presented and for polymers for high temperature applications materials such as PEEK, PSU, PPSU, PES and PEI are used. When required fillers such as graphite, glass, mineral and carbon fibers as well as conductive carbon black, nanofillers and pigments are incorporated.

▶ **Hall A1, booth 1008**

Fig 2. Increased demand for special compounds (photo: Comptek)

Bada

Polymer Blends and Compounds

Bada AG, Bühl, Germany, is participating at Fakuma for the second time and is presenting a series of polymer blends which can be modified in accordance with customer wishes. Properly mixed blends combine the various advantages of the base polymers and exclude as far as possible their negative properties. The company's product range includes (PC+ABS), (PC+PBT), (PBT+ASA), (PBT+SAN) and (PA+ASA) blends. The Badamid polyamide compounds cover a wide range of products based on PA6, PA66, PA66/6 and PA6/6T as well as some licensed products. The product range further extends to compounds based on PBT (Badadur), TPE-S (Badaflex), ABS (Badalc) and TPV (Badaprene).

▶ **Hall B1, booth 1309**

Bayer MaterialScience

Simulating Color On-line

In order that the pigmenting of polymeric materials from Bayer MaterialScience AG, Leverkusen, Germany, can be made even more customer-friendly the company is providing an internet platform: www.competenceincolor.com. The desired color formulations can be evaluated by simulation on the screen. The internet platform is seen as a supplement to on-site customer support.

▶ **Hall B4, booth 4208**

K.D. Feddersen

Metal Substitution and Pleasant Feel

The main themes on the booth of K.D. Feddersen GmbH & Co. KG, Hamburg, Germany, are the areas of metal substitution and "Soft-Touch" surface enhancement together with the high-precision field of sensor systems.

The Akroloy polyamide blends provide good alternatives for applications that were hitherto the exclusive preserve of metals. Weight saving, design freedom and high strength are the foundations for further growth into domains previously occupied by metals.

In the field of automobile interior fittings the PP compound Softell will assume an important position. After all, apart from form, color and function it also provides the desired good feel to the touch. The highly innovative automotive industry is playing a pioneering role in the use of engineering plastics based on polyesters for gear and sensor housings. It is hoped that other sectors may also benefit from this know-how.

▶ **Hall B2, booth 2209**

Merquinsa

Custom-made TPU

Quite in keeping with current trends Merquinsa S.L., Barcelona, Spain, is presenting a thermoplastic polyurethane (TPU) consisting of up to 38 % of renewable raw materials. The properties of the product are on a par with those of conventional TPU The company is engaged in the manufacture of TPU special products used in numerous applications, e.g. in automobile interiors **(Fig. 3)**.

▶ **Hall B4, booth 4514**

Fig. 3. TPU applications in automobiles (photo: Merquinsa)

Kometra

Impact Resistant and Good Adhesion

Kometra GmbH in Schkopau, Germany, specializes in the development of plastic modifiers. The products are employed in numerous polymers as bonding agents and impact modifiers. Due to their patented solid phase grafting method products are obtained that contain very low proportions of residual monomers. Using these products even polymers that are difficult or impossible to fuse can be modified.

▶ **Hall A7, booth 7214**

PTS

Cross-linked by Radiation

Self-extinguishing, radiation cross-linkable, glass fiber-reinforced polyamides free of red phosphorus and halogens are supplied by PTS Marketing- & Vertriebs-GmbH, Adelshofen/Tauberzell, Germany. In contrast with conventional products containing phosphorus the PTS products can be produced in all colors. As a result of the cross-linking the potential peak temperatures of the materials are raised so high that they are far above the former melting point of the original substances. Thus, for example, components for use in lead-free soldering can be produced. The materials are elevated into a higher classification by the cross-linking **(Fig. 4)**.

▶ **Hall B2, booth 2114**

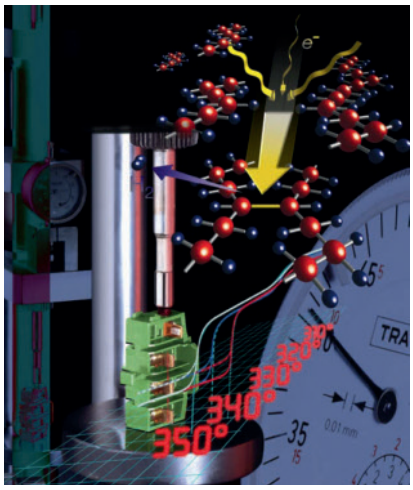

Fig. 4. Cross-linking tester (photo: PTS)

Lifocolor

Combining and Specializing

Lifocolor Farben GmbH & Co. KG, Lichtenfels, Germany, supplies a combination batch for flame retardance and sunscreening which when added in proportions of only 3 to 4 % still meets the requirements of DIN 4102 B2. Hitherto these requirements could only be met by compounds. Other specialties include antibacterial masterbatches, UV agents and lubricants for polyesters as well as nondiscoloring Cu stabilizer batches for polyamide. At the same time Lifocolor is building up its compounding activities. Custom-made compounds are developed according to customer requirements, even small volumes are possible.

▶ **Hall A4, booth 4213**

SKF Economos

Demanding Sealing

As a manufacturer of seals SKF Economos Deutschland GmbH, Bietigheim-Bissingen, Germany, can

achieve demanding solutions only by using high-performance materials. Using special thermoplastic elastomers formulations are achieved that at 100°C are resistant to hydrolysis or inert to mineral oils. Tribological materials employed in unoiled water-based hydraulic systems or pneumatic applications continue to play a role.

▶ **Hall A2, booth 2210**

Akro-Plastic
Just Launched

Akro-Plastic GmbH, Niederzissen, Germany, has expanded its product portfolio by the new Akromid RM series of products. The first two available have respectively 30 % and 50 % glass fiber reinforcement. A characteristic feature is considerably reduced water absorption. Akromid B3 GF 30 RM and B3 GF 50 RM are both products that can exhibit a reduced moisture content while dimensional stability is improved. A product was additionally targeted at improved surface properties. In all of the modified versions it was possible to keep the mechanical properties at almost the same level as in the unmodified standard grades. Typical applications of the new product series are warpage-sensitive housings and connector strips for electronics and automotive engineering or where demands are imposed on a surface.

▶ **Hall B2, booth 2209**

Fipa
Targeted Choice of Material

The importance of selecting a suitable material is demonstrated in the products made by Fipa GmbH, Ismaning, Germany. As a manufacturer of vacuum suction units the desired elasticity, durability and broad range of usage temperatures could only be achieved with a special TPU blend **(Fig. 6)**. Fipa will be represented at the Fakuma exhibition on the stand of its operating partner Krautloher GmbH.

Fig. 6. Vacuum suction unit made from a special TPU mixture for the packaging industry (photo: Fipa)

▶ **Hall B2, booth 2216**

Pröll KG
Surface Finishing

Pröll KG, Weißenburg, Bavaria, Germany, provide an alternative route to giving plastics a highly individual finish. By means of film back-injection technology together with innovative screen and tampon printing inks high-grade surfaces are achieved **(Fig. 5)**.

Fig. 5. Surface finishing: shaver produced with the film back injection technique, printed with Noriphan HTR (photo: Pröll)

▶ **Hall A1, booth 1225**

WMK Plastics GmbH
New from Old

WMK Plastics GmbH, Wuppertal, Germany, has three product lines. The first is regranulated waste material sorted according to type from the product waste of injection molding shops. With this material in comparison with new product, cost savings of the order of 1 Euro per kg can be achieved. The next higher quality level consists of recycled materials that have been blended with new product. The premium quality level is occupied by compounds made from new product that are used for special performance profiles or decorative effects.

▶ **Hall A7, booth 4114**

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