

ROWA news

NEWS FROM ROWA GROUP

ROWA
 MASTERBATCH

Tramaco
ROMIRA
 TECHNISCHE KUNSTSTOFFE

Müller
 KUNSTSTOFFE

ROWASOL
ROWALACK


Ladies and gentlemen,

We made it! After nine months of recession between October 2008 and June 2009 the economic recovery has arrived. The chemical and plastics industries are benefiting from the upswing in the economic cycle earlier than most other industrial sectors and this development has surprised and gratified not only the managements of the big players but also those of the smaller companies.

Business is now picking up again in other industries and at the same time improving sentiment everywhere in Europe and especially in Germany. The cautious GIP growth forecasts of 1.5 percent for 2011 are now being revised upwards by both private and official sources, in some cases up to 3.5 percent. But even though Germany is celebrating its biggest boom since reunification, some skeptical tones are still to be heard here and there.

Many questions still remain unanswered. Nobody can give a convincing explanation of who is responsible for the upswing. There is a saying in Germany that success has many fathers. This success is attributable in part to political strategies, but the responsible attitudes of employers, who in many cases opted for short-time working instead of mass redundancy, have been equally important.

The ROWA Group is confident of maintaining the approx. 25 percent sales growth achieved in the first half of 2010 over the full year, even if demand should prove volatile. Our primary target is maintenance of the group's profitability, even though scarcity and high prices of raw materials will likely make this difficult to achieve. For example, the prices of solvents are now standing at an all-time high and the resulting cost increases cannot be passed on immediately, if at all.

Consequently, the ROWA Group is starting the second half of the year with confidence that is nevertheless seasoned with caution and a dash of skepticism. Proof of this confidence can be found in our decision to press on with capacity enlargements in compound manufacture at both Pinneberg and Lichtenfels. Our group wants to enhance its reputation as an innovative, reliable and flexible supplier, and we shall be emphasizing this at the coming K Show 2010 in Düsseldorf. Come and visit us there at Stand B28 in Hall 8A. We are sure this visit will confirm that your decision to opt for our products was the right one.

We look forward to welcoming you.

Sincerely yours
 Udo Müller

ROWASOL


RAINBOW brings significant production benefits

ROWASOL now offers all its customers a carefully thought-out, clean and detailed solution for working with color and additive concentrates with good flow properties in

extrusion processes. Its new RAINBOW concept is a flexible system that can be adapted to comply with all customers' production standards and requirements. The customer is able to plan optimal capacity use prior to start of production. This, together with a low reject rate, enables them to reduce their production costs, tremendously.

Safe and clean

RAINBOW's highly efficient system is based on a docking station plus a selection of 'monos' supplied to the



customer in specially designed transport and metering units called ViscoTainers. The ViscoTainer simply has to be connected

into the docking station. About 20 Monos are sufficient to generate all customer specific color shades. Apart from colorants a broad variety of additives is provided, such as integrated UV-stabilizers or ROWAcare – as an anti-microbial additive. This opens the door to a completely new level of polymer properties.

In addition to greater flexibility in production, another feature of this pioneering system is its absolute comfort. Production workers have no unintentional contact with the

system's liquid components. The ViscoTainers are sent back for exchange when they are empty. The docking station and the control units for the Monos remain with the customer. Customers are spared the costs of cleaning the system and are not concerned about residues in the colorant packs. Before the used ViscoTainers are cleaned and refilled, they are weighed to determine residual content and the customer only has to pay for the quantity actually consumed.

Current ViscoTainer sizes at the K Show 2010

In order to be able to present this new concept to the market at K-show 2010, Rowasol is currently offering ViscoTainers with capacities of 25 and 1,000 liters. 100-liter units are now under development. Customers will, in the future, be able to calculate higher margins on their smaller production batches.

The system has been thoroughly tested and is already recommended by Bayer Material Science for coloring DESMOPAN®. ROWASOL will be glad to demonstrate the technical components and explain the other benefits offered by the system at the K Show 2010. Visit us at Stand B28 in Hall 8A to see the ViscoTainer, the docking station and the other components.

More information

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ROWA GROUP

The future of the European plastics industry

It is with considerable interest that the ROWA Group has been watching the migration of plastics manufacturing capacity to Asia and, in particular, to the Gulf region over recent years. One effect of the massive plants going up there will be the closedown of as much as one third of the cracker capacity in Europe over the next five years. This gigantic relocation of capacity to near the source of the oil is going to cause some major upheavals in Europe, and the plastics processing industry will be well advised to adjust to the coming changes.

Sabic is expected to make it to world market leadership by 2015, closely followed by Chinese, Indian and other Arabic producers. Output of Europe's cracker plants currently stands at around 450,000 tons per unit p.a. Some of the new plants going on stream in Asia and the Middle East have outputs of 1.0 million tons per unit p.a. or more. This trend seems likely to result in excess capacity that will prevent prices of petrochemical raw materials from soaring to the levels predicted in some forecasts. We



are of the opinion that the current wave of price increases hitting the plastics sector will diminish as the market reacts to the laws of supply and demand.

We ask our customers to understand that we have no alternative but to adjust our prices to take account of current cost levels. We will continue to watch the market closely and take action to make price reductions whenever possible.

The ROWA Group's presence at trade fairs 2010 – 2011



K Show 2010
Rowa Group
18th International Plastics and Rubber Fair
27 October – 3 November 2010
Düsseldorf Exhibition Grounds
Hall 8a Stand B28
<http://www.k-online.de/>

VDI

European Coating Show
Tramaco / Rowa Lack
Nuremberg
29 – 31 March 2011



VDI Conference
Plastics in the Automobile
Romira / Rowa Masterbatch
Mannheim
6 – 7 April 2011

techtexsil

Techttextil
Rowa Lack / Tramaco
Frankfurt
24 – 26 May 2011

Why not take these opportunities to meet the ROWA Group at trade fairs this year and get the latest news on our products.

Broadening of activities in USA



ROWA Inc./Group USA is expanding its activities with immediate effect.

The employees based at the subsidiary in Delran, NJ produce and sell products from the ROWA Group's portfolio, with special emphasis on those from

Tramaco, Romira and Müller Kunststoffe. The group's customer service functions are being steadily enlarged. Visit their web site www.rowainc.net for more details.

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New underwater granulation process now on stream

Color masterbatch producers are constantly faced with new and more complex demands. One such demand now facing Rowa Masterbatch is the supply of specially designed formulations of colorant and additive batches for use with highly specialized substances. In order to enable production of these kinds of products to customary high-quality standards at marketable prices, Rowa Masterbatch has now commissioned an underwater granulation system from the Austrian firm Econ.

The new underwater granulation system has already been integrated into the existing masterbatch production line, and has significantly broadened the spectrum of plastics that can be processed, as well as enhancing product quality and raising productivity.

"The principal benefit is the high product quality achievable right from startup", explains Wulf Hagemeister, the Rowa Masterbatch Technical Manager. "Plus the fact that Rowa Masterbatch can now

produce so-called micro-granules. And the new underwater granulation system significantly boosts the line's output when the larger batches are being produced."

All the operatives were very satisfied too, because the system is so easy to operate. They received induction training from the Econ technician when the new system was commissioned and are particularly enthusiastic about the uncomplicated startup procedure. "This has made our work a lot easier", says Hagemeister.



Underwater granulation in progress

The new system is an excellent example of the high synergy potential within the Rowa Group. The installation's basic design concept was planned two years ago in a project involving close cooperation between Müller Kunststoffe and Econ. This concept is already producing very satisfactory results on some of the Müller Kunststoffe production lines. The know-how obtained there facilitated rapid installation and integration of the new system into the production process.

New strategy for ROWALID Pigment Preparations

Following a strategic analysis of its product portfolio, ROWA Lack GmbH has decided to increase marketing input into its ROWALID Pigment Preparations segment with its range of highly concentrated pigment dispersions that can be used for a large number of typical applications. The formulations of these products contain not only different pigments, but also different synthetic resins (PVC and acrylate) as vehicles.

Wide range of properties

The properties of these products vary according to the manufacturing process used. The basic aim is to ensure maximum distribution of the ROWALID PP pigments. The high concentration and fine dispersion of these pigments give the products a wide tolerance spectrum. They have excellent transparency and color intensity. Other properties, such as heat-resistance, fastness to light and solvents and migration can be varied according to the pigment used. Complete stabilization of the plastic vehicle ensures that the pigments retain all desired properties.

Applications

ROWALID PP can be used either in solution or in a thermoplastic mass. The soluble preparations are for use in cases where the pigment's full color intensity is needed and the preparation can be stirred into a single solvent, a solvent mixture or an ink extender without the need for additional mechanical assistance. The resulting solutions are of low viscosity and, consequently, ideal for ensuring high color intensity, transparency and brilliance in gravure and flexographic work. Plastic foil, imitation leather and PVC surfaces are the recommended substrates for this application.



ROWALID PP are also very suitable for applications involving coloring of thermoplastic compounds to obtain maximum color intensity with minimum energy expenditure. Unlike pure pigments, which color everything with which they come into contact, the coloring properties of ROWALID PP focus on the plastic that needs to be colored. The positive spin-off here is that mixing equipment stays clean, color changes can be made more frequently and downtime for cleaning is slashed.

Alongside the ROWA Group's other coloring systems ROWA Masterbatch and ROWASOL lacquers, ROWALID Pigment Preparations are ideal for meeting a wide variety of customer needs.

Why not visit our Stand No. B28 in Hall 8a at the K Show 2010 to get more details of these products. We look forward to welcoming you there.

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Faigle holds press event



Group of participants with Lake Constance in the background



Positive test results for ROWAcare batch containing color pigments

On 1st and 2nd July of this year Faigle held a very successful press event at the Hotel am Kaiserstrand in Lochau, right on the banks of Lake Constance. During the 2-day event more than 20 science journalists from Germany, Austria and Switzerland caught up a great deal on details of the substances now available to give products antibacterial and anti-microbial properties.

The first day was exclusively for scientific papers on the following subjects:

- Antibacterial fabric for proofing chambers in bakeria
- Anti-microbial agents in plastics applications
- Development of the suspension rack – The story of a long cooperation with Faigle
- Antibacterial and anti-microbial products for suspension racks in proofing chambers – sustainable hygiene
- Breaking the infection chain – Anti-microbial plastics for hanging straps in public transport vehicles

The agenda for the second day offered room for a plant tour to Faigle Kunststoffe GmbH's. The visitors could see material tests providing convincing evidence of the efficacy of antibacterial and anti-microbial equipped products for themselves. The focus was especially on ROWA Group's ROWAcare additive batches for polyolefins and the ROWAcare combi-batches with color pigments for use in hygiene products. The ionizing activity of the admixture of sterions to PAS-PE and PAS-PU gives these plastic compounds long-lasting antibacterial and anti-microbial properties against:

- fungi
- bacteria and germs
- and viruses.

More information

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Anti-microbial handles for sharpening steels



ROWAcare® Rowa GmbH has formed an alliance with SteriOne GmbH & Co. KG for processing and marketing anti-microbial agents. The additive masterbatches are now being marketed under the ROWAcare® brand name.

Sterions as additives

The objective of this joint venture involving the ROWA Group and SteriOne GmbH & Co. KG is to promote public health and natural prophylaxis by providing enhanced protection against bacteria, germs, viruses and fungi. Close cooperation between the two companies has resulted in the development of sterions, a



Sharpening steels from Flügel CSS GmbH & Co. KG of Solingen, Germany are used in canteen kitchens and butcher's shops. The polypropylene handles of these steels are produced by Borkott, another Solingen firm.

group of substances possessing antibacterial and anti-microbial activity. Sterions are organo-metallic substances exerting an ionizing effect and can be used as highly effective anti-microbial additives. The ions of the sterions kill off primitive microorganisms like bacteria and fungi by disrupting their metabolic systems.

Unlike a number of substances now available on the market, sterions are not nano-substances. They do not migrate because they are firmly embedded in the polymer matrix of the plastic to which they are added. This means that sterions do not represent a health risk or an ecological risk. Products containing sterions at the correct concentrations retain their anti-microbial activity over a period of more than five years.

Sterions in plastics

Sterions are currently available in pure powder form for applications in a variety of industries. ROWA GmbH is now planning to investigate their activity in plastics in the form of masterbatches, additive batches and liquids. It will also make certain adjust-

ments to ensure that the plastic retains its original properties.

Key properties of the active substance:

- **Material neutrality:** The agents' basic properties remain unaltered after addition of the ROWAcare® masterbatches.
- **Application neutrality:** The manufacturing conditions under which the plastics are processed do not need to be modified.
- **Constructive continuity:** Enhancement of surface quality can help prevent major constructional alterations.

Specific applications

Sterions are already being used in practice. They can be found in the handles of sharpening steels used in canteen kitchens and butcher's shops. The handles of these steels are made of polypropylene. Because these handles regularly come into contact with a host of bacteria and other microorganisms and because good hygiene is the watchword in this very sensitive food environment, additive batches with anti-microbial activity are a must. It is equally essential that these handles do not lose their other characteristics, like their general feel and non-slip properties. ROWA GmbH's PE X10 possesses excellent product properties and has also proved ideal for processing with the batches, as well as having a good price/performance ratio.

Existing practical applications:

- Nursing and senior citizens' homes (combs with antibacterial and anti-microbial surfaces)
- Buildings and air-conditioning (air ducts, filter systems, cooling systems e.g. in the food industry)
- Medical appliances (reduction of residual risks after cleaning, reduction in nosocomial infections, reduction in microorganism colonies and transmission by contagion, bio-implants, endoscopes)
- Household (personal hygiene appliances, other household appliances, sanitary ware, furnishing textiles)



Meissner Kamm of Naumburg, Germany uses ROWAcare Additive Batch PE X10 in the production of anti-microbial polypropylene combs.

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New TRACEL foaming agent masterbatches for soft extrudates

With Tramaco's new TRACEL G 6840 MS and TRACEL G 6880 MS foaming agent masterbatches it is now possible to achieve finer and more homogenous cell structures in TPE extrusion. By using modified expandable microspheres even polymers sensitive to hydrolysis can be foamed to low densities - and without polymer degradation by chain scission. Both these Tramaco products are easy-to-dose, dust-free granules designed for problem-free handling. TRACEL G 6840 MS and TRACEL G 6880 MS further extend the available range of conventional chemical foaming agents into new applications.

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From the river Elbe to the river Pinnau

Susann Sommermeier joined Tramaco GmbH in Pinneberg as Marketing Manager on 01 July 2010. Born in Hamburg, she has been working for 23 years with Nordmann, Rassmann GmbH, where she was heading the export department as Sales Manager for several years.

In May 2011, Susann Sommermeier is scheduled to succeed Karl-Heinz Jessen when he goes into well-earned retirement after 30 years with the company.

After 2 months of intensive training on products, production facilities and operating procedures, she is now focusing on personal contacts with Tramaco's business partners.

The coming K Show 2010 in Düsseldorf will offer her excellent opportunities to cultivate Tramaco's relations with its international customers and to establish new relationships.

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ROMIRA ESD compounds – for enhanced safety



Like all non-conductors, plastics tend to accumulate static electricity from friction with other materials and objects. The higher the dielectric resistance, the more difficult it is to get rid of this electrostatic charge. The increase in electrical charge on a component's surface not only attracts dust; it also constitutes a serious risk because of the possibility of spontaneous discharge.

Plastics have volume resistivity and specific surface resistivities that can go as high as 10^{16} Ohm. These can be significantly reduced by various types of additive and conductive fillers to a level where the hazard potential is negligible. Fig. 1 lists commonly used additives and the sort of resistance ranges that they can produce.

Romira has developed some highly effective solutions for integrating antistatic properties into plastics. These are widely used in the automobile industry. The use of inherently dissipative polymers (IDP) has brought the electrostatic discharge (ESD) range to 10^8 Ohm.

Carbon-particle fillers have to be used in applications involving explosion risks where electrostatic charges need to be dissipated in milliseconds. Romira has focused its development work in this field on compounds containing carbon nanotubes.



Nanotubes have a tube-like, multi-wall structure and are roughly 10nm in diameter and several μm in length.

This gives them a high aspect ratio of 1000:1.

Conductive carbon black and C fibers have length/diameter ratios of between 10 and 100.

Consequently, modification with CNT's can yield conductivity at a similar level as with C fibers or conductive carbon black, but at much lower dosage.

The resulting lower additive level means that the characteristic properties of the polymer compounds remain broadly unchanged. Retaining their good flow

properties, these compounds allow the production of articles with long flow path at low wall thickness and high surface quality.



High-gloss surface of Romiloy PC/ASA EXP1977

The use of carbon nanotubes also yields quality benefits in reinforced ESD compounds. These include enhanced surface appearance, mechanical properties and flow index, plus good warp resistance in injection-molded components.

Investigation of capillary rheometry of Rotec PA6 ESD compounds yields data on their melt viscosity at various shear rates.

Depending on the conditions under which compounding took place, plus the viscosity of the base polymer and the distribution of the nanotubes within the polymer, surface resistances of between 10^3 and 10^{12} Ohm can be obtained with carbon nanotubes. Given optimal dispersion in the polymer, this nanoscale range also prevents formation of so-called hot spots resulting from concentrations of networks of conductive particles. This means that surface resistance is uniform over the entire surface of the component.

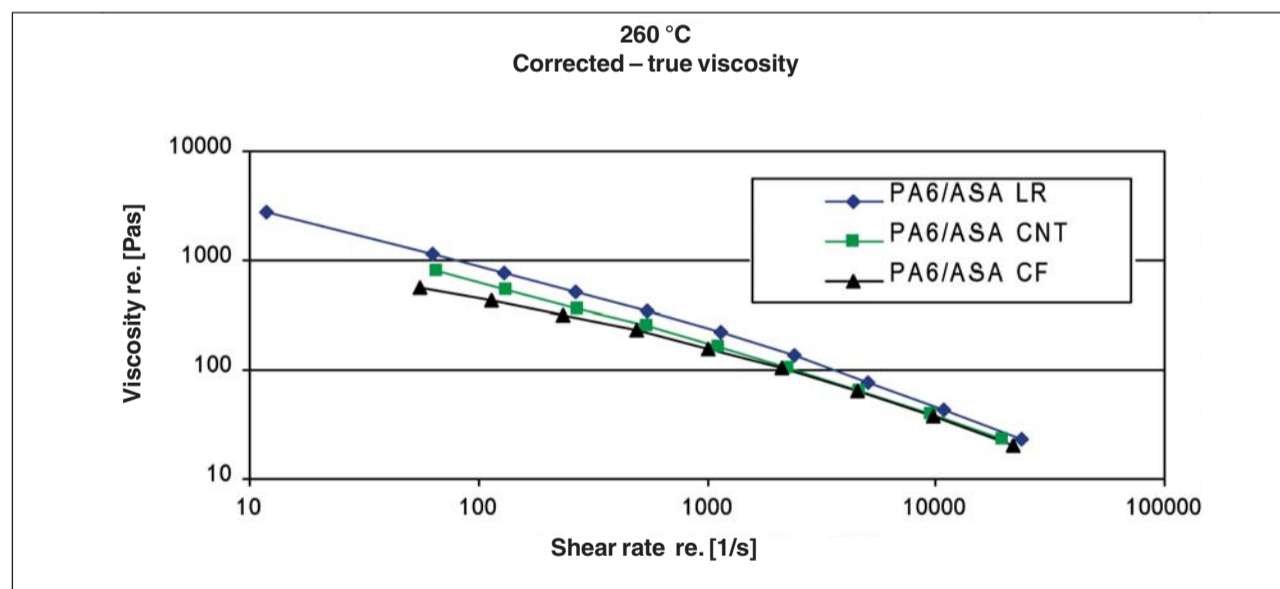


The use of CNT's as conductive additives in polymers helps to make our everyday lives simpler and safer. For example, systec-POS Technology in Puchheim is using Romiloy PC/ASA EXP1977 in the push bars of supermarket trolleys. Customers no longer need to worry about 'electric shocks' when they take a trolley.

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Rheometry of Romiloy PA/ASA ESD Compounds



Properties	Norm	Unit	PA6 CNT	PA6/ASA CNT	PA6/ASA CF	PA6/ASA CCB EXP1530
MFR (260 °C/5kg)	ISO1133	g/10 min	17,0	5,0	23,0	1,7
an, 23 °C	ISO 179/1eU	kJ/m ²	30	25,8	48	29,7
ak, 23 °C	ISO 179/1eA	kJ/m ²	4,7	8,1	7,7	4,9
Specific surface resistance	IEC 60093	Ohm	1,00E+06	1,00E+06	<10E6	<10E6

Table 1: Properties of Rotec PA 6 and Romiloy PA6/ASA compounds with carbon nanotubes (CNT), C fiber (CF) and conductive carbon black (CCB) as fillers

Properties	Norm	Unit	PC/ASA CNT EXP 1977	PC/ASA CCB	PC GM10 CNT	PC G10 CNT
MFR (260 °C/5kg)	ISO1133	g/10 min	7,8	2,4		
an, 23 °C	ISO 179/1eU	kJ/m ²	o.B.	40	52	42
ak, 23 °C	ISO 179/1eA	kJ/m ²	31,6	7,5	4,5	3,7
Specific surface resistance	IEC 60093	Ohm	1,00E+06	<10E6	1,00E+06	1,00E+06

Table 2: Properties of glass-reinforced Rotec PC (GM10; G10) and Romiloy PC/ASA blends with carbon nanotubes (CNT) and conductive carbon black (CCB) as fillers

Bromine-Chlorine-free flame-resistant ABS/PC blend – An alternative to bromated ABS



Romira's newly developed and patented ABS/PC blend Romiloy 9180 contains no chlorine or bromine and is fire-resistant. It opens up new opportunities in applications where bromated ABS lacks the necessary form stability and thermal stability on exposure to heat or in situations where fume density is excessively high. Components made of Romiloy 9180 are easily workable and can also be galvanized.

The new blend is more compatible with the environment. Manufacture and processing of bromine-containing compounds is not only fraught with health and environmental risks. Their manufacture and use are now regulated by European Directives 2005/95/EC (Raw Materials) and 2005/96/EC (Waste Disposal), which require manufacturers of electrical and electronic equipment to take back all waste products introduced into circulation by them in the EU area and to treat all flame-resistant, bromine- and chlorine-containing plastics in this equipment as hazardous waste. This naturally causes significantly higher disposal costs for the manufacturers.

Despite the cost risks arising from these regulations, bromated ABS compounds are still being used in many

applications in the E-E industry, simply because there were formerly no sufficiently flame-resistant, halogen-free ABS compounds available. This is why Romira's new ABS/PC Blend is such a significant breakthrough over the old bromated ABS.

Romiloy 9180 has similar flow properties to ABS, as demonstrated by the shear viscosity curves in the table.

This means that, like ABS, it is suitable for use in injection-molding processes. As it remains workable even at low temperatures, Romiloy 9180 also enables savings



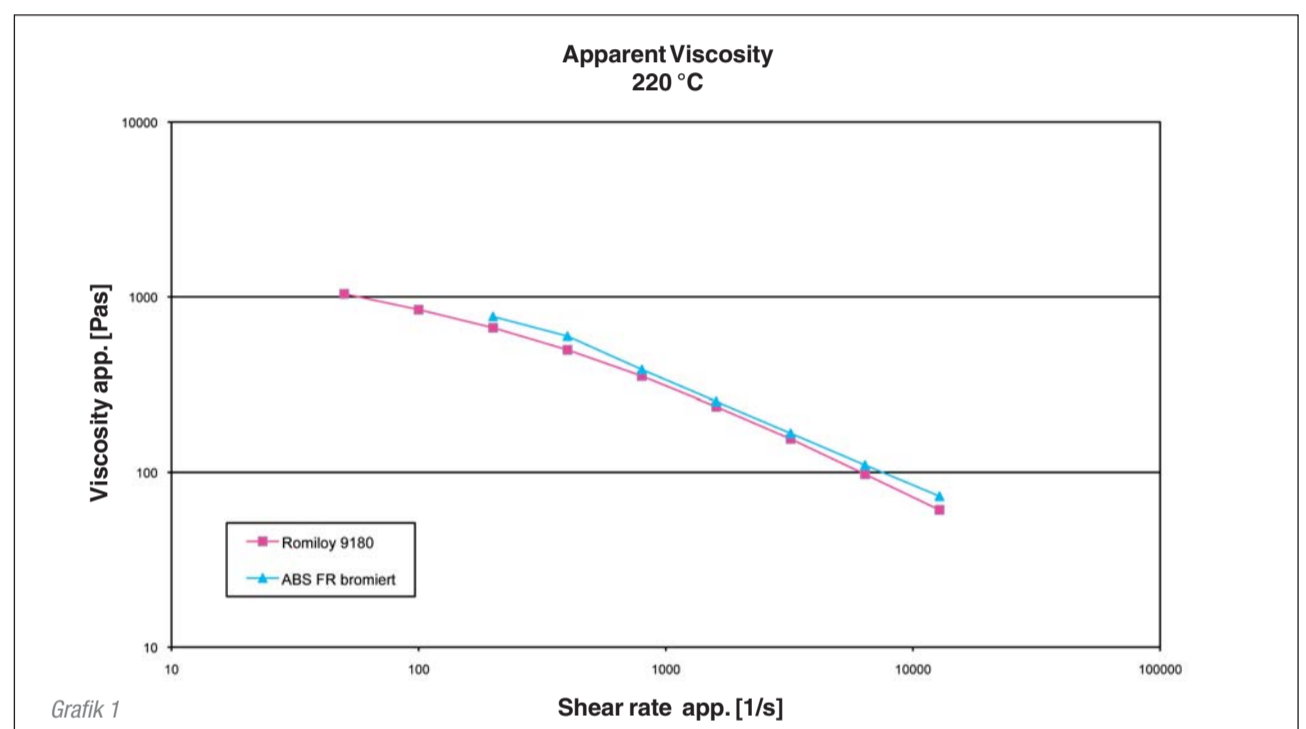
Injection-molded Romiloy 9180 panel galvanized, with high-gloss chrome finish

in energy costs as compared with conventional flame-resistant ABS/PC blends.

Romiloy 9180 has another USP – it can be galvanized. The new blend can be chrome-, high-gloss- or matt-galvanized in baths suitable for ABS/PC. This opens up even more opportunities for new applications in E-E appliances, for example, in lamps, suction cleaners, coffee machines and other metallic-design household appliances.

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Rotec ASA S210 for sewing machine casings

Bernina International AG of Switzerland develops and manufactures high-quality sewing and knitting systems. The latest models of BERNINA sewing machines incorporate some big technical and design advances. One of these is the plastic Rotec ASA S210 used in the casings. It is the result of close cooperation between Romira GmbH and the Project Management of Bernina International AG. The excellent results obtained with it have encouraged Bernina to start using it in different colors for other models as well.

Customer specification for Rotec ASA S210

- Color choice by Bernina
- Extremely narrow color tolerances for batch release by Bernina
- Total absence of specks
- Very good fastness to light
- Better resistance to tension crack than PC
- Good flow properties
- Good resistance to detergents and sewing-machine oils
- Inventories held at ROMIRA and short lead times from raw materials suppliers

Because of its excellent fastness to light and well-balanced technical profile, Rotec ASA is ideal for applications demanding long-term color stability, for example, in products directly exposed to sunlight and weather. All products made by ROMIRA GmbH to customers' color specifications are available in quantities of 25 kg or more.

An adhesion-modified TPE Lifoflex formulation TV 65.01B059 Black 4308 from Müller Kunststoffe that has very good adhesion to Rotec ASA S210 is used for handles and controls, which are hard-soft plastic-to-plastic bonded structures. The Lifoflex also complies with the customer's color specification.

Customer's specification for Lifoflex TV 65.01B059

- Color choice by Bernina
- Very good adhesion to ASA
- Low loss through abrasion
- Pleasant to the touch

Müller Kunststoffe in Lichtenfels specializes in development and manufacture of soft thermoplastics providing practical solutions with high customer benefits.

The Bernina example demonstrates the positive synergy existing between the companies of the ROWA Group and highlights the development advantages that companies like Bernina International AG can enjoy from close cooperation with ROWA.



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Horst Müller Kunststoffe at the K Show 2010

Horst Müller Kunststoffe, together with other ROWA Group companies, will be there again at this year's K Show in Düsseldorf. It is the biggest and most important of the plastics industry's trade fairs and Müller Kunststoffe will be out there on Stand B28 in Hall 8A demonstrating the versatility of its products to visitors from all parts of the globe.



most cost-efficient solutions for customers' requirements. Furthermore, we offer color masterbatches, additive masterbatches and ROWAcare products.

visitors on the booth. So, Müller Kunststoffe offer its guests a high level of comprehensive and practical advice according to the corporate motto: Flexible, Powerful, Pinpoint

Long years of experience with TPE, TPU and soft PVC enable us to quickly identify the most suitable and

An experienced team of technicians and chemists from the development and sales divisions will be glad to answer questions and discuss problems with

At this year's exhibition we focus on our newly-developed standard range of improved, flame-resistant halogene-free TPE formulations.

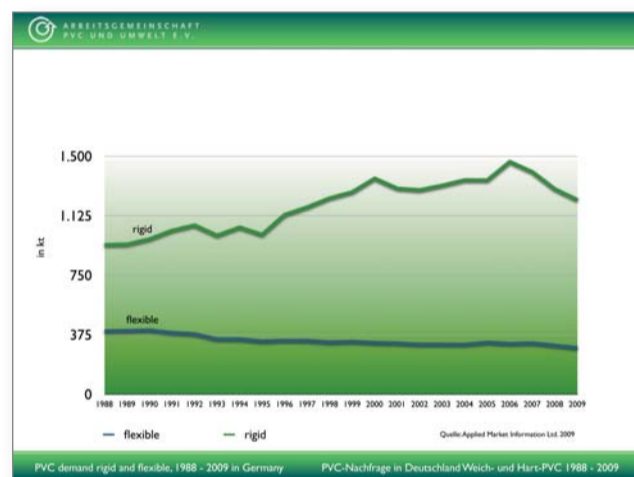
Come and visit us at the K Show from 27 Oct. to 3 Nov. 2010 in Düsseldorf.

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Soft PVC – 'On the up and up' or 'Dead but it won't lie down'?

Although soft PVC is still plagued by its terrible reputation and experts have long been forecasting its demise, its actual consumption level in Germany has remained more or less steady ever since 1993 (see Table 1).



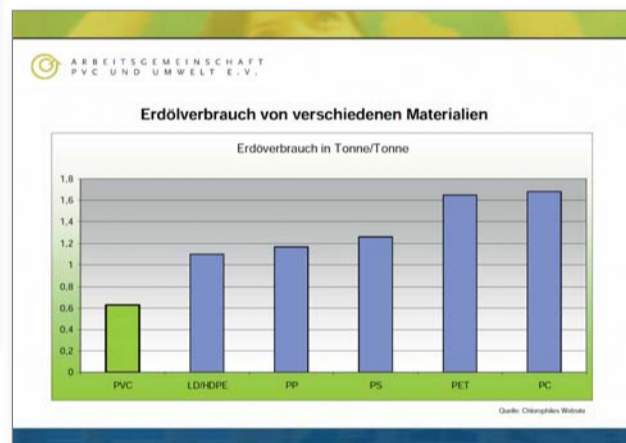
Demand trends for soft and hard PVC in Germany 1988 - 2009
Source: www.agpu.de

What has actually changed over the intervening years are the demands placed on soft PVC compounds and the properties that have been built into the finished products to meet these demands. Whereas a decision in favor of soft PVC used to be influenced by the words "inexpensive" and "durable", its users are now looking for other properties and combinations of properties, such as:

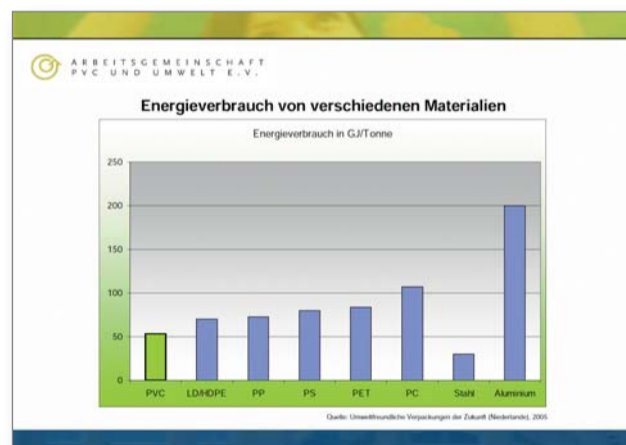
- light foam structure and good resistance to oil and grease
- co-extrudability and orange-peel surface effect for seals
- friction-free surfaces and high transparency
- durability and freedom from noxious substances
- flame resistance and good low-temperature elasticity

Customer requirements for surfaces of soft PVC articles can be met by variations in formulation and additives. They can range from high-gloss and satin-frosted to matt rubber-like finishes. And there is still a lot of room for product design and system development in the hardness range between 40 and 97 Shore A. This, plus the product's good cost/benefit ratio, are the reasons why soft PVC is unlikely to disappear from our everyday lives any time in the near future.

Viewed from the ecological angle, PVC frequently comes out better than many other mass-consumption plastics. The weight of mineral oil used for PVC manufacture, expressed as ton of oil per ton of finished product is only around 0.65, half the level of PE (approx. 1.1) and much lower than PET (approx. 1.65). The energy consumed in manufacture of 1 ton of PVC is also lower than with most mass-consumption plastics at just over 50 GJ per ton.



Mineral oil consumption in production of selected materials
Source: www.agpu.de



Energy consumption in production of selected materials
Source: www.agpu.de

There have also been some changes in choice of raw materials. For example, Müller Kunststoffe has been working exclusively with lead-free, non-toxic stabilizers for some time now, and this eliminates the problem of lead in the final products. The market is also demanding phthalate-free formulations. The Rowa Group introduced alternative plasticizers several years back and more than 50 percent of its sales of soft PVC compounds are now phthalate-free.



Ecological considerations and absence of physiological risks are going to loom larger and larger in the future, and this is why Müller Kunststoffe is continually improving all of its products and making sure that they comply with the latest standards.

The Rowa Group's soft PVC compounds are produced by Müller Kunststoffe at its plant in Lichtenfels and marketed under the Lifolit® brand name. If you would like more information on these products, why not contact Ralf-Dieter Menssen (Head of PVC/Masterbatch Laboratory and Development) at ralf.menssen@mueller-kunststoffe.com. His many years of experience make him an efficient source of information on this subject.

More information

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Product Safety Department formed

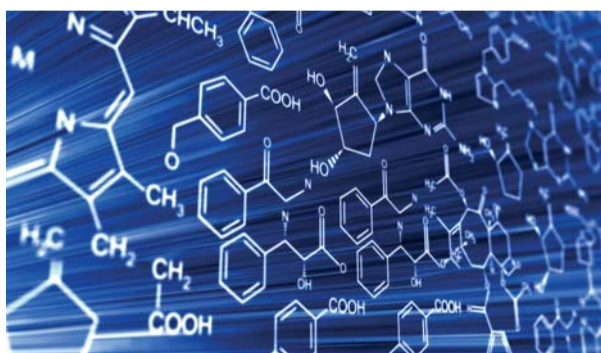
Müller Kunststoffe has a wide product range used by a large number of different sectors of the industry. Some of these, for example the food, toy and health care industries and companies using anti-microbial products, ask for more support from their plastics suppliers, because many applications are getting increasingly sensitive. One has seen a sharp increase in the number of customer inquiries on international and EU directives and regulations as well as specific substances that have been blacklisted by individual companies.

Müller Kunststoffe has consequently founded a department headed by Florian Schubert that will offer customers advisory services on product safety. The new department will work closely together with the Purchasing, Development, Sales and Production Departments and will be able to implement additional standards into material development projects.

The new department at Müller Kunststoffe sees its primary duty as customer service and acknowledgement of customers' wishes, but it will also seek to obtain early information on new regulations, e.g. the new 2009/48/EC norm for toys, well before they enter into force. And it will be reviewing the company's existing raw materials pool for compatibility with future legislative conditions.

In addition to its support in legal and customer-specific requirements, Müller Kunststoffe is also able to give active recommendations in important safety standards.

On 26 October 2010 at the VDI-TPE Expert Forum Adhesion and Thermoplastic Composite Structures in Düsseldorf a lecture will be presented on regulation of harmful substances in the plastics industry entitled Sense and Nonsense in the Discussion on harmful Substances in Plastics.



More information

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High-performance halogen-free flame-resistant products



Flame-resistant, halogen-free Lifoflex TPE compounds from Müller Kunststoffe have been available for several years and are now well-established in the market. The UL94 test method gives these flame-resistant compounds a VO flammability classification at a minimum sample thickness of three millimeters. Ongoing development work has now enabled marketing of the new standard range of flame-resistant Lifoflex UV FLAM 600 products. Also halogen-free, these compounds possess significantly improved processing properties in injection-molding and extrusion applications.

x 6 mm profile received the following classifications: flammability S3, drip formation ST2, smoke formation SR2. The DIN EN ISO 5659-2 fume toxicity test yielded an FED classification of 0.14 (max. permissible: ≤ 1) for the material (tzul = 30 min).

Products possessing both electrical conductivity and flame-resistance could be very interesting indeed, because it is quite conceivable that this combination would be ideal for certain electrical products. Müller Kunststoffe has already developed products with these properties because, in addition to its standard ranges, it also aims to offer products that are ideal for special applications.



		Trade name	Lifoflex	Lifoflex	Lifoflex	Lifoflex	Lifoflex	Lifoflex
		Type	UV FLAM 40600	UV FLAM 50600	UV FLAM 60600	UV FLAM 70600	UV FLAM 80600	UV FLAM 90600
Test	Test method	Unit						
Hardness	DIN 53505 - A	Shore A (3 s)	40	50	60	70	80	90
Density	DIN 53479	g/cm ³	1,05	1,05	1,03	1,03	1,03	1,03
flammability rating	UL 94 3,0 mm		VO	VO	VO	VO	VO	VO
Glow wire test 3,0 mm; 650 °C 3,0 mm; 850 °C	IEC 60695-2-11		Passed Passed	Passed Passed	Passed Passed	Passed Passed	Passed Passed	Passed Passed

Another range of standard products will shortly be launched under the name Lifoflex UV FLAM 700. The UL94 test method gives this range a VO flammability classification at a minimum sample thickness of only 1.6 millimeters. They are suitable for injection-molding and extrusion work where hardness of between 50 and 90 Shore A is realized so far.

Müller Kunststoffe has reached another milestone with its new, halogen-free, flame-resistant products for the railroad industry. In DIN 5510-2:2009-05 fire precaution tests for rolling stock, a 500 mm x 10 mm

More information

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