Issue 2/2014 www.rowa-group.com

ROWAnews

NEWS FROM ROWA GROUP

Dear business partners, ladies and gentlemen,

Chemistry stands for innovation – nothing can be achieved without it. State-of-the-art equipment needs to be operated and complex development and production processes have to be controlled and monitored. Anyone working in the field of chemistry has an excellent chance of contributing to future innovative solutions and is part of a sector that is committed to sustainable development. We are pleased that we have been able to create diverse trainee positions again this year and extend a warm welcome to the future production specialists.

Globalisation, in particular, is opening up new long-term growth perspectives for the German chemical industry, and not only for large enterprises, but also for us, the small- and medium-sized businesses. Of course this requires a stronger market presence, which is one of the reasons for us to expand and to re-position sales within the ROWA GROUP – because we know how decisive customer proximity is, especially in a market characterised by very different kinds of applications.

All ROWA products for a large number of plastics applications are available under one roof, including masterbatches in granulated form, pigment dispersions, highly concentrated mono-pigment preparations or already existing complete solutions using pigmented, customised technical compounds. A corporate culture is emerging from our activities: we are focussing on the synergistic benefits arising between our fellow subsidiaries. Our enthusiasm for our common goal drives our joint business dealings so that we can implement ideas with and for competent partners and experienced specialists like you.

This new edition of ROWAnews provides information on new products and the latest technological developments. It also focuses on commercially interesting application reports. We hope that this edition will spark your curiosity. We would be pleased to meet you as a guest at this year's FAKUMA at our booth in Hall B1 Stand 1212.

Best regards,
Kai Müller

ROMIRA

A real success story

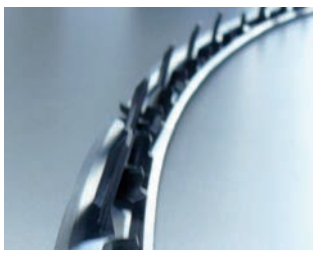
Their versatile range of applications has made plastics an integral part of our daily life. For example, owing to their positive property profile, flame-retardant materials are finding increasing use in electrical engineering and electronics applications, the transport sector as well as the construction and furniture industries. When selecting materials, manufacturers must always take account of new standards and international regulations. Plastics manufacturers are faced with major challenges when developing new materials that must comply with demanding application profiles. ROMILOY® PC/PBT and ASA/PBT blends have been standard items in the ROMIRA product portfolio for many years and have established themselves as top sellers.

Thanks to the continuous further development of its products, ROMIRA has a wide portfolio so that it can offer tailored solutions to its customers. An advantageous combination of amorphous polycarbonates and semi-crystalline polyesters (mainly polybutylene terephthalate – PBT) provides a high heat stability, good resistance to chemicals and, in particular, to fuels (stress cracking), high surface quality, an excellent toughness and good flowability.

Further developments have been gradually added that comply with fire protection class V0 to 1.5 mm and are UL listed. The ROMILOY® product line is particularly suitable for use in equipment whose housing, assemblies and technical components are subjected to frequent cleaning cycles, e.g. medical instruments.

Blending of amorphous styrene copolymers (ASA) with semi-crystalline PBT has led to another exceptional material: the ROMILOY® 5250 and 5240 product line. This blend is filled with glass fibres and its ideal property profile makes it suitable for automotive and electrical applications. The outstanding properties of this blend include enhanced stiffness, thermal stability and chemical resistance as well as an excellent stress-cracking resistance. In future, ROMIRA will continue to strengthen its market position with a high development rate and a product portfolio of excellent quality. The long-standing experience of the workforce and introduction of new technologies will ensure that this goal is successful.

SLK roll bar (black) made of ROMILOY® (PC+PBT)



Very complex automobile trim made of ROMILOY® (ASA-PBT) for external applications

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Content

ROMIRA TECHNISCHE KUNSTSTOFFE

Best service for our customers

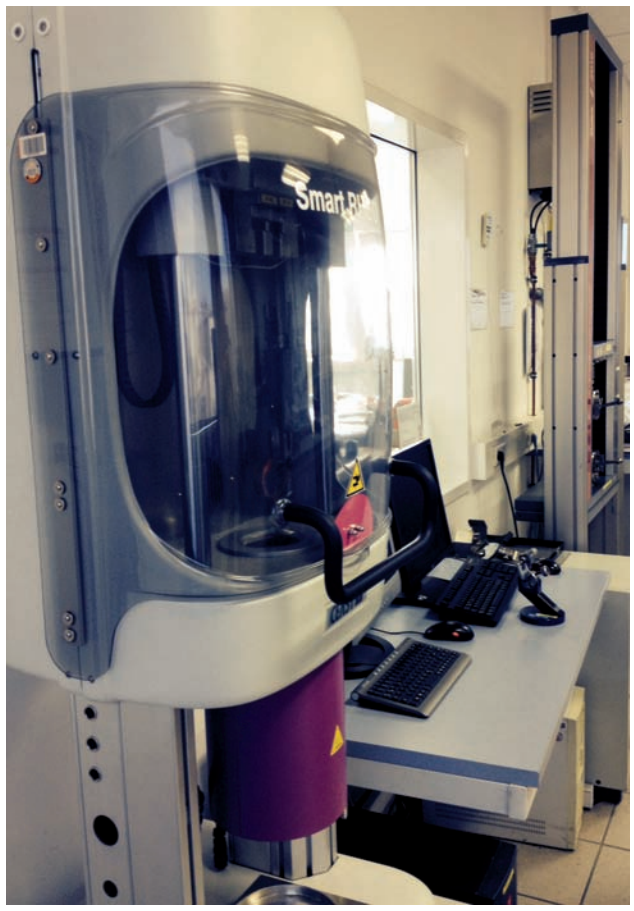
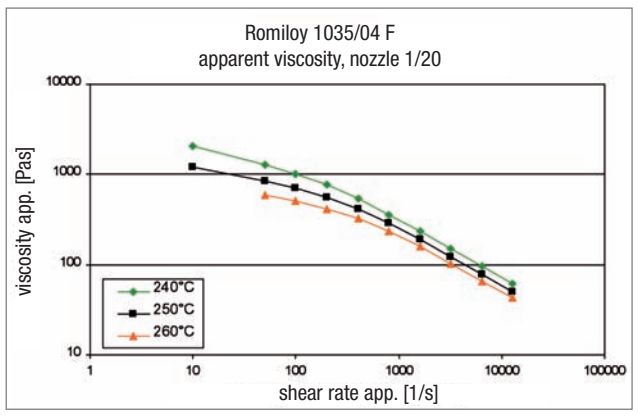


Figure 1: Capillary rheometer, model SmartRheo from

ROMIRA is a competent partner and manufacturer of technical thermoplastics and offers its customers not only application-specific material solutions, but also provides services such as on-site technical support and comprehensive materials testing. The ROMIRA polymer laboratory is equipped with modern instruments to test the mechanical, thermal and performance characteristics of plastics. In addition to instruments for testing the bending strength, tensile strength and impact toughness, which are essential for all compounds, a capillary rheometer (Figure 1) is used to measure the rheological properties of the melt. This data is then used in simulations before new injection moulds are constructed. For highly complex parts used in the automotive industry, for example loudspeaker grilles or trims, precise determination and compliance of a material's rheological data for deliveries with a constant rheology is particularly important.

A Xenotest, which simulates exposure to light and weathering, provides a statement on the UV and weathering resistance of plastic compounds within a very short time. ROMIRA has been using the Xenotester Q-Sun Xe-3 HS from Q-Lab for a number of years to test its newly developed or modified formulations. The UV resistance of a plastic compound primarily depends on the chemical structure of its constituents, both polymers and additives. Precoloured materials are generally used in weatherable applications. Therefore, it is of prime importance to examine the influence of the employed pigments and colourants in combination with the respective compound. In this case, the test conditions correspond to the automotive standards based on ISO 4892, using light passed through a window glass filter for interior applications as well as with illumination (daylight filter) and a water spray for exterior applications.



Viscosity of ROMILOY® 1035/04 F in function of the shear rate

Further tests include those for the stress cracking resistance and chemical resistance of existing and newly developed compounds. ROMIRA can also provide assistance to its customers in the selection of materials for specific applications, for example, medical engineering.

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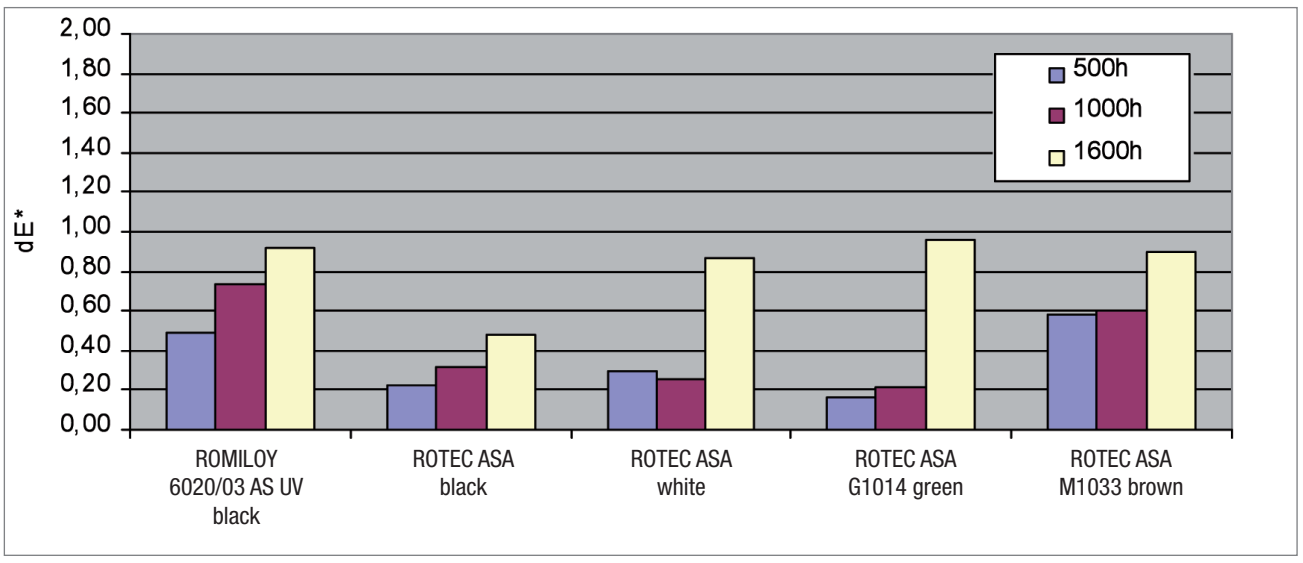

Colour deviation in accordance with 500, 1000 and 1600h Xenotest of ROMILOY® 6020/03 AS UV (PC/ASA) in black and ROTEC® ASA in black, white, green and brown

ROMIRA at the IZB

From 14 to 16 October, the International Suppliers Fair (IZB) will take place in Wolfsburg (Germany) – and ROMIRA will participate. This will be the second time that the Pinneberg-based manufacturer of technical plastics and compounds will have its own stand at the fair, which is aimed at suppliers for the automobile industry (Hall 6, Stand 6307). Using the most advanced internal technical know-how, close cooperation with application engineers as well as direct and fast contact with customers and processors, ROMIRA offers an efficient service for demanding automotive applications. The company will be showcasing its extensive product portfolio at the IZB. This includes:

- Thermoplastic compounds with special customised solutions
- Compounds for tribological effects (wear minimisation, anti-squeak)
- Antistatic and permanently antistatic PC blends with ASA and ABS
- Low-gloss thermoplastics such as PC/ABS, PC/ASA, ABS, PA/ABS and PA/ASA for uncoated applications in vehicle interiors and exteriors
- Low-emission and low-odour plastics for vehicle interiors (ABS and PC blends with a high Vicat)
- High-flow PC blends
- Metal plating for components used in vehicle interiors and exteriors
- Plastics for high-gloss finishes in interiors and exteriors and for uncoated exterior applications
- Colour-constant compounding according to VW 50190, PV 1303
- Colour, Additive and Multifunctional Masterbatches
- Odour-optimised PPE blends for kinematic applications and with drinking water approvals

The International Suppliers Fair (IZB) started in 2001 as an in-house trade fair of Volkswagen AG and has since established itself as a showplace for the international supplier industry. According to the organiser Wolfsburg AG, there were 49,000 visitors in 2012 at the stands of 776 exhibitors from 28 countries. The trade fair takes place every two years in the Allerpark in Wolfsburg.

Hall 6, Stand 6307 – exhibition stand IZB 2014

Stig Lindström is the new Managing Director of ROMIRA

Stig Lindström officially became the new Managing Director of ROMIRA on July 21. He succeeds Kai Müller, who has already been responsible for the entire ROWA GROUP for the past one and half years and was still managing ROMIRA in a dual function. By handing over the position of Managing Director of ROMIRA to Stig Lindström, Kai Müller can now concentrate exclusively on the complex tasks as Managing Director of the ROWA GROUP.

Swedish-born Stig Lindström has been working for 23 years in various fields of technical plastics, masterbatches and technical chemistry for large- and medium-sized chemical companies. His last position was Managing Director of an American chemical company. As Managing Director of ROMIRA, he is responsible for the operative side of the business – from product development to production and quality assurance to shipping. In the coming years, graduate engineer Lindström intends to continue the successful work of Kai Müller and maintain ROMIRA's growth trend. He sees particular potential for further expansions, both geographically as well as in the application fields.

This passionate hockey player from UHC Hamburg is married and has two children.

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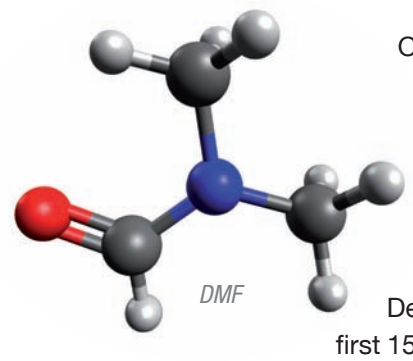
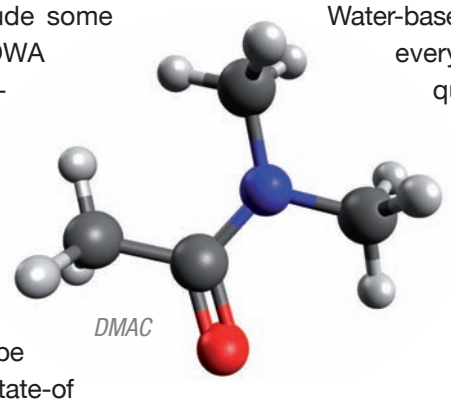
SVHC candidates as solvents in lacquers – and the alternatives

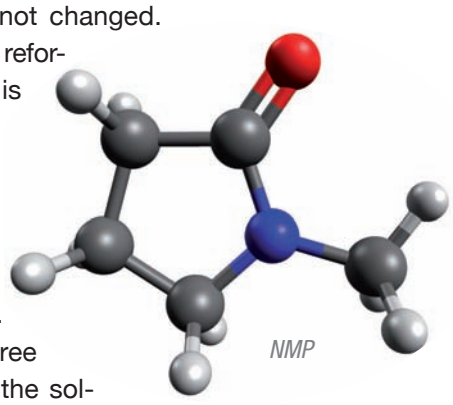


On 28 October 2008, which was almost two years after the REACH Regulation was published ((EC) No 1907/2006) in December 2006, the first 15 substances were placed on the so-called SVHC Candidate List (substances of very high concern). Substances, which are added to this list, are subjected to a complicated procedure lasting several years. At the end of this process they are usually added to Annex XIV of the REACH Regulation, which means that their further use requires an approval. An application for an approval is associated with enormous expenditures for time and personnel and also requires vast specialist knowledge. This ultimately means a serious financial burden. Thus small- and medium-sized enterprises (SMEs), in particular, do not even consider applying for an approval so that many products gradually disappear from the market. Aware of this situation, many customers of these SMEs already enquire after equivalent alternatives that no longer contain potential SVHCs, when new substances are included in the Candidate List.

Since mid-June 2014, the SVHC Candidate List contains 155 substances. These include some solvents that are used by ROWA Lack, namely DMF (*N,N*-dimethylformamide), NMP (*N*-methyl-2-pyrrolidone) and DMAC (*N,N*-dimethylacetamide). The pros and cons of a possible ban on these solvents cannot be discussed in detail here. However, it should be mentioned that, using current state-of the-art technology, these substances can be handled in industrial processes – as implemented for example at ROWA Lack and its customers – without problems and risks for humans and the environment. Nevertheless, in order to deal with the ever increasing number of customer enquiries for lacquers with alternative solvents, ROWA has spent a number of years researching and developing lacquer recipes that do not contain DMF, NMP, DMAC and related substances. Thus, ROWA is now able to change the solvent composition of nearly all of its currently available lacquers to an SVHC-free alternative within a short time. The properties of the final lacquer film are usually completely retained because the binding agent base has not changed.



Unfortunately, the reformulated product is usually somewhat more costly, which is solely due to the higher price of the alternative solvents. Anyhow, SVHC-free lacquers among the solvent-containing products represent a perspective for the future and they will become increasingly important in the coming years.



As a second alternative to lacquers with SVHC solvents, ROWA Lack also offers coating materials based on aqueous dispersions that contain almost no solvents. Water-based lacquer systems are available for nearly every type of surface coated with ROWA lacquers, including truck covers, textile constructions and synthetic leather. Further product information and samples can be obtained from ROWA Lack sales representatives.

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ROWABASE - Toll manufacturing of lacquer systems and dissolved raw materials

ROWABASE is ROWA Lack's toll manufacturing programme for lacquer systems and dissolved raw materials. ROWA Lack will carry out particular jobs that release customers from capacity bottlenecks or routine production work. The comprehensive ROWABASE service programme helps customers to save costs, increase efficiency and also to improve safety and legislative compliance. The ROWABASE service package can be tailored to the scope of the required tasks such as procurement, production, storage, quality control and global logistics for the products.

Vacuum dissolver as basic unit for basecoat production

ROWA Lack has installed new vacuum dissolvers at their Seevetal site, thus investing in modern production standards. The identical configuration of these vacuum dissolvers guarantees a comparable quality picture in all conceivable trial and production phases. With the new dissolvers, only closed processors are used in the solvent sector. This enables ROWA Lack to comply with all emission-limiting requirements of the VOC regulation and reduces even further the very minimal environmental burdens. Furthermore, all relevant processes used in the production of solvent-borne products are blanketed with nitrogen to rule out any ignition hazards. The approval in accordance with the Federal Immission Control Act (Bundesimmissionsschutzgesetz) secures the production site in the long term and enables ROWA Lack to increase its capacity to a sufficient degree.

ROWA Lack places the highest priority not only on quality and safety, but also on the efficient management of resources. Thanks to its ultramodern production processes, the Pinneberg-based manufacturer complies with all stipulated occupational exposure limits and statutory requirements. Thus, ROWA Lack continues to maintain its ISO 9001 and ISO 14001 certification.

ROWA Lack is looking forward to continue being a reliable, flexible and innovative partner for its customers. Our team is always available to provide comprehensive advisory services.

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TRAMACO – focus on customised solutions

Everyone is talking about climate protection and CO2 efficiency. In the automotive industry, this means in addition to the improvement of the engines, above all, weight reduction. Many parts that used to be made of metal are now being made of plastic. Nevertheless, these should also be even lighter. The solution: foam! TRAMACO, the specialist for chemical foaming agents and adhesion promoters, has been cooperating for a long time very successfully with internationally renowned plastics processors in this market segment and is a reliable, competent and innovative partner for them to find solutions for specific foam applications.

For a comparable mechanical strength, a foamed injection-moulded part can be five to ten percent lighter than the corresponding compact component. This can provide significant weight savings, especially for large components such as dashboards or housing sections of auxiliary units.

In addition to weight reduction, there are a number of other advantages of using chemical foaming agents: The flow behaviour of the polymer melts is significantly improved and the cycle times can be reduced. And the best part: TRAMACO is able to develop customised solutions. Depending on the application, polymer and individual parameters, TRAMACO designs individual products in cooperation with its customers. Thus allows TRAMACO to stand out from the competition.

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Example automotive application

New assistant for the Managing Director of TRAMACO

In November 2013, Anne Beate Balzer took over the position as assistant to the Managing Director of TRAMACO in place of Anke Geertz and Anette Penkert. She had previously been working in the mineral oil industry. Anne Beate Balzer is a certified foreign language secretary and has many years of experience as a management assistant in various industrial sectors. TRAMACO customers may contact Anne Beate Balzer in German, English, French and Italian.

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TRAMACO products prove their worth

TRAMACO knows what customers want: The latest customer satisfaction analysis by the company reveals that national and international customers appreciate:

- the technical quality of TRAMACO products
- the technical advisory service and order processing
- the friendliness and flexibility of the staff

In the first quarter of 2014, customers in the fields of foaming agents, additives and adhesion promoters were sent a questionnaire requesting them to evaluate the company, the products and the service, also in relation to competitors.

Evaluation of the technical quality of the TRAMACO products revealed that customers gave very positive assessments with regard to fulfilment of the requirement profile, compliance with specifications and the handling properties of the products.

The Sales Department was awarded top marks for their punctual national and international order processing. The technical advisory service provided by the TRAMACO team was especially appreciated by international customers.

The Development Department was highly praised by customers with respect to their very good cooperation as well as the fast response and delivery times.

The Customer Contact team received top marks compared to competitors in the categories "friendliness", "flexibility", "helpfulness", "availability" and "competence".

The consistent focus on customer requirements is reflected by the excellent ratings for technical quality, advisory services and punctual deliveries.

TRAMACO would like to thank all customers who participated in the survey.

The results of the evaluations will be incorporated into the ongoing development of the company so that TRAMACO will continue to be a strong partner for its customers in the future.

Innovative dosing system BASIC saves time and money

Thanks to its innovative technical solutions, ROWASOL is always a step ahead of its competitors. The company is currently proving a dosing system for extrusion applications that dispenses and homogenises the liquid colour into the plastic melt downstream. This means that the extruder is not contaminated with the colour, which represents a major advantage during colour changes with respect to savings of time and material. This type of dosing system is unique and allows the liquid colour to be fed safely into the pressure zone of the extrusion line.

The heart of the system is a high-precision gear pump from Oerlikon Barmag, which is available in various models for dosing rates from 0.1 to 500 kg/h and which can build up a pressure of up to 80 bar. A freely selectable feed tank, e.g. an IBC or the RAINBOW System, is connected to the pump via a plastic hose with non-drip quick release couplings. The extruder is connected via a stainless steel hose. The pressure-controlled purging and safety valves, developed exclusively for ROWASOL, are integrated into this line and guarantee fast and reliable colour changes.

To ensure that the liquid colour will be incorporated homogeneously before the system is installed, ROWASOL works together with PROMIX Solutions, the market leader in the field of static melt mixers. In collaboration with the customer, all relevant parameters are sent to PROMIX Solutions, who then calculate whether the already installed mixer will provide homogeneous compounding and, if necessary, gives recommendations for more effective mixers or further modules.

The trial phase of the injection system is expected to be completed by the Fakuma Trade Fair, at which the first results are to be presented.

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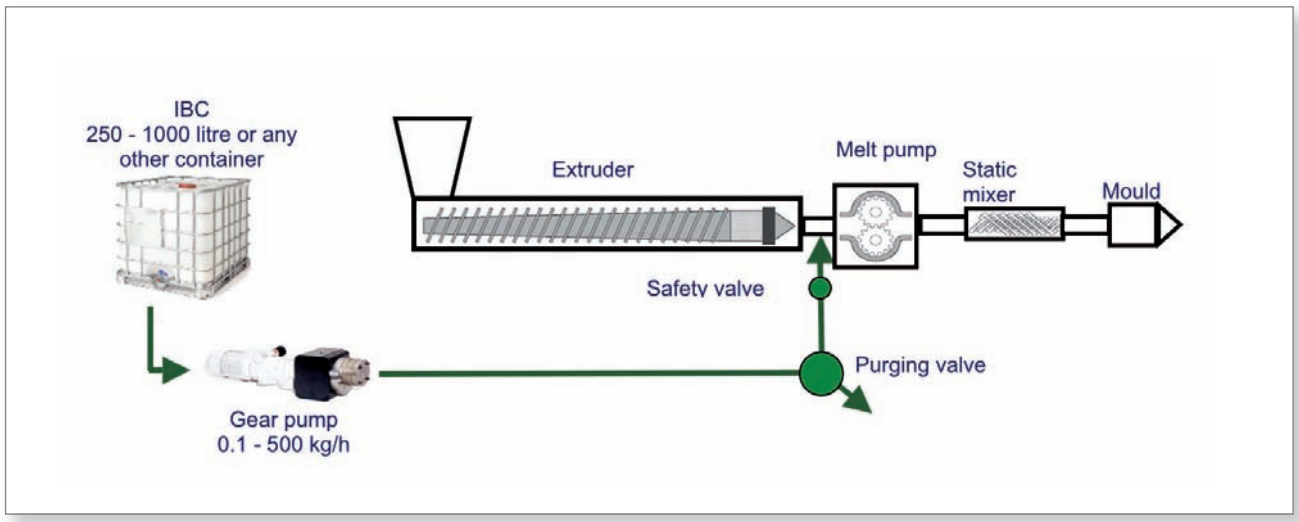
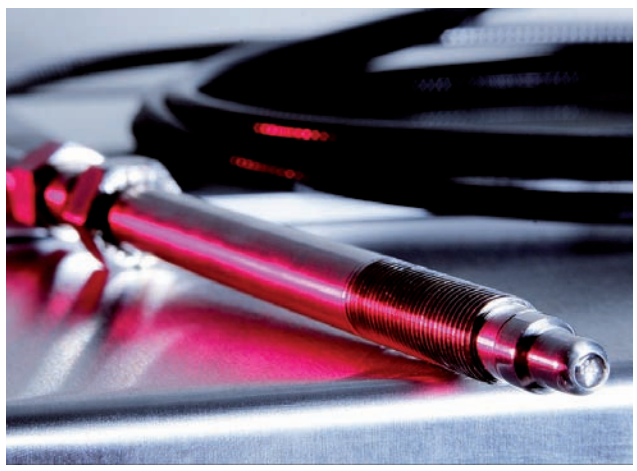


BASIC dosing system: scheme for injection of liquid colour

Inline colour measurement system from ColVisTec



Probe for colour measurement

ROWASOL recommends the inline process monitoring system from Berlin-based ColVisTec that uses optical spectroscopy (colour measurement) and which is particularly suitable for extrusion applications.

Continuous production processes are influenced by many different factors that directly affect the quality of both the process and the product. Many manufacturers try to monitor the process by taking random samples. The ideal solution, however, is a continuous stream of information on the process quality – from the start-up phase to colour adjustment to processing and finally the purging step.

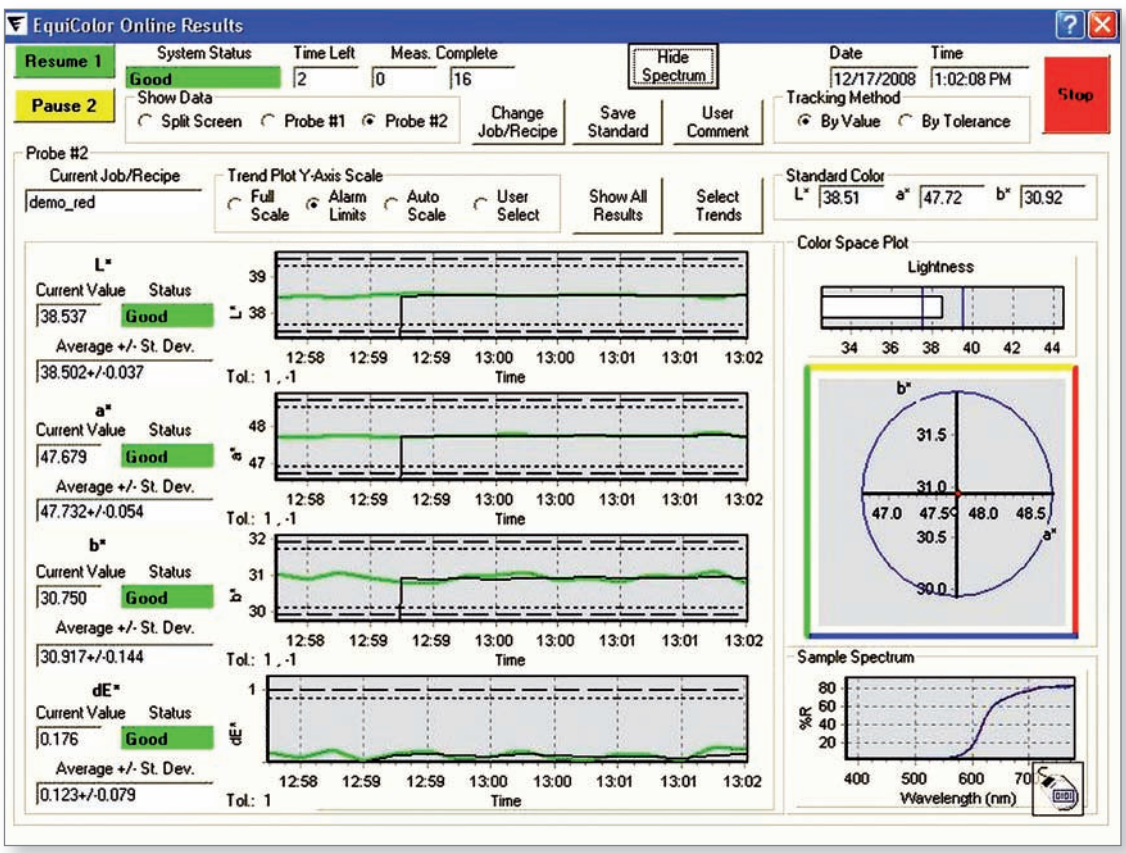
The ColVisTec Inline System supplies all this information in real-time, especially for extrusion applications. It comprises an industrial-grade spectrophotometer, fibre optics probes designed for extrusion processes, user-friendly software for evaluation and display of the captured data as well as a number of industrial interfaces to transfer the data to the customer's IT systems. The measuring point and electronics can be up to 20 metres apart. The system can simultaneously monitor two measuring points (i.e. two extruders). There are no active electronics in the vicinity of the measuring point.

The system's measuring probe has a 1/2" 20UNF thread with a standard pressure sensor bore that can be installed on the extrusion die. It leads light from the photometer to the plastic melt where it is reflected and sent back to the photometer. This simple arrangement captures the measured colour values, e.g. in L*a*b* format, at intervals of 1 second. Since the colour values of the melt correlate with those of the finished part, the system can determine whether compliant goods are being produced during processing.

Because variations in the process and raw materials affect the colour values, the system provides comprehensive process control and sends an alarm as soon as a defined threshold value with respect to the reference is exceeded.

The inline colour spectrometer from ColVisTec is a perfect complement to ROWASOL liquid colours and enables the highest possible productivity. It can also be used in combination with the ROWASOL RAINBOW System for inline monitoring of the purging step during a colour change. A blank sample is sent to the laboratory at an early stage and the safety buffer during purging is minimised, which also saves time and material.

Any corrections of the colour recipe can be carried out online with the RAINBOW System and the result is shown immediately on the monitor of the inline spectrophotometer.



Screenshot colorimetric evaluation

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The bureaucratic jungle of chemical legislation and plastics in contact with foods

The paradisiacal times for chemists with almost uncontrolled dealing with chemicals ended in Germany on 29.11.1894. On that day, the Federal Council of the German Empire passed a law “On the commerce of poisons". From that day on the situation became increasingly more delicate for chemists – and housewives unhappy with their husbands (!), because further legislation intended to regulate the handling of chemicals followed.

120 years later, global trading of goods and production of goods across the continents led to the globalisation of legislation on chemicals by the "Globally Harmonised System of Classification and Labelling of Chemicals" (GHS).

Which substances have to carry the GHS pictogram is regulated by Directive 1907/2006/EC, known as REACH. It obligates the manufacturers of chemicals to carry out a risk assessment before the start of commercial production or before placing a product on the market.

The manufacturer must collect already existing toxicological data and fill in missing information with new studies on this substance. A particularly valuable result of these studies is the no-observed-effect-level (NOEL) and the acceptable daily intake (ADI) of a substance. The NOEL is the quantity of a substance that a human can take in every day of their life without showing any symptoms. The word "observed" in NOEL indicates that the results of those studies may not be completely understood. The NOEL is thus divided by a factor that takes account of this uncertainty resulting in the ADI-Value, the acceptable daily intake.

The manufacturers are obliged to send the results of these studies to the European Chemicals Agency (ECHA), which manages the European Inventory of Existing Commercial Chemical Substances (EINECS).

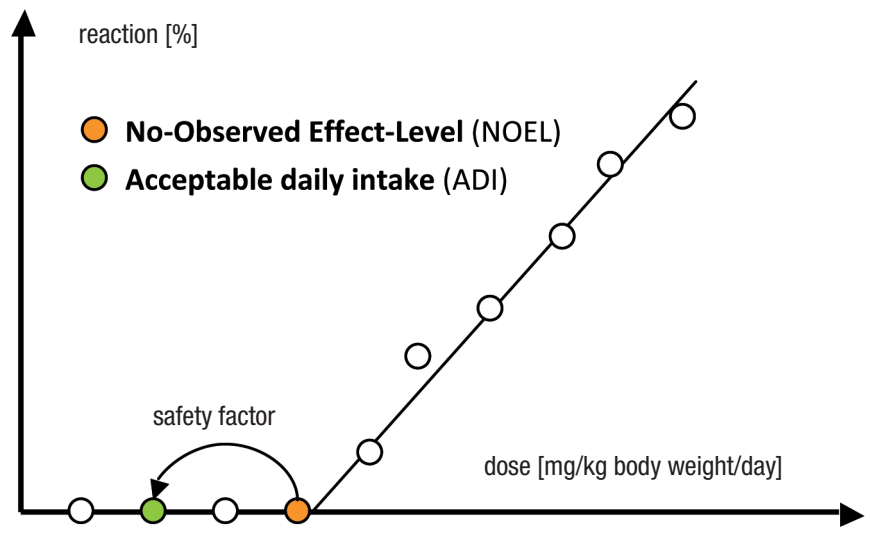

Diagram of a study on the toxic effect of a substance. Intakes of the substance above the threshold value (NOEL) lead to increasingly apparent symptoms of poisoning or are even fatal. Explanation: if the NOEL of a substance is 100 mg/kg/day, all experimental animals receiving a dose of 100 mg/kg/day or less remain in good health. Their unlucky colleagues, receiving doses above 100 mg/kg/day, show statistically increasing symptoms of poisoning with increasing dosage. Administration of 300 mg/kg/day could then lead to a response, for example, in 20% of the animals

The EINECS contains the chemical and physical properties of the approx. 100,000 chemicals used industrially in Europe. Substances, for which the aforementioned studies reveal particularly high hazard potentials or even mutagenic or carcinogenic properties will be classified as "substances of very high concern", SVHC. Their use and particularly their placement on the market will be closely monitored or even prohibited by the ECHA.

REACH applies for 12,539 substances being produced in quantities greater than 100 tons per year as well as for particularly hazardous substances, currently. The clocks are already ticking for all the other registered substances on the EINECS list, though. And the alarm is set to the 1st of June 2018.

It may surprise non-specialists, that polymers are not covered by REACH. However, chemists know that only the monomers – the building blocks from which polymers are made up in chemical reactions – can be hazardous, the polymers mostly are not. It is common knowledge for chemists, too, that due to the nature of the manufacturing process, synthetic polymers generally contain residual amounts of unreacted monomers. Since these are only present in extremely low amounts that are deemed to be non-hazardous.

Plastics can be eaten, though they are non-digestible and thus have no nutritional value. This makes them a dietetically advantageous packaging material for food, actually. So this is where the commodity directives 1935/2006/EU and 10/2011/EU enter the stage. The latter directive includes a list of allowed substances in plastics suitable for food contact and sets limits for the migration of these compounds from plastic parts into foodstuffs aiming to come below ADI values of hazardous substances, respectively. This ensures safe coffee machines, drinking cups, kitchen worktops, etc.

The same applies to beloved children's toys that are chewed on and maltreated with all kinds of sharp and blunt objects as well as to parts that can be swallowed. The rough treatment to which children's toys are exposed is taken into account in European Directive 2009/48/EC. The consequences for ROWA Masterbatch arise particularly from the standards EN 71-3 and EN 71-9, which are based on the aforementioned directive. Both were amended in 2013, leading to stricter requirements for plastics with respect to the content of heavy metals and organic pollutants (e.g. plasticisers, monomers, etc.).

Although state of the art synthesis technology produces virtually SVHC-free polymers and colourants, developing articles for sensitive applications remains a challenge. Analytical chemistry and equipment keeps track with and rapidly develops alongside synthesis technology. This, combined with the continuously growing understanding of our own nature and our surroundings, has noticeably narrowed the range of safe materials for everyday use objects. ROWA Masterbatch remains a well-prepared, competent partner to assist customers facing these challenges: starting from the first product idea, on to the selection of suitable plastics, additives and colourants and up to the correct processing skills.

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Obligatory self-declaration according to the food contact regulation

ROWA MASTERBATCH

Longer lasting: UV absorber masterbatches protect plastic applications

Users have very high expectations for the durability of plastics – products should be able to withstand UV radiation and other weathering effects for decades. But plastics are vulnerable to attack: the chemical bonds between the monomers that build a polymer chain can be broken by the high-energy radiation in sunlight. Oxygen, water and environmental effects intensify this damage mechanism, which is known as photo-oxidation. Some polymers show visible signs of this attack by yellowing. Further degradation leads to matt surfaces and chalking of recipe ingredients. The polymer becomes brittle and starts to crack – it may even be completely destroyed.

The ROWA Masterbatch portfolio includes recipes for all common polymers that can be specially tailored to the particular application and with which the aforementioned degradation process can be efficiently inhibited. ROWALID®-UV additive masterbatches can be used, for example, to protect TPU roof underlayment membranes, polycarbonate-based antenna feet for automobiles as well as cruise ship railings and planks made of PMMA.

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Boykung/Shutterstock.com

Nigrosine for a glossy black


Oliver Sved/Shutterstock.com

ROWA Masterbatch is one of the few manufacturers who has been producing a high quality PA nigrosine masterbatch for many years. This colour masterbatch is particularly suitable for black colouration of glass-fibre-reinforced nylon grades used in automotive engine parts. As the manufacturer of the PA nigrosine masterbatch, the company is not only a supplier of the automotive industry, it also supplies a number of established nylon manufacturers and compounders.

Carbon black is the traditional colourant – also in the automotive industry. However, carbon black can interfere with the mechanical properties and material behaviour during injection moulding. Therefore, soluble colourants are preferred for applications "under the hood". This includes nigrosine: these complex dyes are incorporated into a polymer matrix where they can dissolve. The colourant, with the Color Index Solvent Black 7, readily dissolves and thus provides a number of advantages compared to carbon black, particularly for glass-fibre-reinforced nylon: the surfaces of the parts have a high gloss level while the mechanical properties, such as the impact resistance, remain unchanged. Furthermore, nigrosine promotes complete filling of the mould because it does not increase the melting temperature of the polymer.

ROWA Masterbatch uses state of the art low emission nigrosine grades. Needless to say, that the extensive product portfolio of the Pinneberg-based manufacturer also includes a large selection of recipes containing conventional carbon black grades.

More information

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ROWALID® PA-Masterbatches, Schwarz / Black

Produktbezeichnung / Product Name	Träger / Polymer Base	Gehalt / Content	Teilchengröße / Particle Size	Farbmittel / Colourant	Typ / Type	Klasse / Class
ROWALID® PA-10331 SCHWARZ	PA6	20%	16 nm	C.I. Pigment Black 7	Furnaceruß / Furnace Black	MCF
ROWALID® PA-12184/2 SCHWARZ	PA6	20%	13 nm	C.I. Pigment Black 7	Gasruß / Channel Black (tiefschwarz / deep black)	HCC
ROWALID® PA-12978 SCHWARZ	PA6	25%	16 nm	C.I. Pigment Black 7	Furnaceruß / Furnace Black	MCF
ROWALID® PA-11192 SCHWARZ	PA6	30%	16 nm	C.I. Pigment Black 7	Furnaceruß / Furnace Black	MCF
ROWALID® PA-19413 SCHWARZ	PA6	30%	n.a.	C.I. Solvent Black 7	Nigrosine	n.a.
ROWALID® PA-16292 SCHWARZ	PA6	40%	n.a.	C.I. Solvent Black 7	Nigrosine	n.a.
ROWALID® PA-17991 SCHWARZ FDA	PA6	25%	20 nm	C.I. Pigment Black 7	Furnaceruß / Furnace Black entspricht / according to 21 CFR 178.3297	RCF
ROWALID® PE-1209 SCHWARZ	PE	50%	16 nm	C.I. Pigment Black 7	Furnaceruß / Furnace Black	MCF

HCC High Colour Channel
MCF Medium Colour Furnace
RCF Regular Colour Furnace

The ROWA GROUP at trade fairs 2014/2015

Equiplast – The International Plastics and Rubber Event
Booth no. E543
ROMIRA
Barcelona
30 September-03 October 2014

International Suppliers Fair (IZB)
Hall 6, Booth no. 6307
ROMIRA
Wolfsburg
14-16 October 2014

FAKUMA – International trade fair for plastics processing
Hall B1, Booth no. 1212
ROWA GROUP
Friedrichshafen
14-18 October 2014

VDI congress – Plastics in Automotive Engineering 2014
Booth no. 16
ROMIRA, ROWA Masterbatch
Mannheim
18-19 March 2015

National Plastic Expo (NPE)
South Hall, Booth no. S36145
ROWA USA, ROWA GROUP
Orlando
23-27 March 2015

European Coating Show
TRAMACO with ROWA Lack
Nuremberg
21-23 April 2015

Techtextil
ROWA Lack with TRAMACO
Frankfurt
04-07 Mai 2015

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

I M P R I N T

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National Plastic Expo 2015

National Plastic Expo (NPE) 2015 is almost here – the largest plastic show in North America happens March 23-27, 2015 in Orlando, Florida. Orlando is hosting the show for the second time after a successful hosting in 2012. Early estimates for NPE 2015 are expected to be in the range of 2,000 exhibitors and over 75,000 visitors from all over the world.

The ROWA GROUP is displaying at NPE 2015 – booth No S36145 South Hall. We will feature displays and information for the group divisions of TRAMACO, ROWASOL, ROWA Masterbatch, ROWA Lack, ROMIRA and ROWA Inc, USA.

ROWA looks forward to seeing all of their current worldwide customers and new potential customers at NPE 2015. Please be on the lookout for additional information as the date comes closer.

More information

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