12
Issue 15

inside acat

Newspaper for customers, friends and employees

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NEW MUNICH TRADE FAIR CENTRE
IFAT ENTSORGA

IFAT 2012
Zellcheming 2012
Clean Recycling of Synthetic Materials
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Sludge Dewatering in the Champions-League

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ZELLCHEMING EXPO
Wiesbaden, Germany
26 - 28 June 2012
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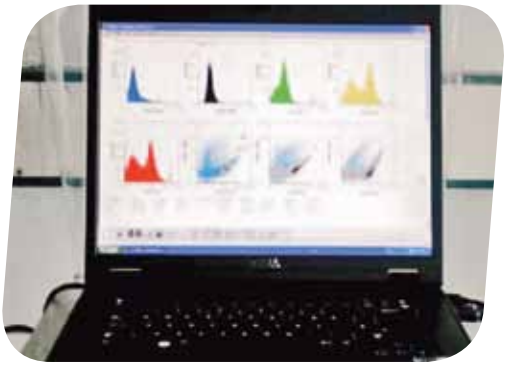
CONTENTS

Film recycling: a "clean thing" with ACAT systems and equipment

From wet sludge to fuel for small sewage treatment plants

RKL-Linz Asten: ACAT team plays against the Champions-League of the plant engineers



Selection and optimisation of fixing agents with the ACAT Pitch Counter (APC)

EVENTS, NEWS

2 IFAT ENTSORGA 2012

2 Europa Sales Meeting Paper Technology ACAT -Quality

3 Management with High Priority

3 ZELLCHEMING-EXPO 2012

COVERSTORY

4 Clean Recycling of Synthetic Materials

TECHNICS

7 Active Content versus Finished Product

8 From Wet Sludge to Fuel

11 Sludge Dewatering in the Champions-League

15 Sludge Dewatering in the Meat Processing Industry

18 ACAT Pitch Counter (APC)

20 Synthetic Dry Strength Agent - BondStar®

22 The Use of Wetting Agents

CHARITY, RESPONSIBLE CARE

24 The ACAT Art Calendar has a Double Effect

28 CLP & GHS – a brief Explanation

COMPANY NEWS

30 Anniversaries, Newcomers, Special Occasions

32 Imprint

33 Our Product Range

EDITORIAL

Photo: Spiola

Manfred Zabl

Dear friends of our company,

once again, in Spring the IFAT Entsorga 2012, takes place and numerous international experts and a wide range of professionals will come to Munich for Europe's largest environmental conference and exhibition. It is impressive how fast growing and stable the markets expand despite all economic crises and how much innovative power can be released every year. Environmental technology is moving much faster and it has developed into an important industrial sector. Even during periods of recession 2-digit growth rates are achieved; no other sector can present such good results.

Environmental technology has certainly grown up. I remember the days, when the nascent "green idea" came close to a revolution. Reports of protests and demonstrations suddenly were part and parcel of the daily news. From the adventurous activities of Greenpeace with their flagship "Rainbow Warrior" to various local protest groups, which often were accompanied by seers forecasting great disasters that would befall mankind. It was a warlike conflict with future visions and the number of interested people was increasing steadily. In the 1970s "go back to nature" sounded almost utopian for the decision makers. The movement was dismissed as a rebirth of the flower power movement and the demands were rejected as unrealistic. But the calls for the protection of environment became louder and numerous activities like information events and small exhibitions with organic products were established. Generally, only the potential problems were highlighted, but no strong approach to their resolution was mentioned. Over time our minds have changed and we have taken over responsibility for the future. Science, politics and business have recognised the big challenges for research and technological development, and a concept has been developed to achieve ambitious aims.

I think, to make real changes, time is needed. In this case we really can say that it was the most peaceful and necessary revolution in history and the whole of mankind will benefit from it in the long term.

The heroes of that time which were considered to be the product of the hippy generation, marked by sex, drugs and rock 'n' roll, are retired now, but their visions for a better, cleaner world for future generations lives on. Research and development of environmental technology has still a long way to go and a large number of challenges securing jobs for the future are still waiting to be solved.

Today no one needs to chain himself at the end of a drainage pipe to expose an environmental polluter. From such historic actions we can learn that it is always worth looking at things from a different perspective and it is worth fighting for a better world!

With this in mind, I wish all our readers an interesting visit to the IFAT 2012 and, if we should not meet there, a successful and sunny summer time!

Manfred Zabl
CEO Applied Chemicals International AG

IFAT ENTSORGA 2012

7 - 11 May in Munich

Our focus at this year's IFAT is the introduction of the mobile sludge draining plant which we will present in both versions, small and large-sized.

For the first time the world's most important trade fair for innovations in the areas of water, wastewater, waste and recycling is booked up five month before the exhibition starts.

IFAT ENTSORGA 2012 will be covering a total of 215,000 square meters of exhibition space - 180,000 m² indoors and 35,000 m² outdoors - , and that will set a new record for the show. In terms of exhibitors, the number will exceed the 2,730 that took part in the last IFAT ENTSORGA.

Our focus at the exhibition is the introduction of the mobile sludge draining plant which we will present in both versions, small and large-sized, outdoors at A3 place no.4.14 (next to door 8).

At the ACAT indoor exhibition stand we will present the brand new screw press AS 0505 S.

And of course, the traditional ACAT table football tournament will be held as usual – awaiting the final play of the Champions League in Munich.
We look forward to your visit to our stand 534 in hall A3!

Text: Susanne Durst

European Sales Meeting Paper Technology

Twice a year our European Sales Meeting takes place in Vienna where the paper technology sales team of Applied Chemicals International meets our distribution partners.
The theme of this year's meeting was "Visions 2020". Applied Chemicals International as being a customer-oriented, medium-sized company always strives to respond quickly and accurately to current customer demands and trends. Many ideas for possible projects were formulated and they will be realized in new projects. Also our R&D team obtained a wide range of tasks.
The social component was ensured by a nice evening program. The highlight certainly was the ice curling at the "Ice Dream" in front of the Vienna City Hall.

Text: Nuri Kerman

Highlight was the ice curling at the "Ice Dream" in front of the Vienna City Hall

ACAT - QUALITY MANAGEMENT WITH HIGH PRIORITY

„Technical service is our success" is the motto of the ACAT Group. Primarily we want to offer our customers the best technical solution. But this motto is much more than just a slogan. ACAT strives to ensure customer satisfaction with high quality of products and with optimum customer service. In order to achieve these goals we constantly re-examine our internal processes in product development, sales and marketing and order processing, as well as in all other areas and we improve them, if possible.

But leaving this aside it is important to respect the interests of today's society and to assume responsibility. In the center of our day-to-day activities we deliberately place, on one hand, the human being as an employee and on the other hand the environmental awareness of all members of the ACAT Group.

Accordingly the ACAT Group is particularly proud to receive a positive feedback about successful certifications for these matters.

Currently we hold the following awards:

- ISO 9001:2008 Certificate for our quality and improvement management
- Responsible Care Certificate for our environmental management
- Certificate of the Gütegemeinschaft Wassertechnik (GWT) for the quality of our products

The management would like to take this opportunity to thank all our employees, for their commitment to these values and objectives. We are convinced that this is the only way to offer a combination of best products and best service, to become accepted as a long-term and reliable business partner.

Text: Per Bjöörn

ZELLCHEMING-EXPO 2012

26 - 28 June 2012 in Wiesbaden

The ZELLCHEMING-Expo is the leading annual event of the pulp and paper industry in Europe.

The ZELLCHEMING-Expo is a central meeting place for managers and experts and an excellent platform for communication and networking.
This event is an ideal opportunity to meet international users and present the entire process chain of the pulp & paper industry. All areas are covered, from product development and production to components & systems and service & consulting. Especially the rising demands on environmental and energy efficiency are in focus.

This year Applied Chemicals International is again exhibitor of the ZELLCHEMING-Expo.
We look forward to your visit at our stand no. 304, hall 3!

Text: Susanne Durst

CLEAN RECYCLING OF SYNTHETIC MATERIALS

For effluent treatment, plastic films recycling companies rely upon ACAT equipment including screw press, ACAT know-how and ACAT as a competent equipment supplier for new systems..

AUTHOR: **CHRISTIAN KOZANDA**

To counteract horror scenarios as they were shown in the documentary film "Plastic Planet", innovative companies made it their business to produce high-grade plastic granules from collected plastic waste. The pellets are further processed into films or bags. Plastic films are delivered in bales and after a rough, manual waste sorting procedure, the material is crushed in mills and washed. Before drying it is processed into pellets in the extruder. The washing water resulting from the washing process is roughly screened. In the past this water has been directly pumped via exfiltration into the sewer system after several cycles. The company were aware that this method was not very efficient and in February 2011 the general manager of the company contacted ACAT to develop a facility for their waste water treatment.

Because of the high amount of water (3.500 m³ per month) and the high grade of pollution (more than 2.000 mg/litre COD (limit 800 mg/litre) at clean water costs of € 0,64/m³ and waste water costs of € 1,27/m³ - the construction of a new sewage treatment plant was the most reasonable solution.

Trials on site with different polymers showed that with powder polymers and a new sewage treatment plant the required limits were ensured and

Trials on site with different polymers showed that with powder polymers and a new sewage treatment plant the required limits were ensured

Plastic films are delivered in bales and after a rough, manual waste sorting procedure, the material is crushed in mills and washed. Before drying it is processed into pellets in the extruder

that the best dewatering results were achieved with a screw press.
In March 2011 the order was given to ACAT to build a new sewage treatment plant alongside the old one with a capacity of 100 m³/h, including the entire machine system with all the required piping, pumps, measurement and control technique as well as the switch and control system.

In two existing sewage pumping stations all process wastewater is collected and then pumped over a new water quantity measurement into the new waste water treatment plant built above the ground.

The plant is built in such a way, that the waste water flows down through the plant with a free gradient and the purified water flows through gravity pipes into two pumping stations for potable water located in the production hall.

From wastewater to pure water

The first step in waste water treatment is the mechanical removal of heavy ingredients like sand or metallic parts with a grit grader with spiral discharge. At the input of a tube flocculator the polymer solution is added. The dosage depends on the measured influx capacity. If needed a neutralisation agent or detergent can be added. Then the waste water is sent to the dissolved air flotation plant that is made of stainless steel (content about 80 m³). Here air pressure is added to a part of the waste water through the recirculation pump. At the inlet the water is enriched with air and it is supplied again to the waste water flow. In the flotation

basin the added air rises and promotes the formation of floating substances on the surface of the water, where the flotation sludge is drawn off continuously with two flight scrapers. At the same time sludge is accumulating at the bottom of the tank container. Both, flotation sludge and bottom sludge are removed discontinuously with pneumatic slides and transported through gravity pipes to a stainless steel tank. For dewatering it is further conveyed with eccentric screw pumps to a stainless steel storage tank, which is fitted with an agitator.

Over an overflow weir the treated wastewater leaves flotation and through gravity pipes it flows to the two potable water pumps and is returned to the production cycle. As soon as they are full the incoming water is transported to an additional surface buffer tank.

Sludge treatment

The sludge is further processed with an ACAT screw press AS 0505 S. Screw presses ensure that filtrate water from the drainage process can be returned to the potable water pumps, because it becomes very clean. The sludge is dewatered up to 45 – 60% dry substance and disposed in troughs. With a driving power of 0,75 kW and a speed of < 1 U/rpm the ACAT screw press AS 0505 S ensures minimum power consumption and minimum wear at a throughput rate of > 150 kg dry substance / h.

In November 2011 the plant was handed over to the customer and it is operating continuously 7 days per week and 24 hours per day. To the owner's complete satisfaction the specified discharge values (COD currently 623 ml/l) as well as the low maintenance efforts (support via calls to Vienna) and the reduction of water consumption (less than 800 m³/month) were achieved from the very beginning.

Due to this fine success we received a further order for the complete machinery equipment with two ACAT screw presses AS 0505 S, two screening machines and a grit separator for an Austrian plant in November 2011.

In 2007 we supplied a system for thickening, a grit separator and two screening machines to a branch of this company and they are still running without problem, proving the competence of ACAT. Everything is in one hand: plant installation, equipment, assistance and supply of operating material.

The sludge produced is dewatered with an ACAT screw press AS 0505 S.

ACTIVE CONTENT VERSUS COMMERCIAL GOOD

Discussions concerning the active content in the commercial good of the polymers are interesting for technicians but from a commercial point of view this is a matter of secondary importance.

AUTHOR: **ERICH SAILER**

In the early 50's polyacrylamides were synthesised for the first time. The simplest way to obtain an easily water-soluble polymer is the polymerisation in a liquid phase. The first step was done and the first emulsion polymers were produced. There was still a long way to go before production technology and solvent technology were far enough advanced to allow the production of water soluble powder polymers for waste water treatment. Since the late 1970s onwards mainly powdered polymers have been used. The advantages of these products were obvious: less material has to be transported and compared to the conventional emulsion products they were more economical. Only many years later did Allied Colloids develop the first cross-linked polymers in dispersion form, the trend reversed to liquid polymers. The new liquid products had dramatically improved features and with more stable flakes a better dewatering performance could be achieved. Following this, new dewatering systems were developed that could work only with liquid and cross-linked polymers

Nowadays nearly all producers develop emulsion polymers with similar characteristics and the first discussions on the active content versus commercial goods have started. As long as dispersions were being used, the world seemed to be all right. Instead of 1kg powder polymer, 2kg liquid polymer were used, because the activity of dispersions was 50% according to the information of the manufacturers who competed with one another by saying that the active content of the emulsion of a competing product is lower (only 40 to 45%).

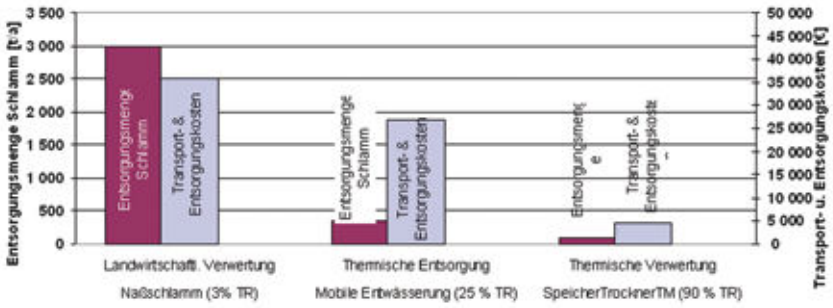
Polymer technicians including myself needed the information concerning the content of the active substance to compare the polymers regarding charge and molecular weight. For the customers in water and wastewater treatment or paper business it was not relevant. They never buy an active content but always a commercial product.

What does "active content" mean?

Manufacturers often define the term active content very differently. It could mean solids content, but also the active substances including aids like emulsifiers, deemulgators or only the polymer content.
But that makes no difference for an application or for the most cost effective use of polymers. Only the commercial good is what customers pay for - in other words they buy the whole package. The finished product is what is bought, and that is the entire product, nothing else makes any sense, because all emulsions and dispersions are technical products that are produced batch by batch and slight fluctuations in the quality are possible.
Due to technical reasons not even powders can have a content of 100% polymer. Usually they are strongly hygroscopic and they can adsorb up to 10% water and can also contain various other aids like flow accelerators and pH-stabilisers.
The discussion active content or finished product was introduced by technicians to be able to compare the different polymers concerning molecular weight and charge. But traders have to implement these comparisons into commercial reality because they only can buy the finished product. Nobody would pay for 80% rum much more than for an Edelbrand or for a high quality Jamaica Rum with "only" 35% alcohol content and no super market can buy alcohol as an active substance. With polymers it is similar.

FROM WET SLUDGE TO FUEL

A new economic procedure for continuous dewatering and solar drying in small sewage treatment plants: SpeicherTrockner™



AUTHORS: **MARKUS BUX**
EWALD KERN

The SpeicherTrockner™ from our technology partner THERMO-SYSTEM (Industrial- and drying technology) is a new drying procedure developed for the special requirements of small sewage treatment plants.
At the SpeicherTrockner™ the obtained sludge is thickened fully automatically and loaded continuously into the drying plant. There it is kept in stock for up to twelve

Solar SpeicherTrockner™ for 6.000 p.e. in Southern Germany

months and only once a year is it taken out, with a content of more than 90% dry substance. So mobile dewatering is not necessary and the residual sludge to be disposed of decreases up to 30kg to 40kg dry material per tonne wet sludge. Additionally, there is no requirement for investments in storage tanks for the wet sludge and in buffer containers for the filtrate water. The graph on page 10 shows the quantity of sewage sludge normally disposed of for 5000 inhabitants and the costs of waste disposal arising in the different treatment and recovery operations.

In addition to the purely economic aspect, the environmental impact of the different treatment methods has to be taken into account. Transport volume, carbon dioxide balance and environmental cleanliness as well as security of disposal, ensuring cost stability and flexibility concerning sludge utilization call for solar drying in sewage treatment plants.

Process concept economic efficiency of the SpeicherTrockner™

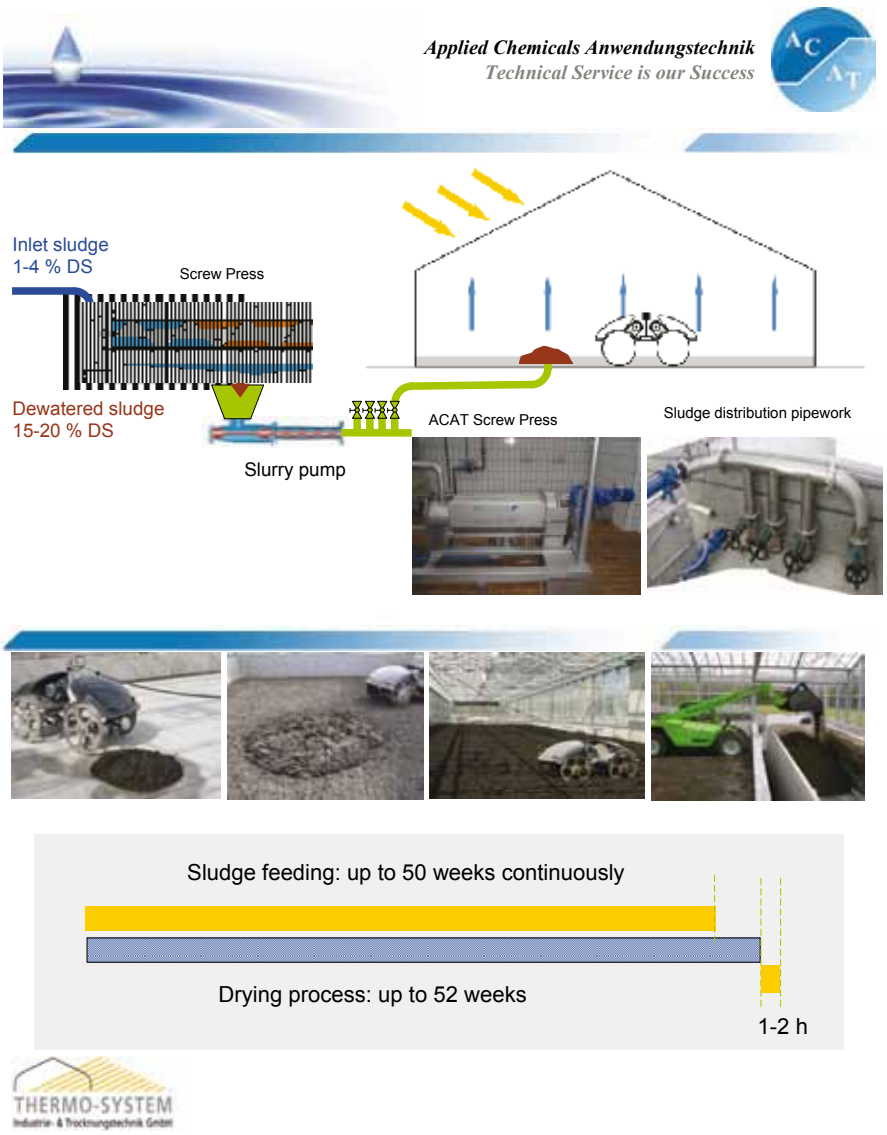
The patented solar SpeicherTrockner™ is based on a very simple concept. The obtained sludge is thickened with a simple, compact sludge dewatering unit to at least 15% dry substance and it is finally continuously transported without any long intermediate storage to a drying facility developed especially for this purpose. Following this, the wet sludge is mixed with dry material, well ventilated and dried at the same time. Like in an aeration tank the sludge is stabilized with aerobically living micro-organism and this prevents the development of unpleasant odors. The result is a hygienic and micro-biological perfect, odourless, evenly dried final product.

MINIMUM WORK AND COST - LONG USEFUL LIFE

Sludge that is dried to more than 90% dry substance is only taken out once a year. So weather and seasonally dependant variations that affect the drying process are completely eliminated – because 100% of the thermic energy comes from the sun.

Apart from the annual removal of the sludge, the whole process is fully automated.

Due to the high quality materials like glass, aluminium and galvanized steel for the building shell, reinforced concrete for the foundation and base tray, stainless steel and plastic for all components coming into contact with the sludge, the expected service life of the facility is at least 20-30 years. As there are only few mechanical components the



maintenance and operational costs are low. To ensure the optimal coordination of all the component parts all necessary components like the mechanical pre-dewatering, pump, control cabinet, and controller are already integrated into the modular system. On request, the unit can be supplied ready for use. The plant operator only has to provide a levelled foundation with supply lines

Space-saving, cost-effective

For our chosen example, a typical location in Southern Germany with 5000 inhabitants, a floor area of 750 square metres is sufficient to dry the whole sludge up to 90% dry substance. The total cost including investment return, depreciation, operation costs and thermal utilisation of the residual sludge is about 15 €/t wet-sludge and that is quite the same as for utilisation in agriculture. Compared to the thermal disposal after mobile drainage the costs are reduced up to 30%.

With the solar SpeicherTrockner™ a significant proportion of the variable costs which depend 100% on the fluctuations of the market are replaced by fix costs, and therefore the costs for the depreciation as well as for the return on investment are better predictable.

With the SpeicherTrockner™ the fixed costs compared to the total costs are relatively high, and therefore they are not exposed to future price fluctuations as they are with mobile drainage and subsequent combustion of the dewatered sludge. During drying almost all of the pathogens in the sludge are eliminated. So the security of disposal is substantially higher than with other alternative processes currently used in small sewage treatment plants.

Because of the standardised modular system and the possibility to move the system, delivery transactions as well as leasing or operating models are possible.

Summarising the above, it can be said that from an economic and business viewpoint for smaller municipalities the SpeicherTrockner™ is a very eco-friendly alternative to conventional sludge treatment processes.

SLUDGE DRAINAGE IN THE CHAMPIONS LEAGUE

The installation of three dewatering lines with GEA Westfalia separators at the sewage treatment plant Linz-Asten with a capacity of for 950,000p.e.

Photo: LINZ AG

AUTHOR: **EWALD KERN**

The waste water of the entire urban area of Linz, as well as 39 surrounding communities is passed to the Asten sewage treatment plant which belongs to the LINZ AG. Furthermore, the biodegradable waste water of big industries as well as the waste water from the coking processes of the Voestalpine AG steelwork in Linz and the DMS Chemie-Linz are treated at this plant. The industrial share is about 40 % of the total load. In order to handle these huge volumes of waste water the sewage treatment plant is designed for a total capacity of 950,000p.e. The maximum flow from the catchment is drained mainly with the mixing system is 8,8 m³/s!

Only the major projects to be awarded attract the interests of media and experts and they are kept under critical observation. Our ambition to win the tender for such a prestige project (the new equipment of a sludge dewatering plant) was correspondingly great also because references gained for a successfully installed plant of this magnitude are very valuable. But it was a great challenge to fulfil the high technical demands

Five-fold spiral discharge bottom for sludge silo

ACAT polymer solution preparation

Separators before the installation of the noise protection encapsulation

Encased separator, in front an old chamber filter press

required from the planning office Dr. Lengyel ZT that was responsible for tendering.

The economic and technical preparation of three complete alternative offers - using a high-pressure membrane filter press, a screw press or a separator - and the on-site test runs were challenging and labour intensive.

From the successful qualification...

Correspondingly, tension was high during the time of tender evaluation when the offers were opened. And finally ACAT Vienna was selected as the best bidder with the offer for using a separator and we got the invitation to show with a test pressing that the values we guaranteed for this application can be achieved. This was the last hurdle we had to overcome. In cooperation with the staff of our project partner GEA Westfalia Seperator and our colleagues who deal with flocculants, we succeeded in confirming that the previously defined values can be achieved, even under the extreme winter weather conditions that prevailed during testing.

...to the exciting high-precise "landing"...

As the maintenance of the dewatering performance has to be ensured, the four existing chamber filter presses had to be dismantled in stages. The realisation of this project was only possible by the perfect cooperation between the operating team of the sewage treatment plant LINZ AG under the management of DI Thomas Gamperer, the on-site construction management of the office Dr. Lengyel ZT and DI Alexander Lengyel and the ACAT project manager Michael Rieger.

With a delay of only one day (at a schedule of fourteen months) the first filter cake fell into the sludge silo on 2 December 2011 and the full capacity of the

waste water treatment plant was taken over.

… to a continuous operation without problems

In the meantime three fully autonomous operating dewatering lines with GEA Westfalia separators type UCD 536 were installed. Each line has a capacity of sludge throughput of up to 1,100kg DS/h. They operate 24 hours a day and offer all options for sludge conditioning. To ensure the compliance of the required maximum noise level of 75 dB (A) the separators have a noise reduction kit. All routine maintenance and service work can be carried out quickly, because the separator has two openings which make access easy. The installed sensors report maintenance requirements independently and so the servicing expense of the separator is reduced to what is really necessary.

The de-watered sewage sludge is transported for about 22 meters vertically with a shaftless spiral conveyor to two sludge silos each with a capacity of 250 m³ for intermediate storage. There is no time for a coffee break for the drivers of the sludge trucks. Loading via an integrated discharge bottom with a capacity of 200 tons sludge /h takes only about five minutes.

Since 7 December 2011 the test operation under ACAT supervision is running without significant problems.

The de-watered sewage sludge is transported for about 22 meters vertically with a shaftless spiral conveyor to two sludge silos each with a capacity of 250 m³ for intermediate storage. There is no time for a coffee break for the drivers of the sludge trucks. Loading via an integrated discharge bottom with a capacity of 200 tons sludge /h takes only about five minutes.

Technical Data Sewage Treatment Plant Linz-Asten

CAPACITY: 950,000 PE_{60}

WASTEWATER FLOW

Maximum dry weather influent	Q_{TW} 2.7 m³/s
Maximum biological influent	$Q_{Bio\text{-}max.}$ 4.8 m³/s
Maximum combined water influent	$Q_{MW\text{-}max.}$ 8.8 m³/s

POLLUTION LOAD

COD	112 t COD/d
BOD_5	57 t BOD_5/d
Nitrogen	10 t Tot. N/d
Phosphorus	2.0 t Tot. P/d

PLANTS:

MECHANICAL TREATMENT STAGE

Inlet pumping station

4 Archimedean screw pumps, 2.2 m³/s each	8.8 m³/s
Average pumping height	4 m

Screening station

4 coarse screens	8 cm
1 coarse screenings press	4.0 m³/h
4 fine screens	1 cm
2 fine screenings press, 4.0 m³/h each	8.0 m³/h

Grit chambers

4 longitudinal sand traps, 30 m each 135 m³	540 m³
2 sand classifiers	

Primary settling tanks

2 primary settling tanks, 50 m dia 6,900 m³ each,	13,800 m³
Retention time with max. dry weather influent	1.42 h
Retention time with max. combined water influent	0.44 h

BIOLOGICAL TREATMENT STAGE

Activated sludge tanks

COD-design capacity (85 percentile)	72 t COD/d
N-design capacity	10 t N/d
Design sludge age (12° C)	12 d
2 selector mixing tanks, 3,500 m³ each	7,000 m³
4 aeration tanks, 12,000 m³ each	48,000 m³
Connecting and blending channel	
4 activated sludge tanks, 11,000 m³ each	44,000 m³
Total aeration tank volume	99,000 m³
Water depth	7.4 m

Secondary clarifiers

8 tanks, 50 m Ø, 8,750 m³ each	70,000 m³
One feed pump per clarifier tank	Q = 1,100 l/s
Maximum surface load q_A	1.0 m/h
Maximum sludge volume load q_{sv}	450 l/m²/h

Oxygen transfer

Maximum oxygen demand	4.7 t O_2/h
Maximum oxygen demand	60 t O_2/d
Maximum operational air flow	70,000 Nm³/h
Membrane – strip aerator	3,248 pcs
2 x 2 plus 8 x 8 agitators	
2 turbo-compressors 650 kW each	9,900 – 22,000 Nm³/h
4 turbo-compressors 350 kW each	5,500 – 12,200 Nm³/h
Oxygen transfer rate in clean water	4.3 kg O_2/kWh

SLUDGE TREATMENT

Primary sludge thickening

2 pre-thickeners, 1,500 m³ each	3,000 m³

Excess sludge thickening

4 belt thickeners, 550 kg TS/h each;	2,200 kg TS/h

Digestion plant

3 digesters, 10,400 m³ each	31,200 m³
Retention time	30 d

Sludge dewatering

3 centrifuges with polymer conditioning	3,300 kg TR/h
Final dry substance content	25 – 30 %

Sludge disposal

Incineration in Linz waste to energy plant

ENERGY PRODUCTION

Digester gas (65 % CH_4)	18,000 m³/d
Landfill gas (45 % CH_4)	13,000 m³/d
Gas mixing/storage tank	5,000 m³
Biomethane plant	450 Nm³CH_4/h
7 cogeneration units 650 kW_{el} each;	4,550 kW_{el}

Photo: LINZ AG

SLUDGE DEWATERING

in the meat-processing industry

Marmy Viande en Gros SA is one of the largest slaughterhouses in Switzerland. Correspondingly large is the quantity of waste water. Recently for the dewatering of approximately 12.000 m³ sludge/per year the ACAT screw press AS 0705 S is used.

AUTHOR: **RONALD POELGEEST**

Marmy Viande en Gros SA situated in Estavayer-le-Lac is one of the largest slaughterhouses in Switzerland. In 1990 the slaughterhouse started and originally there was only a mechanical pre-treatment for the waste water to remove coarse material. In 2000 the company was enlarged. Since this time up to 2,200 cattle are processed per week. With the expansion it was also necessary to enlarge the

The installation and commissioning was completed within four days, according to the customers request

waste water treatment system. Since then at Marmy Viande the intrusive material has been removed out of the slaughterhouse waste with a fine screen with a width of one millimeter. The pre-treated waste water is collected in a buffer container. Via a flocculator, where flocculating agents are added to separate sludge from water, it is transported to a storage tank. The separated water is piped to the municipal waste water treatment plant of Estavayer-le-Lac.The sludge from the storage tank is dewatered with a screw press and the filtrate water is returned to the buffer container.

When the existing screw press needed cost-intensive repair services on the drive unit, Marmy Viande gathered information for the latest technologies.

The first meeting between Marmy Viande and ACAT was at the beginning of 2011. The conversation was followed by a test dewatering with an ACAT screw press.

The ACAT- screw press: Unbeatable in cost/benefit calculation

With a trial it was possible to demonstrate the clear advantages of the ACAT screw press to the existing screw press. Starting with a dry substance content of the thin sludge of 4,9% the dewatering values achieved more than 40% dry substance without any optimization. That was nearly a doubling of the dewatering values which were achieved with the existing system and the filtrate was visually free of solids.

An additional advantage of the ACAT screw press is the extremely low water consumption. In a cycle of four to six hours the screen basket is automatically cleaned with process water and the water consumption is about 300 l per wash.

Unloading from the truck, to the hall for installation

Finally the profitability analysis was the decisive factor to buy the ACAT screw press Type AS 0705 S with a throughput of 320 kg dry substance/h or 10 m^3/h. The ordered volume included also the adaption of the existing plant to the new system and a new control unit for a fully automated sludge drainage system.

After an initial delay caused by prolonged periods of very frosty weather, the system was installed and it was put into operation at the beginning of March 2012. To keep the running operation of the slaughterhouse a mobile sludge dewatering system was used. The installation and commissioning was completed within four days, according to the customer's requests.

The guaranteed performance concerning throughput and degree of drainage was achieved. We wish to thank them for this order and we would like to express special thanks to Mr. Moret, Head of the waste water treatment, for his support which contributed significantly to the smooth implementation of this project.

Bitte der Hydrant steht aber auch wirklich **deppert** da.
Angela K., Teesdorf

Verstanden:

Der Kfz-Freischaden der Generali

Nähere Infos: Georg Furlic,
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Um zu verstehen, muss man zuhören

Unter den Flügeln des Löwen.

GENERALI GRUPPE

ACAT PITCH COUNTER (APC)

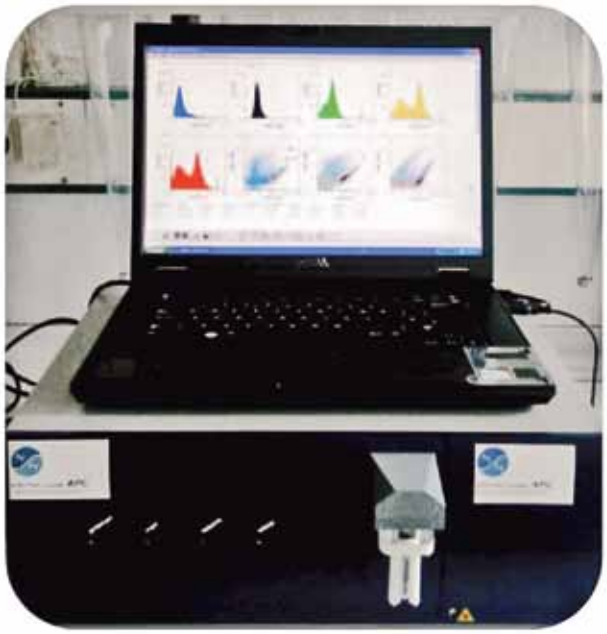
Selection and Optimisation of Fixing Agents

With the ACAT Pitch Counter (APC) the optimal dosage and dosing points can be selected. This method can be deployed easily in paper mills, so plant tests can be accompanied perfectly.

AUTHOR: **NURI KERMAN**

To achieve an effective reduction of impurities like wood pitch, white pitch und stickies, they should be fixed on fibers and fines in their smallest possible form. This is usually achieved using inorganic and organic fixing agents. For a successful fixation of colloidal materials with minimized agglomeration on the type of fixing agent, dosage and dosing point are critical variables. Agglomerates can cause degradation of quality and paper breaks at paper machines.

Nowadays turbidity measurement and charge measurement are used for the selection and optimisation of fixing agents. These measuring methods can offer only a simple overview but cannot give information how the colloidal material is fixed and agglomerated.

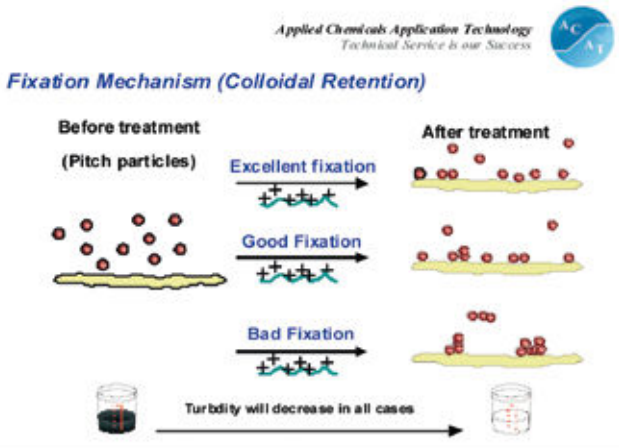


The ACAT–Pitch Counter (APC) can be easily deployed locally in paper mills

We want to present a new method to fix colloidal substances on fibers and fines in the desired direction. The advantage of this method is that product selection, determination of dosage and dosage point can be deployed easily in paper mills on site. Following, we show examples for applications and we discuss the different strategies to regulate the dosage of fixing agents.

Impurities and their costly consequences

With different fibers and chemical additives impurities are introduced into paper machine circuits. If they are not treated in their smallest form without



The APC method can improve the turbidity value in all cases (from perfect to poor fixation)

undue delay, they later can cause deposits in paper mill circuits and on paper machines. As a consequence paper defects can arise, which often occur if printed and this leads to costly complaints.

Deposits can be formed on different points, even where they are not expected, for example in pumps and screens. In many cases the treatment of impurities with unsuitable additives, treatment on the wrong points as well as the wrong dosages are responsible for these deposits. Changes in temperature and pH-value, shear forces and especially various cationic additives can form not well fixed impurities which later can build agglomerates that can be fond as deposits on parts of the paper machine or in the paper leading to loss of production and customer complaints.

Optimisation with the APC (ACAT Pitch Counter)

Today we have standard methods like measurements of turbidity, charge and COD but they are not able to give information for the selection of the suitable additive, the needed quantity and the dosage point. For example, an agglomeration of impurities cannot be detected with these methods. The APC-method (ACAT Pitch Counter) gives information how impurities are fixed.

Fig. 1 shows the different mechanisms from perfect to poor fixation. In all cases turbidity will be improved.

Due to the compact design the APC can be easily deployed locally in paper and pulp mills

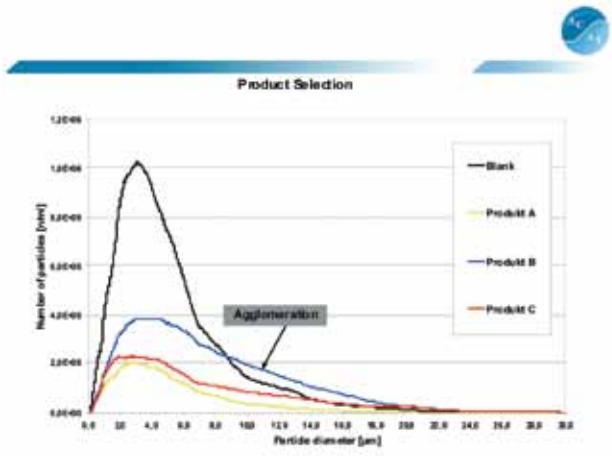
Interpretation of results

In general, on the x-axis, the particle size of pitch and stickies can be read in µm. On the y-axis the number per ml can be read. In this case the study is made with white pitch particles from coated broke. An ideal fixing agent (yellow and red curve) should reduce the number of particles in all size-ranges compared to the blank sample (black curve) without producing agglomerates with smaller particles (blue curve).

With the APC the different fixing agents and dosages that are responsible for these deposits are measured and evaluated in the terms of cost/benefit factor. Then together with the customer an approach is defined.

Conclusion

With the APC method the optimal fixative, the optimal dosage and the optimal dosing point can be selected. In addition, studies can be carried out directly in the paper mill and so the method is ideally suited to accompany plant tests.



Interpretation of APC results

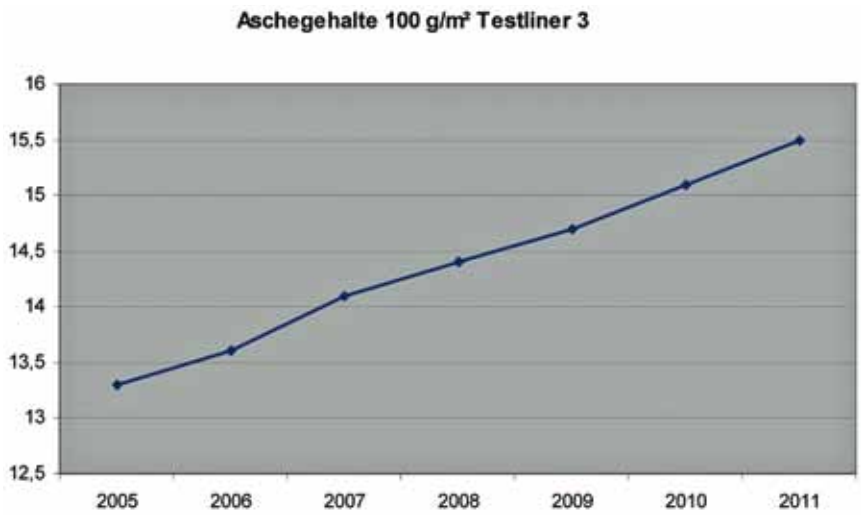
SYNTHETIC DRY STRENGTH AGENT–BONDSTAR®

We are increasingly being faced with the question of dry-strength or higher filler loadings without loss of strength in graphic papers. This question and our experiences in the field of dry strength agents have motivated us to revisit this issue.

Photo: Spiola

AUTHOR: **NURI KERMAN**

The enormous cost pressure on graphic paper manufacturers in recent years has resulted in the fact that more expensive fibers have been partly replaced by fillers, in stock as well as in coating.
This trend is currently continuing as some new developments are still in the experimental stage. Different concepts – either by dry strength agents, improved fillers or optimized coating color additives - have already been a success, but within a short time the increasing filler content has led to



Trend ash content at test liner 3

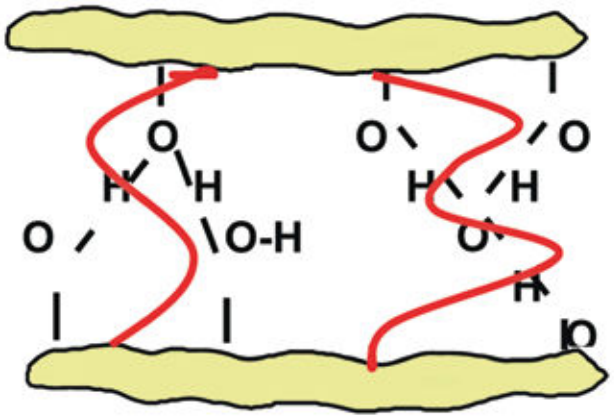
an increasing fillers content in waste paper. Due to this fact some paper manufacturers, who process especially ordinary grades of waste paper such as 1.01, now have problems with their water circulation systems and with strength values. Mainly these are the producers of newsprint paper and packaging paper. Some producers try to discharge the ash selectively with mechanical devices for example with flotation plants. This succeeds to a certain degree and provides relaxation for a limited period of time.

Quote Mr. Michael Habeck plant manager of the Adolf Jass GmbH paper mill: „We have become a waste disposing company for Rügen chalk."

But the packaging paper producers currently have to deal with several trends: increasing fillers content, decreasing quality of waste paper due to the high demand and multiple recycling, as well as the trend towards low basis weights. Meanwhile, 80 g/m² are the standard grades for fluting paper. In the graph on the left above the average ash content of a packaging paper maker is shown as an example.

ACAT now offers different synthetic dry strength agents - the BondStar® series. With these dry strength agents it is possible to replace fresh fibers or higher quality recycled fibers with lower quality recycled fibers and therefore with cheaper waste paper grades, without a negative influence on the required features. Furthermore, it is possible to keep strength properties stable despite higher ash content in the paper. As a side effect in some systems these chemicals can significantly improve the efficiency of paper mills. This effect causes especially a more stable and stronger paper web whereby the speed can be increased and the breaks caused especially by edge defects are reduced. Our synthetic dry strength agents keep their characteristics also in closed systems with high conductivity, where the wet-end strength is no longer working.

For the future a market is created for synthetic dry strength agents that will partly be in competition - but mostly they will be a complement- to conventional dry agents such as starch. For ACAT this area is a number one research and development project.



The new dry strength agents of the BondStar® series keep strength of paper stable despite of higher ash contents

THE USE OF WETTING AGENTS

ACAT distributes a range of wetting agents from our supplier Münzing Chemie. In this article I would like to present some aspects for the use of these products and the possibilities of product selection.

AUTHOR: **ALEXANDER FRANK**

First I want to outline some surface defects and flow problems. The reasons for the different flow problems can be:

REASONS FOR FLOW PROBLEMS

- **volume reduction during drying**
- **evaporation of the solvent**
- **weight or thickness of film**
- **rheology or viscosity influence**
- **type of application**
- **drying time and open time**
- **bad defoaming**
- **impurities**
- **too high surface tension of the liquid coatin**
- **varying or different surface tension in the wet film**

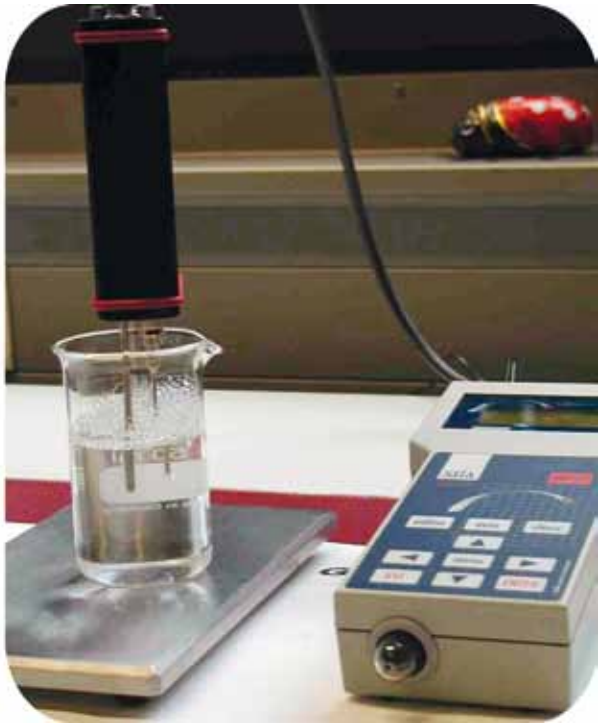
Some of these problems can be solved with wetting agents, others not:

SOLUBLE ARE:

- **craters**
- **fish eyes**
- **orange skin**
- **blistering**

INSOLUBLE:

- **tearing**
- **sagging**
- **pinholes**
- **roller / brush marks**



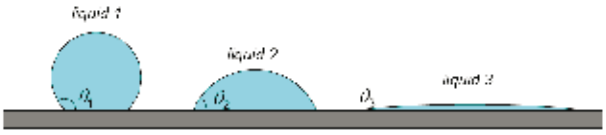
The bubble pressure method is one of the several methods for measuring the surface tension

Therefore it is essential to accurately study the surface defects and to determine their causes. Only disruptions that are caused by changes of surface tension can be solved with wetting and levelling agents.

The Ring Method is another method of measuring the surface tension

WETTING OF THE SUBSTRATE:

- **The lower the contact angle, the better is the wetting of the substrate.**
- **The contact angle is influenced by the surface tension (s), the liquid and the surface energy (s) of the substrate.**
- **Liquids spread on substrates when the surface tension is lower than the surface energy of the substrate.**



Wetting of the substrate / contact angle

From this, it follows that the surface tension of the coating is the most important criterion for a good wetting. Surface tension has to be lower than the surface energy of the substrate. In water-based systems wetting agents are necessary to reduce surface tension.

For the measurement of the surface tension a number of methods are available. One of these methods is the Ring Method by Du Noüy.

It is a classic method for the measurement of static surface tension. Here, a platinum ring is placed on the surface of a liquid and then withdrawn slowly. Between liquid and surface a lamella is formed. The maximum force at which the lamella breaks is determined and used to calculate the surface tension.

Another measurement method is the so-called bubble pressure method. This is the most common method for determining the dynamic surface tension. Thereby, air is pumped through a tube into a liquid. The rising bubbles produce counter pressure DP at the exit of the tube. This pressure is related to the surface tension of the liquid. Using the Young-Laplace equation the dynamic surface tension sd can be calculated taking the bubble radius r into account.

$$\sigma d = \frac{\Delta P \times r}{2}$$

For selecting the right wetting agent some additional parameters have to be considered. In addition to the measurement of the surface tension parameters such as the behaviour of defoaming, visual assessment and some others play a significant role.

IN SUMMARY IT SHOULD BE NOTED:

- **Not only the surface tension, but also the polarity of the coating is influenced**
- **Laboratory tests are necessary to assess and to prevent negative impacts**
- **All surface-active substances influence each other**
- **In combination with defoamers wetting agents can be ideal partners**

Therefore, we are pleased to offer our customers a trial in the laboratory of our supplier Münzing. Our field staff will be happy to advise you on the optimal use of our products.

THE ACAT ART CALENDAR HAS A DOUBLE EFFECT

AUTHOR: **DR. ANTON DIESTELBERGER**
FORSCHUNGSVEREIN RAINMAN'S HOME

The ACAT art calendar 2012 convinces with a successful fusion of Chinese astrology and traditional Western zodiac signs and with high artistic quality, Erwin Kastner carried out this task. In many offices the calendar takes its traditional place and is hopefully enjoyed by the viewer.

This year CEO Manfred Zabl has given a larger number of this respectable print to Gertrude Mitterböck, who is responsible for the selection of the artist and for the design of the ACAT calendar, for sale to do some good with the money generated.
For many years Gertrude Mitterböck has not only taken an active role in cultural life but she is also committed to social concerns in many ways. At her suggestion "Rainman's Home" received the money generated by the sale of the ACAT art calendar 2012. Thanks to her personal commitment and her own power of persuasion she has succeeded to raise almost 2000€ for "Rainman's Home" one might say she collected it.

Chance for „Rainpeople"

In the movie „Rain Man" Dustin Hoffman portrayed an autistic young man for whom there seemed to be no place in society, although he had considerable skills in specific areas. To keep their children from a similar fate and to avoid threatening poverty, some parents of autistic children founded "Rainman's Home" in Vienna. Today the association is operating two day centers which provide daily routine work and offer employment, support and therapy for 40 people with autism or other special needs. After finishing school, this is usually at the age of eighteen years, people are accepted here, if they need an occupational therapy, because they do not meet the demands of the labour market. There is a wide variety of employment offered and they are primarily focused on the strength of each individual. Outstanding performances are achieved in artistic design. The artist group Rainman especially impresses with graphics and acrylic paintings. Also in the ceramic studio distinctive products are made and in the printing shop they work with screen printing and linocut. In addition to the development of their own strength a wide range of support is offered: physical training, training in communication, development of cognitive skills, music, every day techniques, teaching of society-compliant behavior, promotion of autonomy, cooking and so on.

Causes and Characteristics of Autism

Much more people than estimated a few years ago are affected by this pervasive developmental disorder. Currently, we can even assume that a half to one percent of the entire population, that is 5,000 out of one million persons, is affected; in Austria approximately at least 40,000. The increasing number and the reasons why give cause for concern. The very fact that the diagnosis is made more quickly today than in the past is not enough for an explanation; there must be other causes. The number of children with autistic characteristics is increasing, but the causes for this disorder are still unknown. Until now it was impossible to find a relevant marker characteristic for autism. Until now the increa-

The artist group Rainman especially impresses with graphics and acrylic paintings. In the ceramic studio distinctive products are made and in the printing shop they work with screen printing and linocut.

sed efforts of scientists in the field of genetics and brain research have not been successful but the research is very difficult, because of the varying picture of disease symptoms.

At an international autism forum organised by Rainman's Home every two years Isabelle Rapin, the 'grand old lady' of autism research said that there are probably as many types of autism as there are people with autism. The more it is important that academics and psychologists develop methods and concepts that help to find the right way to deal with autistic people and to enable them and their families to lead a decent and "normal" life. Individualization and differentiation are the pillars on which the multistage model of care of Rainman's Home is based.

Most obvious are the problems of autistic people in social behaviour. Some people with autism may not speak, or have fairly limited speech. They will usually understand what other people say to them, but prefer to use alternative means of communication themselves, such as sign language or visual symbols. Others will have good language skills, but they may still find it hard to understand the give-and-take nature of conversations, perhaps repeating what the other person has just said (this is known as echolalia) or talking at length about their own interests.

It helps if other people speak in a clear, consistent way and give people with autism time to process what has been said to them.

The world can seem a very unpredictable and confusing place to people with autism, who often prefer to have a fixed daily routine so that they know what is going to happen every day. This routine can extend to always wanting to travel the same way to and from school or work, or eat exactly the same food for breakfast.

The two Rainman's Home day-care centres offer a wide variety of activities and they are primarily focused on the strength of each individual. Outstanding performances are achieved in artistic design.

Special Challenge for Parents and Educators

The work with autistic people can be considered as "the perfect art of education". There are very special academic indicators as they become disturbed and show difficulties in behaviour as soon as the method-conforming way is left. The education and the handling of people with autism can never be done en passent. It requires a great deal of information, proven methods and well-grounded concepts, so for many parents it is often extremely difficult. But new insights have lead to new educational parameters for educators who have become familiar with autism. The understanding of structured education requirements that are almost "vital" for autistics, can also be very helpful for other people.

What are the key factors?

The basic method is structured learning and living. This requires educators and families to recognize complex entities, which form part of every-day life and to divide them into smaller parts. Additionally it is important to change our perspective. We only can understand people with autism if we can see the world through their eyes. In other words, we have to understand the structures of their "otherness" to develop a diagnosis for the perceptional diagnosis. This developmental disorder is profound, because all senses can be affected, and therefore the entire "Being". Autistics can see, hear, think, feel and perceive - but in a different way. At present, there is no "cure" for autism. However, there

is a range of interventions - methods of enabling learning and development - which people may find to be helpful.

Networking and cooperation

Rainman's Home leads also a Research Association and national and international collaboration are important today. The concept of Rainman's Home is widely accepted among experts. Currently on the locations in Vienna people from three provinces of Austria are supervised. Throughout German speaking countries we are invited to training courses, lectures and seminars. We have an active cooperation with schools and universities that train teachers and there are close international contacts with "Autism Erope" and with EACD (European Academy for Childhood Disabilities). On one hand public relations work is a possibility to show those who needs help a way and on the other hand it is a chance to present our association and concepts to find new supporters.

In the preface of the ACAT art calendar Gertude Mitterböck wrote: "We are all more or less mixed types marked by the constellations of stars and planets at the time of our birth, by life circumstances as well as by the way we use or use not our predispositions and talents." The same also applies to autistic people.

As they are not able to make decisions for their fate it is up to us to open chances for them. And we all carry a few grains of autism within ourselves.

RESEARCH ASSOCIATION RAINMAN'S HOME
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Transport und Logistik

CLP & GHS – A BRIEF EXPLANATION

One of the key factors for the success of the ACAT Group is the implementation of legal requirements. In the following I would like to explain in a few words the harmonised classification.

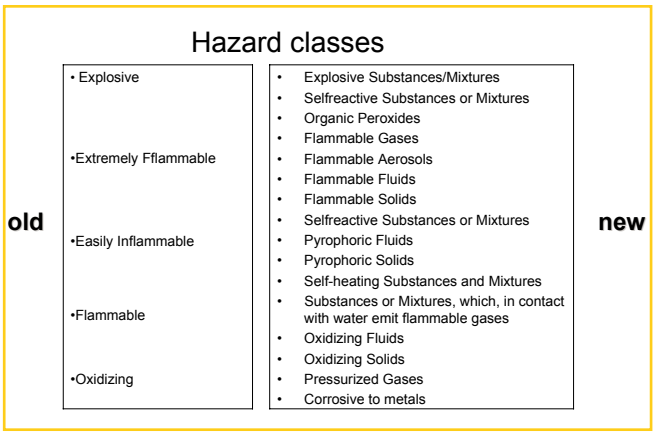
AUTHOR: **KARIN PRUCKMAIR**

Worldwide different systems of classification and labelling of chemicals are used, so it is possible that one and the same substance can be classified as poisonous, harmful to health, or even not harmful, depending on where it was classified e.g. in Europe, USA, India or China. This fact results in problems not only for transport and sale but also for health and safety at work and for consumers.

So the United Nations developed harmonised criteria that are issued in a two-year cycle. It is called GHS: „Global Harmonized System of Classification and Labelling of Chemicals".

On 16 December 2008 the European Parliament and the European Council adopted Regulation (EG) Nr. 1272/2008, so GHS became European law and since 20 January 2009 it is implemented in its CLP Regulation throughout the EU. CLP regulates the classification, labelling and packaging of substances and mixtures. The obligation someone has in accordance with the CLP Regulation primarily depends on his position in the supply chain.

If substances are placed on the market, its classification and labelling have to be notified to the the classification and labelling inventory agency of the European Union ECHA within one month after production/ import. All reports are stored and made publicly available in a database. See ECHA: http://echa.europa.eu.



Each hazard class has one or more danger categories

Chart: Trainingmaterial Reach&CLP 2010 p 40

For the classification of substances new terms and regulations are used to assess the hazards of substances. Compared to material or preparation regulation the number of hazard classes increased. CLP knows 16 categories for physical hazards, in the previous system they were just five. This leads to a more detailed differentiation of physical and chemical properties. Each hazard class has one or more danger categories. With the new labelling the

Chart: http://www.umweltbundesamt.de/chemikalien/ghs.htm

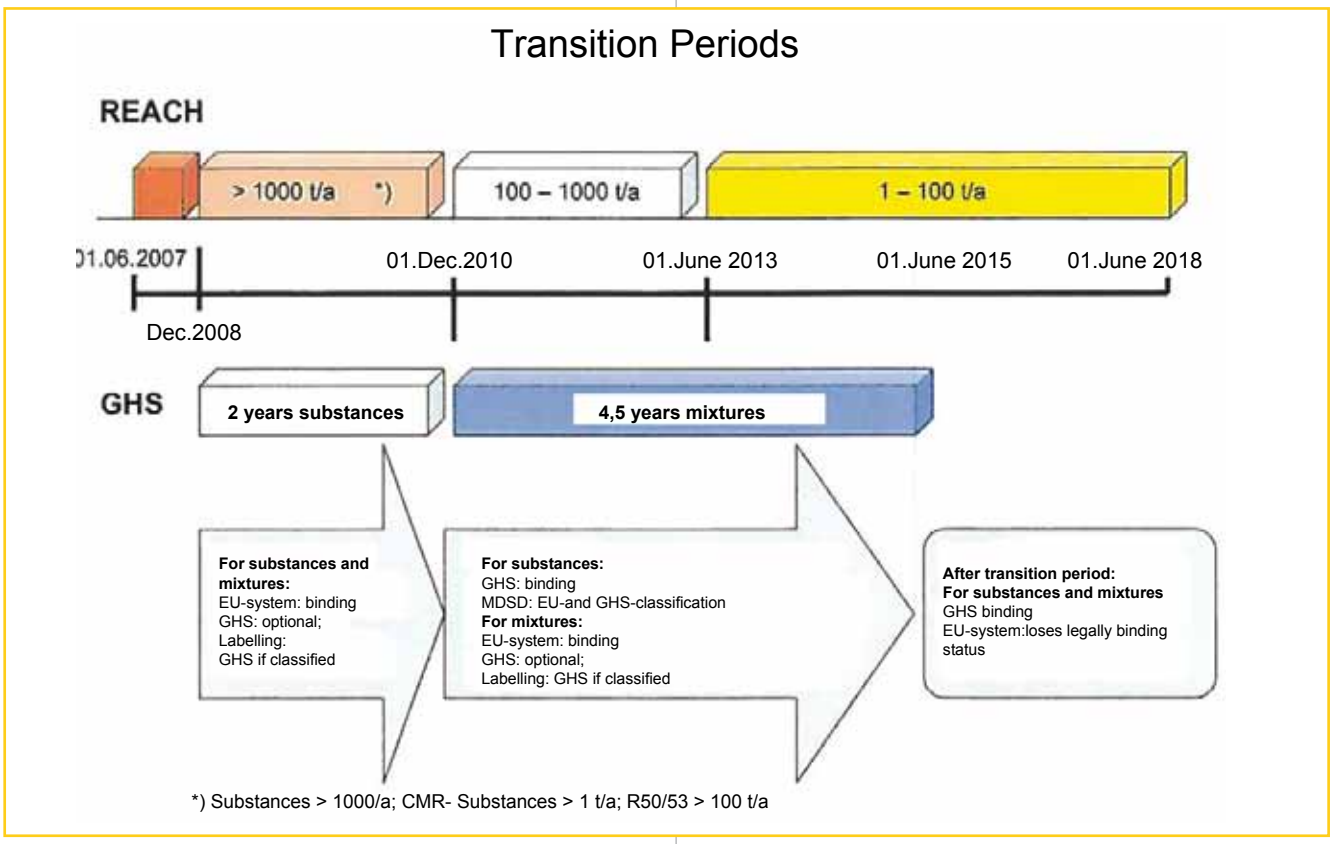


Chart: Trainingmaterial Reach&CLP 2010 p 79

pictograms as well as the hazard statements and the precautionary statements on the label have been changed (see below).

Another aim of GHS is to eliminate the differences existing between the regulations for the transport of dangerous goods (hazardous goods law) and the management of dangerous chemicals (hazardous substances law).Of cause, there are transitional periods for the new regulations that largely match the REACH regulations. Two dates are important for classification, labelling and packaging:

From 1 December 2010:
all substances have to be exclusively classified, labelled and packed in accordance with the CLP Regulation

From 1 June 2015:
also the mixings have to be exclusively classified, labelled and packed in accordance with the CLP Regulation

All safety data sheets and labels need to be revised to the new classification/labelling. In all cases of a change of labelling and classification the label of the concerned substances or mixings has to be updated. Usually this must be made immediately.

All needed information for the classification and labelling according to CLP have to be kept for at least ten years up from the last date the substance or mixing is launched on the market. The information should be kept together with the documentation required by REACH.

The ACAT Group is well prepared for the necessary changes and will make all the updates in time. If customers have any questions, we are always ready to answer them properly.

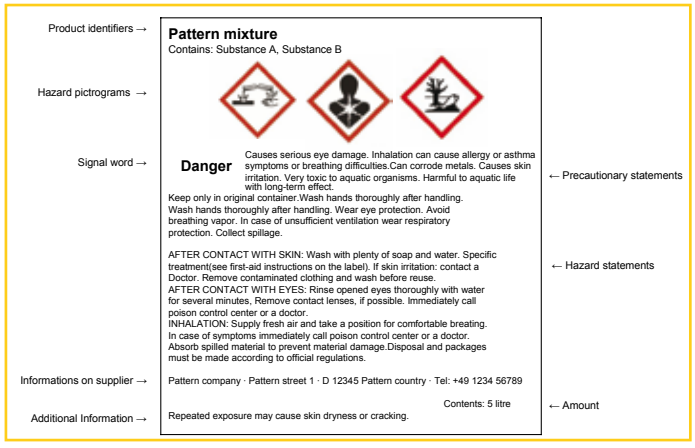


Chart: worddoc „Musteretikett"

Example for a label
according to the new regulations

ANNIVERSARIES

Gabi Kern: 10 Years for Plant Engineering

It was very much virgin territory for Gabi Kern when in March 2002 the first mighty tombs of tender documents landed on the table of her Home-office in Laxenburg. Strict deadlines and threatening consequences are constant companions if formal errors occur with offers that have to meet the public tendering criteria.
Meanwhile the completing of technical tenders, the preparation of accompanying letters and the compilation of sales documentation has become established practice.
Apart from main and alternative offers and account list of projects the visual arts take more and more space in her free time, because the independence of her two sons Christoph and Tobias and the sheep dog Carlos increases.
A significant number of square meters of her home are reserved for bulky easels, paint pots and other painting utensils and when the muse takes her, she gives her creativity free reign. With great enthusiasm some first orders have been produced.

Dear Gabi, thank you very much for your loyalty and for supporting the plant engineering department through all business phases and we wish you continued success with your artistic activities.

Robert Meissl: 10 Years looking on the bright side

In 1970 Robert Meissl started his career in as a papermaker apprentice; in 1987 he passed his examination as a foreman. In 1989 he became sales representative at Sandoz (today Clariant) and quickly he became recognized as the expert of the application technology for optical brighteners and dyes throughout Europe.
Since 2002 Robert Meissl has strengthened the ACAT paper technology team. His experience and knowledge of the markets in Eastern Europe brought a sharp upswing in these countries.
We all appreciate Robert Meissl as a good colleague, his humor and his "level headedness" with which he can handle tricky situations. He always place the customers' interests and needs center stage and they appreciate his expertise and reliability.
His private passion is mountain biking. When he pedals at his homeland mountain the "Koralpe" few would be able to keep up. We would like to wish Robert all the best on his ten year anniversary. We would like to take this opportunity to thank you for your commitment Robert, and we look forward to many more years working together!

Andrea Schilhan-Kainz: 10 Years Pricession

Ten years ago after a short, exciting search for a female co-worker for the order processing of our environmental technology department, the ideal candidate was found in Andrea Schilhan. After only a short training period she had taken command and since then she has cared with a "strict hand" for the order processing of the environmental technology department. No inaccuracy in the order, no error in the calculations escapes her strict eyes. She always makes sure that delivery and account can be made to the customer quickly and on time and that colleagues in the field are actively supported. In her spare time she likes to go for a work-out to the gym or to spend time cycling and enjoys being outdoors, breathing fresh air. Andrea, we greatly appreciate your efforts and we hope your "rule" will last another 10 years. We also take this opportunity to congratulate on the legalization of your cohabitation with Gerhard Kainz after many years of "living in sin".

Rudi Kafka: 10 Years Environmental Technology

More than ten years ago Rudi Kafka decided to pursue other career opportunities at a visit to the Christmas market in the main courtyard of Schönbrunn Palace. After many years of assembly and commissioning work at the TIB Company and a short interlude at a polymer trading company in Germany, he joined the ACAT team. Just a few months later he was able to support the environmental technology department. He was most welcomed because of his longtime experience with KHD and Hiller centrifuges and as he was very well acquainted with the installation and the start-up of filter presses, the technical competence of our team was further improved.
We all know Rudi as very helpful and hard-working colleague and we wish to continue our cooperation for at least ten years to come.

ANNIVERSARIES

Romano Renggli - 15 years head of the department for Environmental Technology in Switzerland and Italy

Romano Renggli - unbelievable how time flies! Since Romano began to set up the Swiss department for Environmental Technology in Basel, an enormous quantity of water flowed down the Rhine becoming cleaner and cleaner. He met the challenges of an increasing market and of permanently changing requirements. Romano has built up our department for environmental technology in Basel step-by-step with a particularly specialized expertise and a steady hand, and so he has led our company to an important player in the fields of sludge dewatering and pre precipitation.

His italian roots allow him to provide his comprehensive expertise also in Italy to set-up a department for environmental technology there. There is hardly another person to be found who has a deeper knowledge in this field and who is much more valued among the experts of the region.

Romano, thank you for your motivated and loyal work, and we want to congratulate on 15 years at ACAT. We look forward to many more years working together.

Roland Auer - 15 years full engagement

For more than 15 years ago I was looking to strengthen my environmental technology team.

Once again a military servant applied for the advertised position. We wanted to meet in café for a job interview. Expecting a young uniformed man I really was surprised to be approached by a young woman who introduced herself as the life companion of Roland. She told me that he had been called away unexpectedly to a training exercise, but as he was very interested in this job he had sent her.

Willingly Christl, married to Roland for many years and mother of two charming daughters, answered all my questions. I was impressed by the ability to improvise and the ambition of this young man, and after a personal interview he was employed.

As a sales person of environmental technology products Roland Auer has often been able to bring this talent into play during the last 15 years. Not only as his superior but also as his dear friend and mentor I (ES) hope that we can work together for another 15 years!

Theo Weinbrenner – 25 years of life for the paper industry

When in spring 1987 a bearded young man entered the office of our CEO Manfred Zabl to apply for the vacant position of a paper technician, nobody could have foreseen that a new important chapter in the history of our company was opened. At that time the world of paper industry was characterised by very conservative elements. Alum, resin size and polyethylenimin were used, and polyacrylamides were considered as devil's work in the minds of the majority of paper makers, with good reason from the perspective at the time. The products were not ready for the market yet and the application technology was still in its infancy. But with his characteristic persistence Theo dealt with this innovative technology, and with expanded know-how and personal dedication he made the polyacrylamide technically useable and he was able to create a stable and reliable application technology for them. The result was the company's own production of special machines in Scheibbs to dissolve and to dose polymers and bentonites. At the same time he built a strong team to establish this new technology in the market. This has made us one of the leading suppliers of chemicals and a strong service partner for the paper industry in Central and Eastern Europe. Paper and its systems engineering in Scheibbs are still part of Theo's life, as for him they always were not just a profession but a vocation.

Theo, we would like to thank you for your work and for your lifeblood, which is always necessary to be successful. You have created the basis for future generations, you can be very proud of your work. We cordially congratulate you on your 25th anniversary at our company.

NEWCOMERS AT ACAT

Lutz Wolff

Lutz Wolf worked for several chemical suppliers to the paper industry and at a manufacturer of measurement devices before he joined our company on 1st February. He has many years experience in dealing with customers both nationally and internationally. He was born on 20th April 1966 in Eastern Germany and he will support customers in his home country. Lutz Wolff likes to spend his spare time with his family and he is an active member of the local sports club, he likes to play volleyball and he is interested in tennis.

Katrin Schock

Our office in Basel is pleased to announce the reinforcement of the team with Katrin Schock. Katrin's responsibilities include quarterly and annual financial statements, asset accounting, VAT accounting, posting to the general ledger accounts, intercompany transactions and dunning. Now Katrin has become familiar with her new assignments, she can once again devote herself to her favorite leisure activities of travelling, literature, arts and politics.

Anabela Tujkic

Since February Anabela has been responsible for the switchboard, reception and for the internal and external postal system at ACAT's office in Vienna. In addition to the preparation of the electronic mail and its incorporation into the internal workflow there are countless tasks she has to deal with. She is 19 years old, enthusiastic and accomplishes her duties with great efficiency. When she does not sit behind our reception desk she likes to spend time with her family and is particularly keen on long walks in the countryside. We wish Mrs. Tujkic every success with her new career challenges and we are looking forward to many years working together.

Doris Rücker

After finishing school Doris Rücker started studying Italian at the university. She decided to leave her studies and took up a job at a tax advise office where she acquired comprehensive experience in accounting. Further experience and knowledge of accountancy and administration was gained at the office of a shopping center. At ACAT Vienna she will support the accounting team of Harald Reis and with her 24 years she will bring a breath of fresh air and renewed energy into the team.
Doris likes Italian cooking and she indulges in the culinary delights of the South. She also likes travelling and spending time with her family and her two cats. We would like to welcome Mrs. Rücker on board. We wish her success and much satisfaction in her new job!

Luka is born!

Hurray, Hurray, it has happened: ***Luka Bijelic*** is finally here! When he was born on Valentine's Day (14.2.) he was 53cm tall and weighed 3570g. His parents Goran and Ana and his little sister Sofja are really happy!

BE WELCOME, BABY!

++ BREAKING NEWS ++

In the last minutes before editorial deadline of this issue, we received the message that on 30th of March, 17:53 at the clinic St.Anna, Luzern (CH) Elisa Mila Björn was born. As a matter of courtesy to a young Lady, we will not announce any weights or other indiscretions and wish her all the best for a wonderful live! Congratulations to the proud parents and grandparents from the entire team of the ACAT Group!

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