# Inside acat Newspaper for customers, friends and employees

MAP-STAR ACAT produces struvite

### INTELLIGENT FLOCSTARS FlocStar®Giga 1970L

ECOSORB<sup>®</sup> In Cyprus it does not stink anymore

FAT May 14–18, 2018 | MESSE MÜNCHEN

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2,2,2,2,2

1.1.1.1



Applied Chemicals International Group Technical Service is our Success

### CONTENTS



*Our new, patented MAP system solves the struvite problem in sewage sludge treatment.* 



With FlocStar® Giga 1970 L we have developed flexible flocculants according to customer needs adjusting automatically to individual conditions..



Whether in the sewer or in the waste disposal bad smells have no chance in Cyprus. Thanks to Ecosorb<sup>®</sup>, the air on the island is pure.

### NEWS, EVENTS

**2** Ressources, Innovations, Solutions: IFAT, the World's Leading Trade Fair for environmental technologies

### TECHNICS

- **4** MAP-Star: ACAT produces struvite
- 8 DispStar<sup>®</sup> the new stars in the ACAT sky
- **10** Product development: FlocStar<sup>®</sup> Giga 1970 L Intelligent flocculants adjusting to individual conditions
- 12 SKYVELL Two nasty malodours where Skyvell "got it" and cleared the air simply and naturally!
- **14** Fighting foul odours at Tao's Restaurant-, Lounge and Bar in Zurich
- **16** In Cyprus it does not stink anymore: Ecosorb<sup>®</sup> 505 Gel helps!
- **18** Lithopone by VB TECHNO is the solution for the partial replacement of  $TiO_2$
- **20** Black on white: The history of papermaking (part 3)

### **COMPANY NEWS**

- 24 Christine Nestler-Kenzian: A passionate photographer
- **26** Healthy through the year: The importance of vitamin D<sub>3</sub> for human health
- **28** Cooking according to the five elements in spring
- **29** Anniversaries, newcomers and special occasions
- **30** Brain work, mental exercise and competition
- 32 Our products

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### EDITORIAL



Manfred Zabl

#### Dear readers,

The top event of the environmental technology, the IFAT 2018 in Munich is just around the corner, and the entire industry is in a hurry to prepare for this big event. Meanwhile, this fair is known far beyond the borders of Europe and an enormous number of visitors from all over the world are filling the expansive areas and stands to gather and exchange information about current trends and developments. Today, there are constant developments in almost all areas of life and economy, but hardly any development is more dynamic than in this industrial sector.

Today usually you get your information from the internet. The advantage is that you get the information available very quickly. It is all the more surprising that masses of people take the time and effort of a trade fair visit, that they pay exorbitantly inflated hotel room prices and that they push with many other colleagues through the crowded corridors - just to get information !? The internet has become really good, but still it is not a place of absolute wisdom but rather a hodgepodge of opinions of people you do not know personally. You just do not know what to believe, so you visit trade fairs to get information and personal impressions, to see solutions live, to attack them and to select opinions in many conversations! Still or rather especially nowadays it takes a lot of impressions and information to make the best and moreover forward looking decisions for the company you are responsible for. Responsible purchasing is an investment in sustainability and thus in the future. This applies to both investment and consumer goods, and it takes a lot of information to make or prepare a sound buying decision. The opinions from the Internet or from visitors in-house are not enough for that.

This is the reason for the many business trips made despite sophisticated communication systems such as videoconferences, conference calls and various other office communications facilities. You can get no vibrations, impressions or trend-setting signals of the interlocutor through the glass or via the phone. Meanwhile, our IT capabilities are great, but they do not even cover 10% of the needs of a sound buying decision, and they certainly do not allow to establish a relationship being an important step towards building up the necessary confidence. If this would be the case there would be less business travelers and less well used airports and planes, and the best hotels would have too much vacancies! But despite the ongoing development of the Internet the number of business trips is increasing.

Therefore, - "back to the roots"! Let us visit the fair to truly experience and feel the many innovations we also will present at our booth this year, to meet the top specialists of the industry, old acquaintances and good friends and to discuss and get to know opinions and views of people from our business. It is not easy to bear and justify the responsibility for decisions made. Nobody always hits the mark with all his decisions, especially if tendering rules and regulations have to be taken into account. But the chances to better focus your goal are becoming greater. We are looking forward to many, many visitors and interesting and enriching conversations!

With this in mind, I wish all visitors to IFAT 2018 a good and interesting time and all readers a wonderful and hopefully long summer with lots of sunshine!

> Manfred Zabl CEO Applied Chemicals International Group

### NEWS, EVENTS





### **RESOURCES, INNOVATIONS, SOLUTIONS:** IFAT, The World's Leading Trade Fair For Environmental Technologies

The latest facts and figures from IFAT speak for themselves: The trade fair impresses with its high degree of internationality and impressive exhibitor and visitor numbers.

As a worldwide innovation platform and industry meeting place for companies in the water, sewage, waste and raw materials industry, IFAT offers ideal conditions for their personal trade fair success.

### KEY FACTS OF IFAT 2016:

- 3,087 exhibitors from 59 countries (45% international share)
- 136,885 visitors from 169 countries (47% international share)

- An exhibition space of more than 230,000 square meters
- 8 live demonstrations
- top-class supporting program

### IT IS TIME FOR CHANGE:

ACAT PRESENTS ITSELF IN A NEW LOOK!

After three IFAT trade shows in the same booth design, we have decided to present ourselves in a new look. But that's not the only change! The exhibit on site is no longer the same: The ACAT screw press is replaced by a model of our brand new MAP system for the recovery of phosphorus.

### CONVINCE YOURSELF AND VISIT US AT OUR BOOTH 544 IN HALL A3!

Also the date of our traditional kicker tournament has changed. This year it will take place on Wednesday, May 16 from 6 pm. Referring to this year's football World Cup in Russia the players are cheered with dynamic music. Again you can expect valuable prizes from various football teams. For the culinary well-being of the participants we serve delicious finger food. We look forward to an active participation.

### ATTENTION:

### CHANGE OF THE LAYOUT OF EXHIBITION SECTIONS

Water and sewage: Halls A1–A3, B1–B3, C1–C4. Accessible via the West, Northwest and North Entrances. Halls A1 to A3 will continue to house the plant constructions for water and wastewater treatment. In addition, this area is enlarged in terms of content to include the core subject hydraulic engineering and construction of wells and is continued in hall B2. With this enlargement, the subject of water supply and drinking water also becomes more conspicuous at IFAT 2018.

Mechanical engineering and plant engineering in water management with the segments pumps in hall B1 and process measuring and control technology in hall C1 as



Site-map: Everything is new at IFAT

well as the fittings area in hall C2 form the perfect linkup.

This subject area is rounded off by water supply and sewerage systems in halls B2 to B3 as well as C3 to C4. The subjects of ducts, pipes and sewers are now to be found in halls B2 and B3, the subjects of their construction and maintenance in halls C3 and C4.

Text: Susanne Durst





# **MAP-STAR:** ACAT Produces Struvite

The problem with struvite in sewage sludge treatment could be sustainably solved with the new, patented MAP system developed by ACAT and AWV WNS together with the Vienna University of Technology.



**AUTHORS:** 

### ERICH SAILER AND DIETMAR STRECKER

I have already reported about struvite in previous editions of this magazine. Struvite causes problems in the form of kidney or bladder stones not only to humans and animals, but also to the operators of sewage treatment plants in sludge treatment. I have reported on chemical methods for removing struvite deposits, and on the prevention of struvite deposition with chemical dispersants. Unfortunately, these methods can only be used to perform damage control - it is just as if you take strong painkillers against the pain caused by the kidney stones. The pain is no longer noticeable, but the cause is not eliminated. These methods were very unsatisfactory for us. Therefore, we searched intensively for ways to get down to the root of the trouble. And we have found a way!

### THE INITIAL IMPULSE

The Abwasserverband Wiener Neustadt-Süd (AWV WNS), one of our most important partners for municipal sludge treatment, initiated the intensive search for a method to prevent the formation of struvite. After only a few weeks of operation of the new dewatering units, massive problems occurred due to deposits at the sludge outlet: often centrifuges failed and there were more and more breakdowns. Detailed studies

### COVERSTORY





showed that there were massive bright crystals in the discharge. The analysis of the material revealed that these crystals were struvite crystals. Together with the AWV WNS we started to search for the cause of the formation of struvite – and it was found quickly: there were extremely high concentrations of dissolved phosphate in the centrate and in the digested sludge.

### BRIEF EXPLANATION OF THE PROBLEM

In chemical as well as in biological phosphate precipitation re-dissolution and recrystallization of mineral compounds occurs. The hardly soluble salts cause significant damage to the highly stressed parts of the plant such as sludge pumps or pipes. The most common activated sludge purification process today is the anaerobic sludge digestion in digester towers. During biological P precipitation, the phosphate absorbed by the microorganisms is re-dissolved. Hardly soluble salts are formed due to the high total hardness and to the ammonium concentrations in the digested sludge, like:

### A) STRUVITE- (MAGNESIUM-AMONIUM-PHOSPHATE) IN SHORT: MAP [MGNH<sub>4</sub>PO4\*6H<sub>2</sub>O])

During the decomposition of organic material, ammonia NH<sub>3</sub> and carbon dioxide CO<sub>2</sub> are formed. Both gases are highly soluble in water and they react to ammonium bicarbonate [NH<sub>4</sub>HCO<sub>3</sub>]. NH<sub>4</sub>HCO<sub>3</sub> has a pH buffering effect below 7. Under these conditions almost all alkaline earth ions such as Ca<sub>2</sub><sup>+</sup> and Mg<sub>2</sub>+ are dissolved. During anaerobic digestion high concentrations of P-containing anions such as HPO<sub>4</sub><sup>2+</sup> and PO<sub>4</sub><sup>3-</sup> are formed and these are the best conditions for the formation of struvite.

### B) BRUSCHITE [CAHPO<sub>4</sub>\*H<sub>2</sub>O] IS ALREADY BE FORMED AT PH VALUES OF 4.2 AND HIGHER

Therefore, the formation of brushite in the digested sludge does not depend on the pH value. Essential is an excess of phosphate or hydrogen phosphate. Both are produced in the digested sludge during biological and chemical precipitation. The formation of brushite is favoured by a high water hardness achievable by adding, for example, lime to the digestion tower.

As long as CO<sub>2</sub> and ammonia are dissolved and the pH value is stable, struvite does not precipitate. In straight piping sludge and centrate flow in a laminar flow. The flow becomes turbulent when the pipe diameter changes, a bend needs to be overcome or in the dewatering aggregates. The result is the escape of gases causing a



Thanks to MAP no more trouble with struvite crystals

local change of the pH value and struvite crystals can be formed.

First in the laboratory, later on a semi-industrial production scale, we searched for a simple, cost-effective method to form the crystals under controlled conditions and to remove them subsequently. We were supported by Mr. Ass.Prof.Dipl.-Ing.Dr.techn. Karl Sverdal from the Vienna University of Technology. The tests were successful and promising, so that the projectengineering of a large-scale plant was carried out. Originally the plant was developed to get the struvite problem under control. But it turned out that it opens up further possibilities for cost savings and that an investment in this system can pay off in a short time.

Therefore, we decided to protect the process by patent.

#### INSTALLATION OF THE MAP-SYSTEM AT THE AWV WNS

After completing the trials a meeting was held with all involved, where the findings of the Vienna University of Technology, the AWV WNS and ACAT were discussed. Based on analyzes and profitability calculations a concept was created for a large-scale plant. After the owner representation of the AWV WNS has given its approval we awarded the contract for the construction of the innovative MAP system. However, the implementation was not easy, because at the same time the sludge had to be drained. Originally during the conversion work a mobile plant should have been installed, but with the agreement of the client, we decided on a temporary with a new decanter.

At the beginning, the capacity of the MAP system was about 50 percent. We were able to make changes at some positions, but some units had been fixed already. It was planned to place the containers in the basement of the sludge dewatering building, but for static reasons the existing building could not be used. Therefore, next to the sludge dewatering building a lightweight construction had to be built. The screening device of the MAP plant was placed on the upper floor of the sludge dewatering building. Next to the new MAP building, a container yard with discharge device was erected for the discharge. The connections of the supply- and discharge sludge pipes were arranged clearly and simply, but the connection of the filtrate line was problematic. There was a filtrate pumping station for the sludge dewatering that had to be adapted for the additional integration of the MAP system. The metal salts dosing and treatment units were installed in the chemical room together with the polymer preparation plant for sludge dewatering. For the EMRS switchgears of the sludge dewatering and the MAP system a new room was built.

## ASK FOR DETAILS

### BR h.c. DI Dr. Wolfgang SCHERZ, MBA CEO in Conversation With Erich Sailer

### Sailer: : What was your main motivation for upgrading the plant with a MAP precipitation?

**Scherz:** In 2011 and 2012 the conversion of the sewage treatment plant to this state of the art plant was completed. With the enlargement of the biology bio-P elimination was possible. The sludge dewatering with the chamber filter press using lime and iron as filtration aids was replaced by ACAT centrifuges. The  $PO_4P$  resolution caused massive operational problems due to MAP precipitation.

We asked the specialists for the phosphorus recovery Ass.Prof.Dipl.-Ing. Dr.techn. Karl Sverdal and Dr. Egli for support, because we knew that the precipitation of MAP could be a possible procedure.

### Sailer: How was this project implemented in practice?

Scherz: First, laboratory tests were carried out in co-operation with TU Vienna and DI Eitzenberger. Then, together with Ing. Strecker, the test conditions were simulated in a semi-industrial scale in a 1000 liter tank for the tax base calculation and the estimation of the investment and operating costs.

Sailer: What were the main reasons for deciding to install MAP precipitation?



BR h.c. DI Dr. Wolfgang SCHERZ, MBA CEO

**Scherz:** For legal reasons we could not expect to sell Struvit as a material, because of its waste properties. Therefore, the main reasons were a stable operation and a better performance of the decanters.

### Sailer: How did the better performance became apparent?

**Scherz:** By achieving significantly higher dry substance values of the dewatered sludge, the disposal costs are substantially reduced and the throughput could be increased. The drainage system can be operated almost trouble-free because there is no precipitation of MAP in the decanters or in the centrate lines.

### Sailer: How do you comment on the current conditions regarding phosphorus recovery?

Scherz: Basically, there is a position paper of all wastewater specialists from 2014 to use sewage sludge as a resource. This is regulated by the federal government, the state ordinances such as the Sewage Sludge Ordinance in Lower Austria. The Federal Waste Management Plan 2017 stipulates that all wastewater treatment plants with more than 100,000 p.e have to recover phosphorus from the waste water, and the possibilities for wastewater treatment plants with 20,000 / 50,000 p.e are being examined in a study now. However, a wide variety of recycling options should be kept open, as required by the soil protection laws of the federal states, because currently the methods for recovering phosphorus are not yet technically and economically mature. It is necessary to establish a legal framework to produce struvite from waste. But it is still unclear whether the recovered phosphorus is accepted for the use as a fertilizer and whether it is also economical.

At this point we would like to thank the AWV WNS for the pleasant cooperation!

### INSTALLED – RUNNING LIKE A CLOCKWORK

Immediately after the commissioning of the new plant the centrifuges ran continuously and trouble-free, and even after several weeks in full operation, no deposits were found. The savings detected by our trials were fully confirmed also.

- 1. Saving of flocculent for sludge dewatering
- 2. Increase in sludge dry content, consequently: significant reduction in disposal costs
- 3. Increase in the throughput of sludge in sludge dewatering
- 4. Massive reduction of the amount of precipitant
- 5. No malfunctions caused by deposits
- 6. Reduction of cleaning costs of sludge dewatering plant and pipelines

# **DISPSTAR®** – The New Stars In The ACAT Sky

Our new DispStars<sup>®</sup> are highly efficient organic demulsifiers and they offer unique properties in all areas of emulsion splitting, from the petrochemical industry to wastewater treatment.



*Emulsion before treated with DispStar® (left) and after treatment (right)* 

### AUTHOR:

ERICH SAILER

Who does not know the famous milk lemon experiment? A few drops of lemon juice are enough to make a nice tasty fresh milk a flaky unappetizing liquid. An unpleasant, unwanted effect "happening" in many areas, needed to be prevented. I would like to deal with this topic today.

Milk is a classic example of an emulsion. An emulsion is a highly dispersed mixture of two normally immiscible liquids (such as oil and water). One liquid (phase) forming small droplets is dispersed in the other one. The phase forming droplets is called the internal or dispersed phase, the phase in which the droplets "swim" is called the outer phase or continuous phase. Emulsions belong to the disperse systems and they differ from completely miscible liquids, like for example ethanol and water. Usually, emulsions are cloudy, milky liquids.

In the case of milk, we are happy about the stable emulsion. But in many chemical processes, the emulsified liquids have to be separated. For this purpose, demulsifiers, also called emulsion breakers, are used. Demulsifiers are typically based on acids (example: lemon / milk) or on organic compounds.

ACAT has developed a new product line of highly efficient organic demulsifiers. Our new DispStar<sup>®</sup> products are used in all areas of emulsion splitting, from the petrochemical industry to wastewater treatment.

If you are looking for a solution to such problems, please contact our field service!

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### water[ 🌢 ] tech

# **PRODUCT DEVELOPMENT:** Intelligent Flocculants Adjusting To Individual Conditions

### AUTHOR:

### VINCENZO CARCO

ACAT always strives to identify customer needs and to evaluate opportunities to align its own product development. Our latest development: FlocStar® Giga 1970 L!

FlocStar<sup>®</sup> Giga 1970 L is the result of specific customer needs. We combined a product suitable for a variety of applications with very easy handling. For many years, we have been dealing with the various problems and we have been carrying out several trials to find out the desired characteristics of the new product.

### MUNICIPAL & INDUSTRIAL WASTE WATER TREATMENT

Our product was developed for the use in Municipal and Industrial waste water treatment processes to successfully cope with the increasing hydraulic loads in the primary and secondary clarifier. In addition, it reduces the undissolved substances after the preliminary sedimentation and in the final clarification. It can be used when needed or prophylactically. The sludge properties are improved sustainably, the finest flakes are bounded very quickly and already after a few hours a better visibility depth is measurable.

The GUS-values (total undissol-



ved substances) in the effluent are improved very quickly. The sludge index returns very quickly to its normal state, thus preventing sludge flotation in the case of hydraulic overload. Our product also contains aluminum for the proactively fighting against filamentous bacteria.

### CHARACTERISTICS OF FLOCSTAR<sup>®</sup> GIGA 1970 L

Due to the amphoteric nature our product can be used in media with high inorganic and high organic content. It adapts itself to the existing reaction partners and thus guarantees optimal results, because



stable sludge flakes are formed extremely fast. The sludge properties are improved quickly and sustainably.

On <u>picture 1</u> you can see the sewage flowing towards the secondary clarifier - the picture was taken three minutes after sampling. On the left side in the picture you can see the waste water treated with FlocStar<sup>®</sup> Giga 1970 L.

The improvement of settling behavior is clearly seen. The supernatant is already very clear, the organic content is > 80%.

### ROAD & TUNNEL CONSTRUCTION

Further applications of FlocStar<sup>®</sup> Giga 1970 L are in road and tunnel construction where it is used for sewage and wash water treatment.

### ROAD CLEANING

Today flocculants are also used with modern suction vehicles for street cleaning. This application has not been existance for a long time and there is still room for improvement. Because of the compact design of the suction vehicle, usually there is only one single metering device. Therefore, either the precipitant or the flocculent can be used leading to unsatisfactory results: the supernatant is cloudy, or the flakes are greasy. In these cases our product works optimally as it is highly soluble in water and it forms a stable and well sedimentable flake within a few seconds and the recirculated water can be optimally used. The **Fig. 1:** Wastewater from a clarifier, in

the left vessel after treated with FlocStar<sup>®</sup> Giga 1970 L.

dosage continues to be via the existing system.

The waste water on picture 2 was taken from a suction vehicle and it contains sludge from street collectors. The picture was taken after three minutes. Left in the picture, the waste water was treated with FlocStar<sup>®</sup> Giga 1970 L. The supernatant is very clear and the sludge flake is very stable. The content of inorganic substances in this waste water is> 80%.

You are only one step away from trouble-free plant operation! We are looking forward to your contact. Our team will be happy to advise you.

**Fig. 2:** Sludgy wastewater from a suction vehicle, left picture 3 minutes after treated with FlocStar<sup>®</sup> Giga 1970 L.





Fotos: Jens Weber/pixelio.de (1), Paul-Georg Meister/pixelio.d



# **SKYVELL** – Two Nasty Malodours Where Skyvell "Got It" And Cleared The Air Simply And Naturally!

### AUTHOR:

### ALDO RANDISI

### FIRE AND WATER DAMAGE ODOUR IN RESIDENTIAL HOME

#### PROBLEM

Members of a cleaning and restoration team in Switzerland were called to restore a home damaged by a fire. Charring, smoke and water damage had ravaged the house and left behind an overpoweringly unpleasant odour. The team needed a solution to quickly and effectively eliminate the lingering odours, yet allow them to continue working inside the damaged house.

### SOLUTION

The team turned to Skyvell to safely remove the foul smells from the air and surfaces in and around such a damaged area. In these types of severe situations, Skyvell was the ideal solution, as the product uses airflow to disseminate the formula. The team placed the Skyvell Gel throughout the house. Within one hour the smoke odour had been significantly reduced. During this time, the team was able to focus on other areas of the house needing remediation, rather than having to vacate the premises entirely.

#### RESULTS

The results speak for themselves. The team's lead reported: "When dealing with difficult smells, we want to use a product that can quickly eliminate the odour issue yet still allow us to focus on the restoration efforts in an efficient manner. The typical ozone unit doesn't



afford us that ability. The Skyvell products worked effectively at eliminating the nasty smells and permitted us the ability to continue our work inside the damaged structure.

#### SKYVELL -

CARPET ODOUR ELIMINATED WITH A SINGLE PRODUCT

### PROBLEM

A disaster remediation team in Germany had a carpet-cleaning emergency on their hands. After a local cleaning company failed to properly clean a homeowner's carpet – as their solution did not dry quickly, then resulted in a sour smell permeating throughout the entire home. The team had to properly dry the carpet and eliminate the foul smell.

### SOLUTION

The team turned to Skyvell Liquid to solve the problem through a carpet extraction process. Whereas this team would have tried several different products to solve the issue, with Skyvell Liquid solution, they immediately solved the problem with this one product.

#### RESULTS

The Skyvell Liquid solution eliminated the carpet odour immediately and permanently. The owner of this firm said: "I have never had a carpet odour-eliminating product that worked this well. We have tried for ten years to find a product where we could say, "That got it!"

### enviro [ 🛹 ] tech

# **FIGHTING FOUL ODOURS** at Tao's Restaurant, Lounge And Bar In Zurich

cos: Tao's Restaurant (2)



AUTHOR:

ALDO RANDISI



The restaurant industry is tough, and in today's Internet era, it has become even more challenging to sustain a thriving business when one negative review in social media can spell disaster.

In addition to excellent food, service, and ambience, odour management is an assured way customers will continually be satisfied with their dining experience. Their reviews can then focus on their most pleasant memories.

### THE ODOUR CHALLENGES FACING TAO'S RESTAURANT, LOUNGE AND BAR

Located in the city centre of Zurich, Tao's provides highquality food in a unique setting, and is not taking any risks with its odour management strategy. The restaurant shares its dumpster with adjacent businesses close by, and foul odours ultimately became an issue.

### SKYVELL TO THE RESCUE

After trying various perfume-based cover solutions,



such as Lysol sprays and other solutions that were merely masking the odours, the restaurant owners turned to Skyvell for help. By placing Skyvell Gel in the dumpster, they were able to completely remove all foul odours coming from the receptacle and the trash within.

As any restaurant can attest to, odours are not always confined to the dumpster areas. Others, such as those from the open kitchen, smoking lounge and restrooms, commonly make their way into other undesirable locales such as reception, the lounge area or the dining room. The Tao's owners also employ the Skyvell Gel products to completely rid the restrooms of their unfriendly smells and with the VPS-mini and the Skyvell, liquid solutions are then used to eliminate food and smoke smells throughout the facility.

Another area where unwanted odour can reside is the buffet hosted at Tao's. Raw vegetables, like cabbage and other scent offenders, can often overpower the entire buffet. The owners simply place Skyvell Gel products underneath the buffet table to control any and all food malodours.

Thanks to Skyvell products, restaurants, like Tao's no longer have to worry about foul odours ruining the dining and lounge experience for customers – especially those who can fire off a tweet at any moment.





# IN CYPRUS IT DOES NOT STINK ANYMORE: Ecosorb<sup>®</sup> 505 Gel Helps!

The Cypriots do not moan, they act. And ACAT helps: in the sewer or in the waste disposal. From now on bad smells do not have a chance on the island. Thanks to Ecosorb<sup>®</sup>, again people breathe only the spicy salty air.



AUTHOR:

### **KENAN ENGERINI**

Cyprus is known for its wonderful food, hospitality, clean beaches and crystal clear sea. From April, many tourists and those seeking relaxation come to the third largest island of the Mediterranean. Traditionally, Cyprus attracts with Mediterranean charm paired with historic flair. Many tourists do not realize that Cyprus is developing rapidly - or they are not consciously aware of it. But a lot happens! Roads and buildings are being rebuilt or restored, the catering industry is developing new creations for tourism and they are doing a lot in terms of waste prevention and refuse disposal. But also asphalt mixing plants are working at full speed, and there are more and more pig farms and slaughterhouses to feed the steadily growing population.

That's all well and good but unfortunately some things produce bad smells. Who likes to lie on the beach when the bad smell of a sewer system is perceptible? In Cyprus, the issue of odor nuisance is taken very seriously and something is done about it: First tests with Ecosorb<sup>®</sup> have already been started! Now it is used in Promethas, one of the two largest asphalt mixing plants, as well as in Anaergia, the newly built, largest waste separation plant in Europe. Not only the tourists but also the neighbors are happy with this innovative and effective odour control. In Cyprus, however, they even



A funnel specially designed for the sewerage holes is filled with Ecosorb<sup>®</sup> 505 gel.

go one step further: they want to treat the sewer systems and their "fragrances" with Ecosorb<sup>®</sup>. This will be the next major project of ACAT in cooperation with the local distributor Animalia Genetics LTD!

Because we cannot remove the source - the sewer system itself - it is treated in the usual professional way. For this purpose, a kind of funnel for the sewerage holes was specially designed and built, inserted into the sewage system and filled with Ecosorb<sup>®</sup> 505 gel. The operating principle is simple: The bad smell rises out of the various holes, passes through the  $Ecosorb^{\circ}$  gel and is bound and neutralized by it – and the problem is solved.

One funnel has a capacity of about 7 kilos of gel and this is effective for one month. It is not clear how many sewer manholes are in Cyprus, but it is clear that we can get the problem under control and that the solution is simple, cost-efficient and above all NATURAL. This pleases not only residents and tourists, it is also good for the environment!





### **chem** [] tech

**AUTHOR:** 

# **REAL LITHOPONE BY VB TECHNO** Is The Reinvented Solution For Partial TiO<sub>2</sub> Replacement

**FRANCESCO CAMBRIA** 

Lithopone by VB Techno is a white pigment co-pre- cipitated from solutions of zinc and barium salts in accordance with the following reaction equation: $ZnSO_4 + BaS \rightarrow BaSO_4 * ZnS$	for primer and for decorative and architectural paints. Lithopone Red Seal present maximum purity, good opa- city and reasonable light fastness. Lithopone Red Seal $TiO_2$ reformulation approach in liquid coating reduce costs, increase film resistance and show undirected fungicidal and algicidal actions.
Lithopone by VB Techno is an individual and pure che-	REFORMULATE AS FOLLOW:
mical entity very different from any mixed products	Remove 5% up to 40% of TiO
Lithonone by VB Techno is not only REACH and Indirect	• Replace 1 Kg TiO <sub>2</sub> with 1 Kg of Lithonone Red Seal
Food compliant, but also fulfils all the state of the art	below 20% TiO <sub>2</sub> substitution rate.
European RA Regulations for Toys, Packaging, Resin,	• Replace 1 Kg TiO <sub>2</sub> with 1.3 Kg of Lithopone Red Seal
etc.	above 20% TiO <sub>2</sub> substitution rate.
Thanks to its rheological and optical properties, Litho-	<ul> <li>Reduce coarse extender (if any) to achieve the origi-</li> </ul>
pone by VB Techno offers both technical and economic	nal pigment volume concentration.
advantages in $TiO_2$ . Partial Replacement in a number of different applications.	<ul> <li>Reduce a little binder.</li> </ul>
	VERY IMPORTANT:
LITHOPONE RED SEAL IN LIQUID COATINGS	During lab tests and production first of all add Lithopo-

Lithopone Red Seal by VB Techno is suitable in TiO<sub>2</sub> par-

tial replacement for industrial and anticorrosive paint,

ne to liquid batch disperse or mill and only after add TiO<sub>2</sub> and disperse or mill.

Component	Base Paint	10% TiO2	20% TiO2	40% TiO2
		Ref 1:1	Ref 1:1	Ref 1:1.3
Water	128	128	131	136
Thickener (Celluoseether)	188	188	188	188
Dispersing Agent, Acrylic	3	3	3	3
Lithopone	0	10	20	40
TiO <sub>2</sub>	100	90	80	70
CaCO <sub>3</sub>	450	450	450	440
Binder	108	108	105	100
Additives (Biocide, pH Corr., Antifoam, etc.)	23	23	23	23
	1000	1000	1000	1000

*Example TiO*<sub>2</sub> *reformulation strategy in liquid paint:* 



LITHOPONE\_RED\_SEAL\_AN17/280

LITHOPONE\_RED\_SEAL\_AN17/280

UP IN TM3030 S219 2017/05/07 15:44 N x5.0k LITHOPONE\_RED\_SEAL\_AN17/281

### LITHOPONE PLATINUM SEAL IN MASTERBATCH

Lithopone Platinum Seal reduce cost, increase productivity, improve quality and is suitable for PP, PE, PS masterbatch for injection, single layer film, multilayer films masterbatch and for white, colored and filled masterbatch.

Lithopone Platinum Seal present maximum purity, good opacity and reasonable light fastness.

### REFORMULATE AS FOLLOW:

• 1 Kg TiO<sub>2</sub>: 1 Kg Lithopone Platinum Seal below 10% TiO<sub>2</sub> substitution rate

• 1 Kg TiO<sub>2</sub>: 1,3 Kg Lithopone Platinum Seal above 10% TiO<sub>2</sub> substitution rate

• Reduce polymer content accordingly

**VERY IMPORTANT:** premix Lithopone Platinum Seal with  $TiO_2$  in high speed or pin mixer before adding polymer and additives

	Base	Ref.5%	Ref.10%	Ref.15%	Ref. 18 %	Ref.25 %
	Masterbatch	TiO2	TiO2	TiO2	TiO2	TiO2
Polymer	39	39	37	36	36	34
TiO <sub>2</sub>	60	57	54	52	50	45
Lithopone Platinum Seal		3	8	11	13	20
Additives	1	1	1	1	1	1
Total composition %	100	100	100	100	100	100
Ashes %	60	60	62	63	63	65

### Example TiO<sub>2</sub> reformulation strategy in white Masterbatch

LITHOPONE RED SEAL IN NATURAL AND SYNTHETIC ELASTOMERS

Lithopone Red Seal is the perfect  $TiO_2$  partial replacement solution for all pigmented natural and synthetic elastomers and rubbers since it is completely non-abrasive and extremely acid resistant.

Lithopone Red Seal in any kind of rubber do not only reduce cost by  $TiO_2$  partial replacement but also increase industrial production output and increase finished product durability, thermal resistance, and mechanical resistance.

### LITHOPONE RED SEAL IN PUTTIES, ADHESIVE, JOINTS AND SEALANTS

Lithopone Red Seal is the perfect  $TiO_2$  partial replacement solution in putties due to its very soft nature and virtually not shrinking properties.

Lithopone Red Seal is suitable for  $TiO_2$  partial replacement when major acid resistance is necessary such as in adhesive joints and sealants.

The team of ACAT Chemtech division is available for further technical support. Do not hesitate to contact us if you need detailed information or samples.



## **BLACK ON WHITE:** The History of Papermaking (Part 3)

"Paper is the basis of all creativity". Even in the age of digital media, paper is an integral part of our world. In the third and last part of our short history of this probably most important writing media and material of mankind we want to highlight the milestones in the history of papermaking and we would like to put the spotlight on those devoting themselves to the art of papermaking today.

### AUTHOR:

### **GILDIS GRABNER**

In In the early days paper making was very hard work. Often the whole family, including children, had to help to produce paper. In the 19th century the demand increased exceeding supply by far. The reason for this was the lack of raw material. There were not enough rags. But necessity is the mother of invention! A new raw material for paper production was discovered: wood! The new raw material and a number of other pioneering inventions significantly changed the making of paper. The milestones of human ingenuity from handmade paper to today's mass-quality goods will be briefly outlined in this article.

FROM WOOD TO PAPER

Until the middle of the 19th century, Europe's papermakers used rags, hemp and flax waste as raw materials. With the invention of the first paper machines, the demand for paper increased, but rags were a limited resource. The breakthrough in the search for alternatives was achieved in 1843/44, when the Saxon weaver Friedrich Gottlob Keller invented the wood pulp process for use in papermaking. The invention was expandable! The mechanical pulping of wood to wood pulp was invented, and thus a process becoming very important worldwide.

CHEMISTS ARE THE PIONEERS OF PAPER PRODUCTION

Today we take it for granted that wood pulping can be



Wood grinder (left) and globe digester in the paper mill "Alte Dombach" in Bergisch-Gladbach





done both mechanically and chemically. But first quite a number of clever chemists tried to figure out how to do that.

 In 1863, the American Benjamin Chew Tilgham filed a patent for pulp production with calcium bisulphite.

• In 1872, the Swedish engineer Carl Daniel Ekman succeeded in producing sulphite pulp from wood by cooking the pulp under pressure in a solution of magnesium bisulphite.

• In 1874 the Berlin chemist Alexander Mitscherlich patented the sulphite process he developed. In this method, the deposits in the cell walls of the wood (lignin and hemicellulose) were dissolved by being boiled under pressure and this way the cellulose fibers were separated.

• In 1884 the engineer C.F.Dahl introduced a process for producing sulphate pulp using sodium sulphate.

The discovery of pulpwood and cellulose as main raw materials for papermaking and the invention and further development of the paper machine revolutionized the papermaking process. They gave the industry a huge boost and opened up the way to large-scale industry. The path from the small mill to the huge modern paper mills was stony and exciting - and it was marked by many technical inventions to make work easier and faster. MORE, FASTER, BETTER PAPER IN THE INDUSTRIAL AGE

**The Hollander:** Until the 20th century, the raw material for the paper machines was processed in the socalled Hollander. This helpful invention dates back to the second half of the 17th century and replaced the usual stamping mill. The Hollander consisted of an elliptical container with a knife cylinder mounted, shredding not only the raw material, but also feeding it into the manufacturing process. The Hollander roller could be moved with significantly less physical force than the hammers of the stamping mills and it reduced processing time significantly.

The paper-making machine of Louis-Nicolas Robert: Necessity is the mother of invention! This was also proven by Nicolaus Louis Robert at the turn of the 18th to the 19th century. He worked for the French printing and publishing house Didot owning its own paper mill with about 300 workers and producing paper for their own use and for state banknotes, like the Assignate of the revolutionary government. Annoyed by the strikes of the mill workers and the associated "paper emergency", the publishing house management commissioned Robert to clarify the situation. He carried out the job in his own way: he invented a paper machine that led the strike ad absurdum, because it replaced manpower!



The Robert's papermaking machine was ingeniously simple, but ingenious: From a pulp chest a cylinder splashed the pulp on a sloping board leading to an endless screen (340 cm long and 64 cm wide) with edge strips. The screen was shaken by a breast roll to improve dewatering. After pre-dewatering the resulting fiber layer passed a pair of squeeze rolls for further dewatering to receive the necessary strength. The endless paper web was removed from the screen by a roller and winded. Now the paper could be cut into sheets and dried in the air.

With Robert's machine, even unskilled workers could produce up to 200 kilograms of paper per day - this corresponded to the weekly output of a conventional mill operated by skilled workers learning their trade in at least six years of training. Curse or blessing? One man's meat is another man's suffering? Although Nicolas Robert received a patent on his machine in 1799, he could not derive a commercial advantage from it. His patent went to England, where very soon numerous improvements were made and even more efficient paper machines were developed ...

**Drying cylinder:** In 1820 Thomas Bronsor Crompton granted a patent in England for another important invention on the way to modern papermaking: A steamheated drying cylinder with a felt guide. The time-consuming air drying was history - and a new industry was born: the felt cloth industry. The invention itself was as simple as it was ingenious: the wet paper web passed a felt web and released the containing water to the felt which in turn was dried by a cylinder heated from

underneath. At the end of the machine the paper was ready to roll up.

Sizing: In 1805, Moritz Friedrich Illig invented a new method for stock sizing. The addition of resin size and aluminum sulphate to the chest made the paper ink resistant. The invention was preceded by the following finding: resin size particles and fiber pulp repel each other because both are negatively charged, and that is the reason why the resin size cannot stick to the fiber. By adding aluminum sulphate the charge of the fiber surface changes to positive. The now opposing charges of resin size and fibers attract each other, and the resin size adhering to the surface makes the fibers water repellent even within the sheet. In this way the suction effect of the fine paper pores is reduced or completely lost. However, the resin sizing achieved its full performance only in paper machines with drying cylinders at a correspondingly high temperature

**Filler:** At the beginning of the 19th century, in the course of stock sizing experiments, fillers were used to increase the stock, to save expensive fiber material and to achieve special paper properties.

Popular fillers are paper lightening substances such as kaolin, talc, chalk or barite.

#### THE WAY TO MODERN PAPER PRODUCTION

Until the middle of the 20th century, once again paper production has changed decisively. In the centre of the efforts were the extension of the working width, the



Patent diagram drying cylinder

speed increase of paper machines and countless technical improvements of diverse machine elements. Electric drives replaced the old steam and water power and more and more types of paper machines were developed for the production of special products. For example, the cylinder paper machine was mainly used for the production of cardboard, while the Yankee Machine produced lightweight papers and all kinds of sanitary papers.

Machines were designed for board production, production combining either several fourdrinier wires or forming vats with fourdrinier wires making the production of multi-layer products possible. The working width of the paper machines increased from 85 centimeters (1830) to 770 centimeters (1930), the speed increased from about 5 m / min (1820) to over 500 m / min (1930).

After the Second World War, the pulp and paper industry, received in addition to the mechanical advances, considerable impetus through the further development of measuring and control technology. At the beginning of the 1960s, also computer systems and process control systems found their way into the pulp and paper industry. Electronic devices did not only control and supervise the production processes of the various raw materials, but they also took over these tasks on paper machines.

In the second half of the 20th century, a wide range of different modern sheet formers were developed introducing another revolutionary innovation in paper machine construction. Among them were the twin-wire formers for paper and board production, the formers for the production of tissue and the hydraulic sheet formers for long-fiber fabrics. Their principle aim was the improvement of sheet formation at high speeds.

### BEST QUALITY FOR CONSUMERS AND ENVIRONMENT

Over the years the paper machines, their working speeds and, consequently, the production quantities have increased. Today the machine widths are up to ten meters and the working speeds reach up to 2000 m / min. But not only in terms of quantity but also in terms of quality a rapid development has taken place, Comparing today's paper types with their predecessors, the enormous increase in quality is clearly to be seen. This is not a matter of course, considering that today's papers are not only produced at significantly increased operating speeds, and that due to the raw material situation even low-grade types of wood and waste wood are used. In addition, since the end of the 1980s, the



*Historic printing press* in the Papiermachermuseum Steyrermühl More information: <u>www.papierwelten.co.at</u>

bleaching of pulp (TCF) has been 100 percent chlorinefree. After 200 years oxygen and hydrogen peroxide replaced the highly toxic chlorine gas in papermaking in the interest of humans and the environment.

The road from the beginnings of papermaking to today's high-tech machines was long and stony. Even in the digital age, paper is an important, indispensable writing material, or should we rather say a "printing material"? Because today we print everything seeming important to us, to keep it safe and to be able to touch it.

> Sources: Catalogue Papiermachermuseum Steyrermühl www.papiergeschichte.freyerweb.at

### **COMPANY NEWS**



# Christine Nestler-Kenzian: A PASSIONATE PHOTOGRAPHER

Customers and employees of ACAT know Christine Nestler-Kenzian as the "right-hand man" of ACAT CEO Manfred Zabl. "Inside" readers and many others know the committed assistant to the management but also from a completely different side: as a talented, sensitive photographer.

### AUTHOR:

### **CHRISTINE NESTLER-KENZIAN**

It all started with a borrowed Nikon SLR camera. A good camera, but I was dissatisfied with the photos because they were a bit blurry and greenish. How could it be that 'half cost' cameras made much better photos? The reason was that I used the automatic mode, which simply could not lead to satisfactory results. I did not have the knowledge required for the operation of the camera via aperture, ISO and exposure time.

From that point on, I have been completing the training as a professional photographer. The composition of images, technical and design fundamentals, lighting technology, equipment, digital imaging, classic darkroom, lightning and much more were the basis of my education. Numerous in-depth workshops, tutorials, the reading of textbooks and magazines are constantly expanding my photographic expertise. When asked what I photograph, I never reply: "I photograph everything", because in my opinion today it is necessary to specialize - to concentrate on a niche.

Having a good eye is the absolute must for any photographic special field, whether dealing with landscape, nature, portrait, reportage, travel, wildlife, sports, wedding, nude or architectural photography. The big differences are in the details: In the reportage photography the rapid capture of the right moment and a quick reaction are crucial for the success of a photo. For the portrait photography one needs the talent to adjust oneself to the person to be portrayed in addition to the mastery of the photographic factors such as the choice of optics, lightning, choice of background and image details.

I have specialized in portrait and event photography. My passions are portraits of people, "company" portraits and the photographic support of corporate events. The photo shooting can take place on-site with a mobile studio light, or in my own studio I have rented quite recently. Flexibility is an essential feature a photographer needs. One will need the willingness to adapt oneself to changing conditions, even if they change at the last moment. But it's not just about the technically flawless execution of the contract. First and foremost, it is crucial to capture something personal, something special; - whether this is a human being, an object or a situation. It is also important to make recognizable the esteem that a company places on its employees by deciding upon high-quality employee portraits. Especially for companies, the outward appearance of their employees (keyword "employer branding") is an important part of communication with customers, suppliers and also with future colleagues.

# Mineralische Flammschutzr

Vielfältig anwendbare Produkt Bei uns haben Sie die Wahl zw breiten Palette an Produkten von Anwendungen geeignr kommen sie verstärkt in r darüber hinaus aber au und Kunststoffindustr

Maschinenservice und Es

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Auf unterschie Sie finden bei Rheologiear Basis, wie Polyach Danit Ine Anlage Zuveri Welchr Wartung und Service frage Unsere Serviceles Sir

niegenierige armer in toble

Christine Nestler-Kenzian likes creating informative company profiles

Today corporate photography transports the image of a company and its products. Pictures are required capturing the character of a company, allowing insights into the company and its operations and making the company tangible and personal. People in their working environment, photographs of industrial plants and products are presenting manufacturing companies in an authentic, dynamic and expressive way, and the pictures are telling a kind of "story" on company websites, in brochures, at trade fairs and in advertising material.

For the photo shoot of staff portraits often only a few minutes between meetings can be scheduled. Therefore, it is not enough just to master the craftsmanship. Is the suit clean, does the forehead need to be powdered, is the tie in place and are the body and head postures and expressions correct? - These are all "little things" one needs to be kept in mind, even if there is only little time for building personal relationship and trust needed to be reflected in the picture. Often the photographer hears the sentence: "I do not like to be photographed - I'm not photogenic ..." - and how nice it is to hear after work is done: "This is the most beautiful photo ever made of me!" Then the photographer is happy too and he knows that he did a good job.

Contact: Christine Nestler-Kenzian Studio: Wolfgang Pauli Gasse 3 | 1140 Wien www.fotografie-kenzian.at e-mail: info@fotografie-kenzian.at

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# **KEEP HEALTHY THROUGH THE YEAR** The Importance Of Vitamin $D_3$ For Human Health



The renowned occupational physician Mag.Dr. Herbert Untner reports interesting, informative and exciting topics on health and he gives valuable tips for better well-being in everyday life

AUTHOR:

### MAG. DR. HERBERT UNTNER OCCUPATIONAL HEALTH

Over the past ten to fifteen years the great importance of Vitamin  $D_3$  has been recognized. For a long time this vitamin has been associated only with the prevention of bone diseases such as rickets and osteoporosis and that is still the knowledge of large parts of the population today.

Vitamin  $D_3$  is a fat-soluble vitamin and is produced in the subcutaneous fat cells by the direct solar radiation on the skin. In addition, it is absorbed from food. The average Western European food does not contain the amount of Vitamin  $D_3$  achieved by a single sunbath (about 10,000 International Units = I.E.)

Vitamin D<sub>3</sub>-rich foods include: fatty fish (such as sal-

mon), especially those derived from tusks, cod liver oil, fish oils, some mushrooms (such as shiitake, white mushrooms), slightly less Vitamin  $D_3$  is found in dairy products and eggs also.

A VITAMIN D3 DEFICIENCY IS FAVOURED BY:

- Clothing
- Sun protection use from factor 8 upwards
- long working hours in buildings
- dark skin colour
- Inability to go outside without help
- Alcohol abuse, certain medications (against epilepsy, depression, psychosis, transplant rejection)

VITAMIN D3 IS IMPORTANT FOR:

• the supporting and connective tissues, extracellular

substance (i.a. Bones, joints, muscles, teeth and periodontium)

• the absorption in the intestine and storage of calcium and phosphate in the bones

• the immune system (germ defense, immune regulation, inhibition of auto-immune processes)

cardiovascular functions

• the activity of genes and formation of gene products

• the signal transmission within the cells and the influence on the metabolism

• the hormonal balance (working together with other hormones)

it is effective against oxidative and reductive stress and thereby it maintains the necessary "redox balance"
Psychic functions (vitality and joy, alertness, attention, inner peace, stress resilience, sleep)

• Cancer prevention. Recent studies show a causal relationship between low Vitamin  $D_3$  blood levels and the development of cancer. Vice versa a high Vitamin  $D_3$  level is a protective factor against the development and growth of cancer.

HOW CAN I PROVIDE MY BODY WITH SUFFICIENT VITAMIN D<sub>3</sub>

Vitamin  $D_3$  deficiency is caused by our western lifestyle and by the settlement of people in areas far away from the equator. In these regions the skin is not sufficiently irradiated by the sun (This is especially true for the lowsunlight months). Even without an additional intake of Vitamin  $D_3$  in the form of drops or tablets, adequate Vitamin  $D_3$  blood levels can be achieved by the exposure of skin to the sun during May to August. The vitamin activation in the skin works best between eleven and three o'clock (peak of the sun). But it is not enough to expose just the face and hands to the sun. At least also the arms had to be unclothed. A daily sunbath of 10 to 20 minutes is sufficient to fill up the depots for a few days, because fatsoluble vitamins can be stored well by the body. Artificial sunlight in the form of a solarium cannot replace natural sunlight and therefore it is not suitable for the production of Vitamin  $D_3$ !

Today it is the medical standard to recommend the intake of Vitamin  $D_3$  during the low-sunlight months. In recent years, numerous studies have shown that the dosages originally recommended by the WHO were too low. Today we know that a daily intake of 2,000 to 5,000 International Units (I.E.) is necessary. The laboratory reference range is currently between 30 ng / ml and 100 ng / ml, whereby adequate supply is given from a value of 50ng/ml. The Vitamin  $D_3$  metabolism is closely linked to the calcium metabolism. As a rule, a Vitamin  $D_3$  deficiency also means a calcium deficiency, therefore Vitamin  $D_3$  should always be taken in combination with calcium (recommended daily dose: 500 mg to 1000 mg).

More information on this topic: Institut für Informationsmedizin Website: www.infomed-wien.at



### COOKING ACCORDING TO THE FIVE ELEMENTS IN SPRING

In TCM spring corresponds to the element wood as well as to the organs liver and gall bladder. The colour of spring is green and its taste is sour. The urge of many people to move and go outside corresponds to the natural movement of plants in spring - everything sprouts and comes out.



### AUTHOR:

### SUSANNE DURST

The winter is over, the tiredness disappears. Refreshing young herbs set the tone. Everything sprouts and strives to come ever closer to the light. We find the concentrated fresh vitality especially in germs and sprouts: They leach out the excess salt of the winter months and make you want to exercise. It is the time of detoxification, because in spring liver and gall bladder respond particularly well to purification cures. Activity helps against springtime lethargy caused by the salt residues in the body fighting persistently against the awakening spring feelings. We get up earlier and go to bed later. The unnecessary ballast is blown away by the fresh wind. Now frequent stretching is required!

### RECOMMENDED FOOD:

- Steamed and blanched dishes are ideal to start the year with full freshness ...
- All green vegetables contain a lot of sweet, mild taste.

- Fresh cabbage leaves -> relief stagnations with their sharpness
- germinated seeds of red radish, black radish and cress are miracle cures against lethargy
- Basil, rosemary, dill, cumin and fennel supply body and mind with spring energy.
- Simple dishes with few ingredients.
- Fixed meals without meat.
- Grain meals from amaranth, barley, millet or quinoa.
- Bitter spices such as turmeric and asafoetida, mild curry blends.
- Bitter lettuce with a simple warm meal.
- sprouts, arugula, chicory, dandelion, parsley, lemon juice and peel.
- Nettle soup.
- Marigold -hibiscus tea.
- Flower teas in general.
- nettle, dandelion and birch leaf tea.

A recipe bringing tired minds to life can be found on the top right!

### STIR FRIED VEGETABLES WITH BUCKWHEAT (WILD) HERBS AND MINCED BEEF

### Ingredients:

- <u>Wood:</u> 1/2 bunch of parsley, 1/2 bunch of chives, Juice of 1/2 lemon.
- *<u>Fire</u>: some paprika powder, spring herbs like* Dandelion, nettle tips in spring or rocket in autumn, 200 g buckwheat.
- Earth: 250 g minced beef, 250 g chard, 4 celery stalks, 1 tablespoon vegetable oil, a little rice syrup.
- <u>Metal:</u> 2 bunches of radishes, pepper from the mill 2 (spring) onions
- <u>Water:</u> Salt, Tamari (soy sauce).

#### Preparation:

Wash buckwheat, and simmer with twice the amount of water or vegetable soup at low temperature for about 20 minutes. Wash chard, cut green pieces into strips, cut white stems into very fine strips. Peel and cube the onions, wash radishes and cut them into quarters. Wash stark celery and slice. Heat oil in a frying pan and fry the minced meat vigorously. Season with pepper, salt, soy sauce, lemon juice and paprika powder. If necessary, add a little water. When the meat is cooked (after about 10 minutes), add the white part of the chard and cook for a few minutes, then add the green part of the chard, the radishes and the stalk celery. Let it boil briefly.

Add the buckwheat, mix and, if necessary, season again with pepper, salt, lemon juice, paprika and rice syrup.

Across: 7 Liberate.

8 Trot, 9 Toughie, 10 Amid, 11 Stream,

Handel,
 Privet,
 Needn't,
 Adds,

20 Cabaret,21 Gnat,22 Anorexic.

4 Telephone book,

Down: 1 Dictator, 2 Reduce, 3 Mathematician,

5 Attain, 6 Gobi, 13 Einstein,

15 Visits,

**17** Eerier, **19** Dune.

Good luck and enjoy your meal!



### **BRAIN WORK AND MENTAL EXERCISE**

### **COMPANY NEWS**

### ANNIVERSARIES

Photos Christine Nestler-Kenzian (3)

### REINHOLD FRECH -25 YEARS ACAT TO THE BENEFIT OF OUR PAPERTECH CUSTOMERS

This spring we are celebrating a really important event! Reinhold Frech, a member from the very start is completing his 25th year at our ACAT family. In his mid-thirties he started to strengthen our ambitious paper team with great commitment. Primary he supported our new customers with his excellent expertise in his Styrian

homeland! Whenever we received a call to solve a problem - Reinhold was on hand, tackled the problem - and solved it! His commitment was and is outstanding! His steady hand and his professional knowledge and skills were greatly appreciated by all of us!

The most important capital of a company can be found not only in the commercial numbers. It is the quality, dedication, skill and enthusiasm of its employees! Customers especially appreciate the consistent high quality of services and competent advice in all situations and that is the reason why our company is still growing!



Technical service is our success – and Reinhold Frech is the absolute personification of our motto! But the time has come that Reinhold has worked enough. After 25 years of successful work for our company he takes his well-deserved retirement! But as it is customary in a family, whatever happens - we will stay connected

> with him as we are with our other retirees. When worse comes to worse – we can still count on him!

Reinhold, we thank you for your great work and the outstanding achievements, which are exemplary for your successors and on which they can build upon. Wherever you will enjoy your future time and whatever happens, you will always be part of the ACAT family. On behalf of all of our customers and employees of ACAT I look forward to staying in touch with you and I wish you all the best for your well-deserved retirement! *MZ* 

### RESOLUTION OF MENTAL EXERCISE FROM ISSUE 25



### WELCOME BABY!

RUDOLF KAFKA: THE FIRST GRANDPA IN THE ENVIRONMENTAL DEPARTMENT

On February 8, 2018, Rudi's long awaited grandson saw the light of day. For nine months, he has been keeping the upcoming joyful event secret from all his colleagues: finally, there is a picture of the proud grandfa-



ther with his grandson Nino shot by a paparazzi. We all congratulate him!

### ANNIVERSARIES

### **15 YEARS GERHARD ZIMA**

For 15 years Gerhard Zima has been a great support to the chemtech division. Due to his industry experience, he is a competent partner for our customers and his application consulting is excellent. His extensive experience is especially valuable in introducing new products he accompanies and prepares excellently. He devotes the maximum personal effort to the taking over of new mar-



kets. For example, every Monday he perfects his Hungarian in a language course in order to better communicate with his Hungarian customers. In his free time, he supports his wife with various works for her Easter and Christmas markets. Since his 60th birthday he has been learning to play the saxophone, and recently he has become a grandfather. I hope that Gerhard will continue to support us with his tireless efforts until retirement, and I would like to take this opportunity to thank him for the excellent co-operation. *FR* 

### **15 YEARS CHRISTIAN SUTER**

For 15 years Christian Suter has been working at ACAT. Over time, the work requirements have changed a lot, but you, dear Christian, you have not changed. You still have your contagious, relaxed and competent ability to tackle tasks. Your dealing with colleagues and customers shows that you have your heart in the right place beside your comprehensive knowledge.

Dear Christian, on this occasion the ACAT team would like to thank you from the bottom of its heart. We hope that you will continue to enjoy working with us and above all, with your customers, and that your smile will not be lost even when the pressure of our job entails is growing. But we do not worry about that, because you have discovered the ultimate relaxation method for you, you just take off! We hope for many more years working together!

### **15 YEARS ALDO RANDISI**



Aldo met our family business via our non-woven trading activities (anowo ltd) and for quite some time now he has been working in our newest department "airtech".

With FreshWave®IAQ and Skyvell we are distributing two solid product lines for commercial odour control for almost each problem. Aldo likes to travel and he appreciates the direct customer contact. In combination with his extroverted

enthusiasm, Aldo succeeds to open the doors, to constantly enlarge our customer base and to receive very positive user feedbacks. He is full of ideas for future applications. On the way to our strategic goal we still have to meet many more challenges and we are happy to have Aldo with his experience and his enthusiasm at our side.

On behalf of ACAT I would like to thank you for the past 15 years and I look forward to many more years of cooperation. *POB* 



### **COMPANY NEWS**

### **NEWCOMERS**

#### Photos: Christine Nestler-Kenzian (3) Gabi Horak (3

### ALFRED BAIER

Since the end of last year Alfred, short Fredi, has been strengthening our team of envirotech Austria. After 20 exciting and experienced years in the wastewater industry he joined the ACAT family in October 2017. Fredi lives in Upper Austria and he starts



his business trips from Mondsee to work out satisfactory solutions with and for his customers. Privately he enjoys traveling with his family. We warmly welcome our new colleague and motorcyclist to our department and we wish him maximum success.

ES

### ROLAND WELZ 100% QEHS

QEHS - this abbreviation stands for Quality, Environment, Health & Safety – meaning: Roland is responsible for quality and environmental management, health and safety at work and chemical product safety. Until now in our company the work concerning QEHS was supervised



by several persons. However, for several years the ACAT Group has been growing steadily and the regulatory environment has becomeing increasingly demanding. We decided to bundle the QEHS activities in a full-time position because quality, as well as safety and protection of humans and nature are of great importance to us. Roland Welz is the ideal person for this position: He is a graduate biologist and he has experience in the chemical and pharmaceutical industries, so it will be easy for him to learn the ropes. Roland works systematically, proactively and pragmatically. He is aware of the importance of his work for our business and he is always looking for the right solution for everyone. His spare time Roland likes to spend outdoors or in his garage restoring vintage Mercedes cars. We wish him every success in the area of responsibility becoming increasingly important for ACAT. All the best, Roland!



will also be part of Ferenc's area of responsibility. We are currently training Ferenc on our product portfolio, and his many years of experience in the distribution of wood protection products will certainly be helpful for him.

FERENC VERESS

Since the 1<sup>st</sup> of February

Ferenc Veress has been a member of or chemtech-

team. Ferenc will take over

the sales territory of Roma-

nia from Paula Ignatescu, who will retire this year.

Since Gerhard Zima also

will retire soon, Hungary

Privately, Ferenc is an avid motorcyclist. He was born in Romania and speaks perfectly Romanian, Hungarian and English. He has two children and currently lives with his family in Hungary. We, the team of the chemtech Division, wish Ferenc much success in his new area of responsibility and are looking forward to our future cooperation.

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### JOHANNES KAIßL

Since October 2017 our new multi-talent Johannes has been supporting the ACAT watertech department not only in chemical matters, but also in terms of process engineering and machine technology. He has a lot of relevant experi-

ence because after completing the Technical College for Chemistry in Wels he has been supporting customers in the wastewater industry for 13 years.

Besides his work at our company, he intensively studies process technology at the FH Wels. If there is some free time, he is training Shotokan karate, repairing his cars or he is working with his computer. Is there enough time left for his girlfriend Katarina? We hope so, and we wish him every success in his job!

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