



A formaldehyde magazine from JM Formox

Informally Speaking

Autumn/winter 2014

Customer Center

Stepping up

Higher capacity
with FT4-plant

Why FPC?

Our strategy: "3C" - Collaborate,
Customer focus and Create value

Foresa - our first plant customer
celebrates 50 years

Facing a changing world

Dear reader,

The world around us is once again changing. The economic outlook is being played down and the outlook for Europe is particularly disappointing. As a result, the price of oil has fallen to its lowest level in several years, which affects us all in various ways. At the same time, relations between Russia and the West have taken a turn for the worse in the wake of the unrest in Eastern Ukraine. Sanctions put into effect are making it increasingly difficult for western companies to do business in Russia, and vice versa. On the bright side, USA and China continue to be drivers of world economic development. How is the formaldehyde market doing amidst all of this? After a record 2013 in terms of sold and installed capacity, 2014 is more of a normal year. Despite the relative pessimism around us, the future continues to look promising, with decent growth in most markets, coupled with new applications for formaldehyde on the horizon.

In this issue of Informally Speaking we take a look back at one of our first customers, Foresa in Spain, who recently celebrated 50 years since the installation of its first Formox plant. We also continue our series about Johnson Matthey's group strategy, this time looking more closely at Customer Focus and how this is applied at Formox. In addition, we take a closer look at the board and panel industry. We recently completed our bi-annual customer survey. To all of you who participated in the survey I would like to say Thank you! We value having you as our customers and we appreciate your feedback.

I would also like to highlight that our next seminar, Formaldehyde Europe, will be taking place in Helsingborg, Sweden in the first week of May, 2015. Don't forget to mark the date in your calendars!



Allow me to round off by wishing everyone a joyful festive season and a Happy New Year!

Mårten Olausson
General Manager,
JM Formox AB

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Johnson Matthey

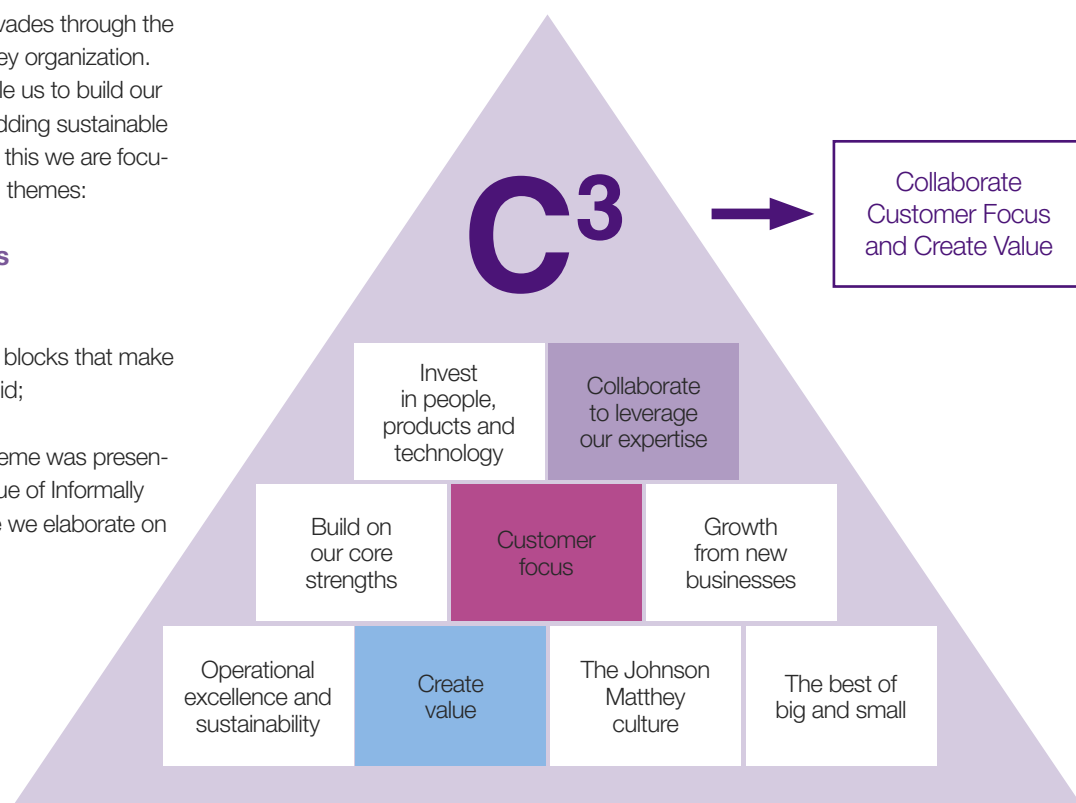
- our strategy

Our “3C” strategy pervades through the whole Johnson Matthey organization. This strategy will enable us to build our 3rd century of value adding sustainable technologies. In doing this we are focusing on three powerful themes:

- **Collaborate**
- **Customer Focus**
- **Create Value**

We have nine building blocks that make up our strategy pyramid;

Our **Collaborate** theme was presented in the previous issue of Informally Speaking. In this issue we elaborate on **Customer Focus**.



Customer focus

We always want to deliver the best solution we can for our customers. It has been in our DNA since the beginning. But “the best” can mean different things in different markets for different customers. To remain competitive we need to consistently look to add value for our customers by understanding what “the best” looks like for each and every market they are working in – and then delivering it.

Valued by you

For that reason we conducted a

worldwide customer survey during the month of August. It was two years since the last survey and the result was very positive and it confirmed that Johnson Matthey Formox’ methods of working since many years are highly appreciated by our customers. We are on the right track but we will decisively continue to strive to be even better; to give our customers the best support in the market place with high technical competence, to constantly improve the quality of our products and to maintain our good, long term, customer relations.

We want to thank all our customers that participated in this survey!

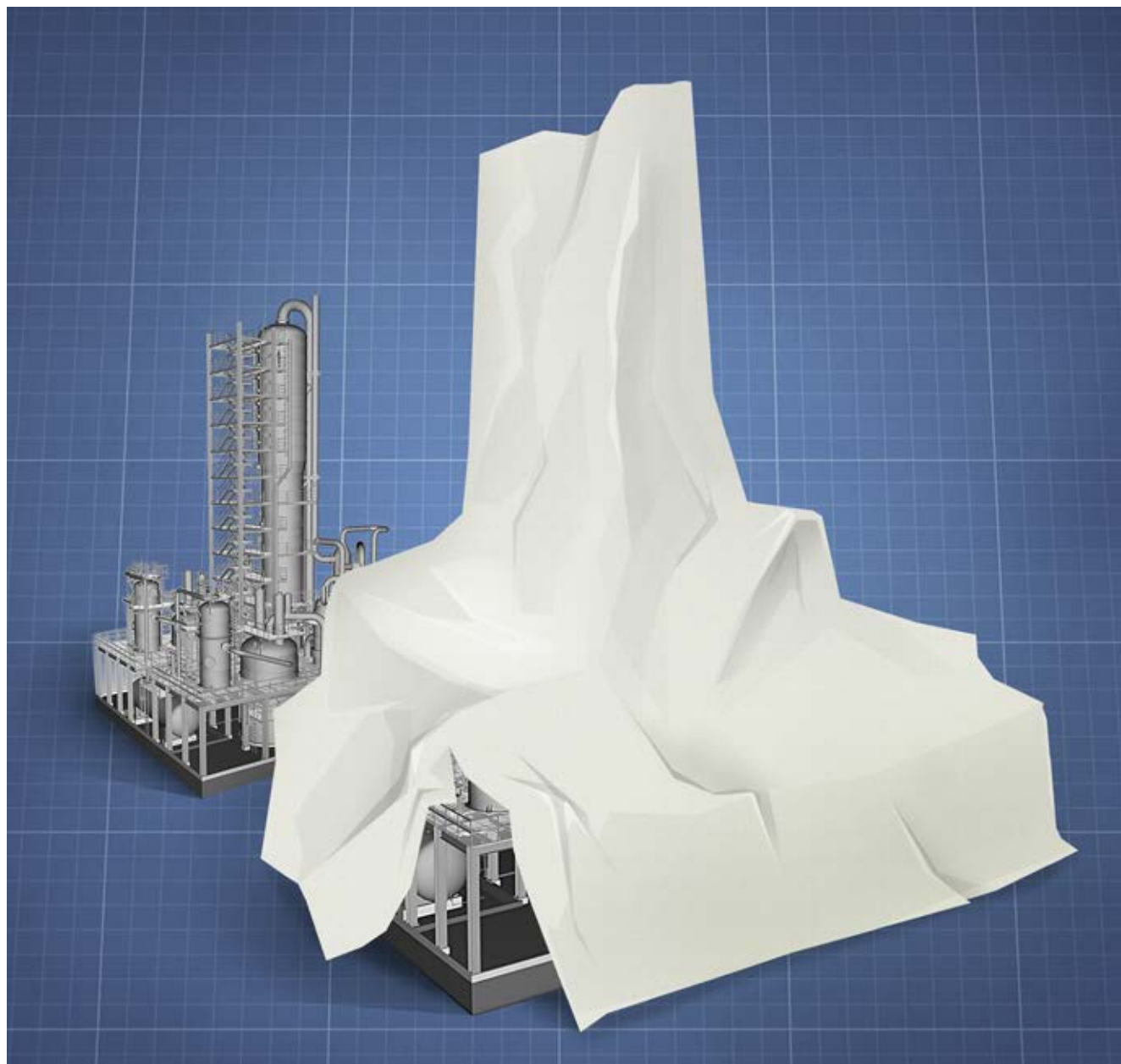
BY



Anna Rundblad,
Communication Coordinator,
JM Formox AB

Coming soon...

Higher capacity plants



Demand for larger capacity

Over the last few years JM Formox has been offering multiple FT3 plants for a single location, up to 4 x FT3. Given that investment cost per metric ton of capacity is reduced if the number of plants is reduced and the complexity of the site is improved with less equipment, being able to offer plants with higher capacities would obviously be beneficial. I would even say that, at least in China, customers are more interested in higher capacities (lower investment) than in a reduction in

operating costs, which does not necessarily apply for European customers. This is how we interpret the signals from the market, but you are more than welcome to contact me and give your input to what you think we should focus our development on moving ahead. After all, the best developments from JM Formox are the ones that bring most value to you.

What sets the maximum capacity of our present plant range?

There are basically four parameters that

can be varied to modify plant capacity: methanol inlet, absorber top pressure (gas density), gas velocity and the physical size of the equipment. Of these four degrees of freedom, we are now focusing our development work on equipment size (designing an FT4) and increasing the absorber pressure. With the turbocharger in our portfolio (pressurization for free), we are not restricted in terms of how much we can increase the pressure without increasing power consumption per metric ton of product. As mentioned at several

conferences, we are currently working on this and expect to launch a plant with higher operating pressure in the not too distant future. Meanwhile, the FT4 plant can be offered straight away!

What is an FT4 plant?

With a capacity of just below 1100 MTPD as 37wt%, FT4 will be the largest available plant on the market. Although no FT4 plant is yet in operation, it is simply a scaled up FT3 plant, so the technology is proven. Our confidence in FT4 is reflected in the guarantees we offer, which are the same as for FT3. All features available with FT3 will obviously also, in the end, be available with FT4.

To whom would we then offer an FT4 plant?

Obviously the need for more than 836 MTPD of capacity must be desired. The most important to keep in mind is that transport issues must be looked at for the specific site even before any contract is signed so that we know how to ship and order the vessels.

Continuous improvement

We are of course happy to be able to offer the world's highest capacity plant, which is a milestone in our long term development strategy, but our work doesn't end there. I hope to be able to present more exciting plant news at the seminar

in Helsingborg in May. In the meantime, please don't hesitate to contact me or any JM Formox representative to give input on what you would like to see improved in our plant offerings.

BY



Andreas Magnusson,
Global Product Manager
Plants, JM Formox AB

Customer Center - a shortcut to better knowledge



Whatever your role, if you are interested in formaldehyde related topics, then you should have a closer look at our Customer Center. Production managers and engineers, shift leaders, maintenance engineers and other professionals for whom knowledge of formaldehyde technology is essential will benefit from answers to key questions such as:

- What is the correct method to use when cleaning the tubes in the reactor?
- What is paraformaldehyde, why is it formed and what is the correct method to remove it?
- What is important to think about regarding storage of formalin?
- What is important to think about when returning spent catalyst to JM Formox for reprocessing?
- How much catalyst did we purchase during the last 5 years?

What and where and how?

Customer Center is a web-based tool that you will find at **www.formox.com**. You have your own personal password-protected section where you can gain access to different areas of information depending on what type of support agreement you have. To get your password, simply fill in and submit the registration form at: **customercenter.formox.com**, or talk to your JM Formox representative.

Sign up today!

Why wait? With Customer Center you gain 24/7 access to a lot of relevant information. You'll find many interesting topics in our archives that are related to your search. So register now to begin taking advantage of a convenient shortcut to better formaldehyde knowledge!

BY



Lars C Andersson,
Regional Technical Support
Manager, JM Formox AB

Web update

We are now in the final stage of updating the design of our website, **www.formox.com**. Here is a "sneak peak" of our new look that also shows where you will find our Customer Center. Made for formaldehyde producers, the Customer Center offers a lot of interesting and useful content.



If you have any questions or comments regarding what you would like to find on our website, please send me a mail: anna.rundblad@matthey.com

BY



Anna Rundblad,
Communication Coordinator,
JM Formox AB

FPC

FPC

– another obscure abbreviation

Your oxide technology formaldehyde plant is most probably fairly robust and straightforward to operate with good performance. That is of course great, but what if someone could help you and your operating team to get the operation of the plant and catalyst optimized? A few tenths better yield or a bit lower pressure drop in the plant will save you a lot of money! I bet it sounds interesting, and we have the solution!



Lucia Bengtsson and Åsa Hallberg, Sales Coordinators, analyzing data to improve your yield and optimize catalyst lifetime.

If you are a JM Formox catalyst customer, we not only invite you, but also strongly recommend that you send us data from your plant on a regular basis. We can then give you feedback with recommendations on how to get the best possible performance from your plant. Given the desired plant output and possible other constraints, we can advise you on how to adjust your operating parameters.

Many of our customers use this service regularly. New plants with less experienced personnel can of course benefit a lot, but also customers who have long experience of their own find it valuable to receive a “second opinion”. We emphasize the importance of having a continuous exchange of information over the entire catalyst run. To receive your data for review only when process conditions are abnormal is not ideal, and it might be too late then!

Formox Process Control

To make the data exchange efficient, we can provide a template spreadsheet for

you to use. This is what we prefer be used in order to speed up the process, but you can also use other methods if that is helpful for you. Discuss with us to find a good procedure. Compile operational data weekly, and then send your weekly reports to us once a month. You can send your data to your JM Formox representative or directly to the mailbox of our support team, ProcessDataToFormox@matthey.com. Please note that all process information provided by any JM Formox customer as well as any other non-public information from the customer is treated with the strictest confidentiality.

A service to all catalyst customers

The data we receive is entered into FPC, our **Formox Process Control** software (aha!). We can then analyze it, create graphical trending, compare different loads and also generate a report that in the end will be our feedback to you together with our comments. The report is normally sent by e-mail and it can be sent either to you

personally, or to anyone else you designate. Why not take the opportunity to have us take a look at your data using our unique technical know-how and experience?

There is a very good chance that we can help you improve your yield, optimize your catalyst lifetime, minimize your energy costs and reduce your maintenance requirements.

In addition, the review of your process data with FPC is part of our technical support – it's included in our scope for all catalyst customers and comes without any additional charge.

We look forward to receiving your next set of data – contact your JM Formox representative now!

BY



Lars C Andersson,
Regional Technical Support
Manager, JM Formox AB

Maintenance

– step one to optimal plant performance

It's not a bold guess that all of you readers would like to have a safe, reliable, robust, high performance, flexible and cost efficient production unit at your service. A unit that is ready to produce correct amounts with correct quality and in the right time. Is this just a dream,

impossible to reach in reality or...? Of course everything is relative. All plants cannot perform like an Olympic gold medal winner, but for sure every plant has its own optimum potential. To reach that potential should be the goal for every plant owner. But before you

start working with and adjusting operating parameters to gain better yield or lower power consumption, it's essential to ensure that the plant is well prepared.

Do we dare take it to the limit?

The plant must be well maintained. Make a comparison of the engines in Lewis Hamilton's 2014 Formula One car and your nice neighbor's, Mr. Grey's, Volvo station wagon from 1978. The engines are very different and their respective potentials are not at all the same, but neither of them can perform at the limit if not properly maintained. This is why this article is about maintenance of a formaldehyde plant. This time the focus is on inside battery limit maintenance work. In addition to routine work such as cleaning, lubrication and instrument calibration, we believe this is worth considering during a longer standstill in a JM Formox plant, e.g. during reloading of the catalyst. We have listed what we think are the more important activities to consider, but we don't claim the list is complete. You can get more detailed information by contacting your JM Formox representative or by using the Customer Center information tool. Those of you not having a JM Formox designed plant can most certainly also benefit from the list.

BY



Lars C Andersson,
Regional Technical Support
Manager, JM Formox AB

Maintenance checklist

- Check the plant safety trips by simulating relevant signals – verify the function
- Fresh air filter cleaning or replacement
 - unnecessary pressure drop is expensive
- Blower overhaul in accordance with instruction manual
 - reliability is everything
- Run your mechanical integrity program for vessels and tanks
- Routine maintenance – safety cannot be compromised
 - Check the closing time and the tightness of the methanol safety valve
 - Check capacity and tightness of SRVs
 - Check and clean all strainers - replace if necessary
- Methanol vaporizer:
 - Check and clean the spray nozzles – check spray pattern, replace if necessary
 - Inspect tube plates and tubes; clean if necessary
 - Inspect and clean pall rings – important to remove any impurities; replace rings if necessary
 - Remove any paraformaldehyde on shell side - unnecessary pressure drop is expensive
- Reactor:
 - Inspect the upper and lower tube plate of reactor – remove any impurities/dust
 - Inspect and test for HTF leakage
 - Check the quality and purity of the HTF – the supplier can advise you
- HTF condenser and steam generator
 - Clean and be sure to remove any deposits; scale-removal chemicals might be necessary if poor quality BFW is used
 - Inspect and test for leakage – any leakage must be repaired
- Absorber:
 - Inspect the demister - clean and repair if necessary
 - Check top tray in the absorber; if necessary clean from calcium precipitation or residues
 - Check the cooling coils – clean and repair if necessary
 - Check the entire absorber system for paraformaldehyde; don't forget piping and plate heat exchangers – all paraformaldehyde must be completely removed
- Check the catalyst bed in the ECS reactor
 - Level the catalyst to ensure uniform flow over the bed
 - Check the reactor net – repair if necessary

New ownership brings deeper cooperation

The acquisition of Formox by Johnson Matthey has dramatically increased the possibilities for innovation.



The possibilities are most obvious in the area of catalyst development, where Johnson Matthey holds a strong position in many fields. JM Formox now has access to Johnson Matthey Technical Centres, bringing advanced characterization instruments and resources for performing basic research. We are currently working together with the basic fundamentals regarding our formaldehyde catalyst. This will make it possible to improve our present KH formaldehyde catalyst as well as develop new loading plan applications in the future. Johnson Matthey has long been working with precious metal oxidation catalyst and is in a good position to strengthen

the JM Formox emission control product range for formaldehyde plants.

New technologies and applications

Our formaldehyde catalyst plant in Perstorp is now one of many catalyst production sites across the world with the possibility to both provide and receive support in all areas.

The JM Formox formaldehyde plants are also benefitting from cooperation projects within Johnson Matthey. The focus here is application of new technologies, simulation calculations and modeling. Part of this work is aimed at providing larger capacity plants for new formaldehyde applications. We are also looking at

the integration of the formaldehyde plant into both the upstream and downstream applications.

All in all, JM Formox sees a lot of possibilities in the cooperation projects within Johnson Matthey, which we expect will generate even more value for our customers.

BY



Ola Erlandsson,
Manager Technology,
JM Formox AB

Projects & start-ups

New Projects

- An agreement for supply of a new FS3 plant to east Europe has been signed.
- Masnova Quimica, S.A. de C.V., a Masisa's Company, has signed up for a formaldehyde plant to be installed in Durango, Mexico.
- An agreement has been signed for supply of two FS3 UFC plants.

Ongoing projects

- Two FT3 plants for Momentive Specialty Chemicals, Inc. in Louisiana, USA, are nearing the end of the design phase and will ship in the first quarter of 2015.
- The project for BASF PETRONAS Chemicals Sdn Bhd, Malaysia, is approaching shipping.
- The FS3 plant for Xinjiang Xinye Energy Chemical Co., Ltd, located in China, is proceeding well.
- The project for a FS2 plant in US is in the shipping phase.
- Works on two FT3 plants to be located in China is proceeding well.
- The project for a FT3 plant for Xinjiang Markor Chemical Industry Co., Ltd. In Korla, China, is in the construction phase. This will be their third JM Formox plant in Korla.
- The JM Formox FT2 plant to be supplied in the Middle East is in the shipping phase.

Start-ups

- The FS3 plant for Tangshan Zhonghao Chemical Co.,Ltd., China, went on stream in June.
- The new FT3 plant for Yantai Wanhua Polyurethane Co. Ltd., China went on stream in August.
- The FS2 UFC plant for Campact UK (a subsidiary of Egger) was started in August.
- The new FS1 UFC plant to a client in the Middle East was success fully started.
- The FS3 plant for ISP Marl GmbH (affiliate of Ashland Inc.), Germany went on stream in October.
- One FT3 plant for Xinjiang Tianzhi Chengye Chemical Industrial Co., Ltd (part of Xinjiang Tianye Group) was successfully started in October. Next FT3 plant is about to go on stream shortly after publication of this issue of Informally Speaking. The plants are located in Shihezi City, China.
- The project for CHONGQING CHANGFENG CHEMICAL INDUSTRY Co., Ltd, Chongqing, China, is scheduled to go on stream shortly after publication of this issue of Informally Speaking.

BY



Jonas Lindborg,
Chief of Projects,
JM Formox AB



Expanding office in Sweden!

Since Johnson Matthey's acquisition of Formox 1½ years ago, we have grown. Greater demand for our plants and catalysts has resulted in a need to strengthen our organization. Fifteen new talents in all have been recruited, creating a need for more office space at our headquarters in Perstorp, Sweden.

We have now expanded with around twenty newly renovated rooms, both offices and conference rooms.

The larger workspace has also made it possible for our different departments to work closer together in teams now located on the same floor. Today we are approximately 100 employees in Perstorp, and we would be happy to give you a tour on your next visit!

BY



Anna Rundblad,
Communication Coordinator,
JM Formox AB

Loading service update

It has been six (!) years since the previous article about loading service in Informally Speaking and it is really time for an update. Here we will take a look in the mirrors of both the past and the future. For the former we turn to Bengt-Åke Hansson (known to most customers using our loading service as “Bengt”), whom, we are sad to say, is now retiring. Well, maybe not completely. Bengt will continue to do some loading services in 2015. Via his company, Bemek, Bengt has been JM Formox’s speaking partner, responsible for coordinating the loading services performed at our customers’ sites around the globe. Of course, this does not mean we will stop offering loading services. Allan Larsen, who has been working with Bengt since 1991, will now take over this responsibility. Allan is not only a skilled loading supervisor, but also (just like Bengt)

inventive and a skilled mechanic, and will continue to develop our loading machines. Ten years ago we had only seven machines with ability to load up to four layers in one go. Next year we will have ten more and half of these new machines can load up to eight layers in one go. So there has been quite a lot of development in the loading service field since our last article.

Unloading machine?

But there is for sure more to do! Both when it comes to unloading and loading, as well as the inspection part. We will put more efforts into this area going forward, and, looking into the future mirror, we hope to see the unloading machine finally materialize as well as improved and perhaps novel loading concepts. Ten years ago our CAP 1 was still quite fresh and, in its original version, required

only a 4-layer loading machine. Today we have 8-layer loading machines to manage the CAP 3.0 loads. What will be required for future loads is, at this stage, still unknown.

We take this opportunity to sincerely thank Bengt for all his good work and cooperation. His extreme flexibility and willingness to always satisfy our requests as well as our customers’ needs is highly appreciated. We wish him a peaceful and relaxing retirement, and hope that all the nice people and places he experienced while working with JM Formox will bring him lots of happy memories.

BY



Ronnie Ljungbäck, Global Market Manager – Catalysts, JM Formox AB

Allan Larsen -taking over after Bengt at loading service!

Allan has been working with Bengt since 1991 and performed his first loading service about 15 years ago. He has also been working with the construction of loading machines. Altogether, Allan has great experience in the field, which will make for a smooth transition.

So Allan, what are your expectations when taking over after Bengt?

“Well, I am already quite used to the job, and I look forward to continue meeting all these very nice people at the sites. With about 250 travel days per year, there will now be a bit more ‘office work’. That’s my challenge.”

Of all the countries you have visited over the years, is there any place that has become a favorite?

“The first time I went to China I did not find it very special. But now, after 66 trips to China, I have become really fond of the country. It gets under your skin,” says Allan with a smile.



Allan and Ronnie shaking hands for a positive future

30 years of loading service experience

Bengt Hansson began working for Perstorp AB about 30 years ago. "I was working at a mechanical workshop, when a consultant, K.G. Ifstedt, hired us to manufacture equipment for catalyst production", says Bengt. He was also commissioned to develop a machine that could load the catalysts. After many prototypes, he came up with the principle that is still being used today. At that time, there were only two layers to load. "I started my own workshop in 1991 and we continued manufacturing loading machines," says Bengt. "Allan Larsen worked with me and he continued the development of today's 8-layer machines."

All trips have been special

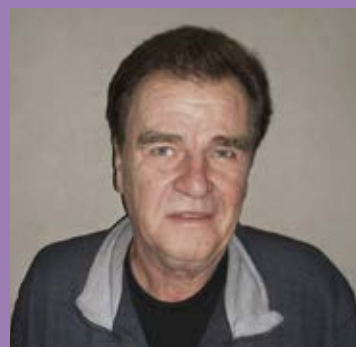
In the 1990s Mats Börjeson worked with loading service, mostly in the US.

"My loading premiere was with Mats at Woodchem in Belgium," recalls Bengt, "and my first trip outside of Europe was to Canada. Then followed the US, South America, Asia and Africa. All trips around the world have been special, and Anne Rundström-Eliasson, Sales & Planning Coordinator, has always been our support and problem solver back at the office in Sweden."

Though difficult to single out a favorite, Bengt says that Turkey is always nice to visit thanks to Hasan Gökman's great hospitality every time. "Now when Allan is taking over, I may take on one or two loading services to wind down. After that I will just relax and maybe travel to some countries that I have never visited before," Bengt says.

Bengt's best advice for an efficient loading service:

Ensure that the reactor is completely emptied and brushed, that inspection material is at hand, and above all, that there is competent and motivated staff attending the loading.



Conferences that we have participated in during the last six months;

1. 9th Annual MeOH Week 2014 – Growing Methanol Economy, Hong Kong, Jun 5-6
2. The 13th China Board Industry Seminar, China, Oct 15-17
3. Wood Adhesives and Feedstock 2014, Bali, Oct 16-17
4. 2014 3rd Formaldehyde Market & Technology Seminar, Tianjin, Oct 22-24
5. Methanol IHS, Amsterdam, Oct 23-24
6. IMPCA 2014, Singapore, Nov 5-6
7. 2014 China Formaldehyde Association Technology Seminar, China, Nov 23-25
8. Adhesive Market, Kuala Lumpur, Dec 11-13, (not yet decided)

JM Formox participates in conferences 2014

This autumn we have actively participated in a number of external conferences focusing on methanol, resins for wood and the formaldehyde market. The reason for our participation is to strengthen awareness of, and inform about, JM Formox's capability and capacity for providing formaldehyde technology. The conferences this year focused mainly on regions of Asia, but we also participated at a methanol conference in Amsterdam.

Continued importance

The overall conclusion from the conferences is that formaldehyde will certainly continue to play a significant role as a basic raw material used in intermediate chemicals in polymers, fibers, coatings, resins etc. The driver will continue to be formaldehyde demand for resins in the wood and chemical segments with strong correlation to GDP. To be present at conferences like the wood resins conferences is to be well-informed of new potential downstream for the use of formaldehyde as well as to understand new regulations and legislation. Further topics of great interest are the development of the methanol market globally as well as regionally. Will China

continue the intensive development of coal to methanol and what impact will the shale gas in US have on the supply and demand of methanol and will additional down streams products be developed. These and many more topics are of great interest to stay ahead of in order to be prepared meeting future customer needs and adopt to new market situations.

BY



Lars-Olle Andersson,
Business Manager,
JM Formox AB

JM Formox' first plant customer celebrates 50

Foresa - our first plant customer!



Back in the days! Foresa attending training in Perstorp, Sweden in 1965.

From left (unfortunately we don't have all names); unknown, Gunnar Hermansson, José Guillemot, Gunnar Persson, Max Henning, unknown, Sten-Åke Bergstrand, José Abalo Friero, Bertil Hedberg, Felipe Barros Martinez, Erik Kristersson, Finn Oveeras, Elisardo Pereir Gandara



Foresa, Plant no 1, Caldas de Reis, Spain.

JM Formox sold its first plant to the Spanish company, Foresa, and Max Henning, who worked at JM Formox for the better part of four decades, was amongst other things in charge of the training back then: "It was the first plant sold outside Sweden and it was built in Caldas de Reis, Spain, in 1965," says Max joyfully, recalling how he was glad to show a few Foresa training participants the sights of southern Sweden from his two-stroke engine Saab from 1960.

Today Foresa has 6 (5 active) Formox plants in Spain, Portugal and France. This year the company, now a member of the Finsa-group, celebrates its 50th anniversary and we would like to congratulate them:

"We are delighted to have Foresa as a customer and we wish them continued success", says Mårten Olausson, General Manager, JM Formox.

BY



Anna Rundblad,
Communication Coordinator,
JM Formox AB

Expected demand of formaldehyde in board and panel industry

Formaldehyde makes an important contribution to the wood industry, which accounts for more than 50% of all formaldehyde consumption worldwide. Most of the formaldehyde is used in the form of panel-binders, adhesives such as urea-formaldehyde, and phenol formaldehyde. However, it's also consumed in general purpose glues for furniture and other assembly operations as well as in overlays in laminates, films and foils.

FA industry in the wood industry

Today panel production is growing globally once again and global capacity is over 350 million m³ with an estimated split between the different board types as follows: Plywood and Particle dominating with each 30-35%, MDF 25%, OSB 8%. The average consumption of formaldehyde varies largely between the types of board as well; Plywood and OSB are in the range of 20-40 tons per 1000 m³ of board produced, whereas Particleboard and MDF consume 70-100 tons for the same amount of production.

Global and regional market drivers in the wood segment

Formaldehyde plays a significant role as one of the basic raw materials used in typical urea-, phenol- and melamin formaldehyde resins. Urea resins dominate and account for 75%.

Formaldehyde is consumed not only as a panel binder as in adhesives, but also as an overlay; laminates (high and low pressure). It's also used for furniture and other assembly operations. Thus, formaldehyde-based products are still the dominating adhesive system and by far

the most important in volume. However, formaldehyde's role will depend on the resins industry's ability to deliver adhesive systems able to meet stricter emission standards.

The factors driving the future demand of FA are likely to be much the same as over the last decades. Real wood will be replaced by engineered wood and these industries will continue to need formaldehyde as there are no real practical alternatives in most areas. In many regions new demand is being created and in these situations GDP is the main driver; greater growth per capita means more homes, furniture etc. The current assumption leads to a projection of 350-400 million m³ of total board and panel production by 2020. Another factor in calculating the resin and hence the formaldehyde demand is the need to first estimate the split between the various panel products. A number of assumptions are possible.

The demand for panel products will continue to increase in the coming years. Not only due to the shortage of real wood, but also due to the fact that panel products

can take full advantage of modern building and furniture assembly techniques. Thus, panel products are more consistent, reliable and more economical than the alternatives.

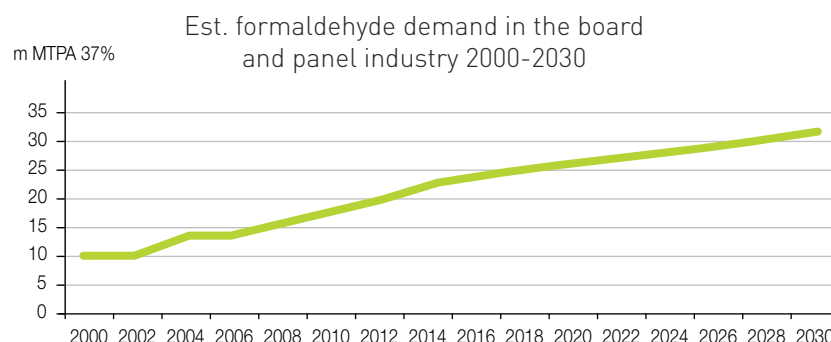
Tighter emission standards

Formaldehyde's future in the wood industry will depend much on the resin industry's ability to deliver adhesive systems able to meet tighter emission standards. An example is the Green Board Procurement Standard from China Furniture Association that is being drafted. The goal is to raise the emission standard to E0. However, there is no reason to believe that formaldehyde will not match this task. Thus, it is assumed that these systems will continue to dominate over the time frame of the projected forecasts.

BY



Lars-Olle Andersson,
Business Manager,
JM Formox AB



Update of Labels and Safety Data Sheets (SDS)

As some of you may already have noticed, we have updated the labels on our drums, as well as our Safety Data Sheets (SDS), from September of this year. The reason for the update is primarily to fulfill the legislative requirements that will be applicable in Europe from June 1, 2015 for mixtures (which our KH catalyst is), but also due to the adjusting of label requirements in other countries. In order to meet the deadline, we have already updated both our labels and our Safety Data Sheets thanks to the tremendous support provided by the Johnson Matthey Process Technologies Regulatory Affairs team headed by Dr Elaine McColgan, Global Regulatory Affairs Manager.

CLP and GHS

The legislative requirements mentioned above refer to CLP (Classification, Labeling and Packaging) Regulation (CE) 1272/2008, which aligns previous EU legislation with the GHS (Globally Harmonized System of Classification and Labeling of Chemicals). GHS is a United Nations system for identifying hazardous chemicals and informing users about these hazards through standard symbols and phrases on packaging labels and in safety data sheets.

GHS has been adopted by many countries around the world and is now also used as the basis for international and national transport regulations for dangerous goods. All labels will be required to have pictograms, a signal word, hazard and precautionary statements, the product identifier, and supplier identification. Its main objectives are to facilitate international trade in chemicals and to maintain the existing level of protection of human health and environment.

An intense period, but now it's done

Updating the labels took place during an intense period this summer and included the commissioning of new printers, training on how to use them, and relabeling thousands of drums displaying the old labels. Our production people put a lot of effort into it in order to meet the deadline – which they did! This means we are already now complying with the regulation that takes effect June 1, 2015.

To the upper right you can see the old label, together with the multi-language label, which from June 1, 2015 is no longer valid in the EU. The bottom right picture shows the updated label now in use.

Thanks to the support and cooperation from the Process Technologies Regulatory Affairs team, JM Formox is well prepared to always be in compliance

with prevailing legislation.

For more information regarding CLP and GHS, please check out these informative links:

CLP: <https://osha.europa.eu/en/topics/ds/clp-classification-labelling-and-packaging-of-substances-and-mixtures>

GHS: http://www.unece.org/trans/danger/publi/ghs/ghs_welcome_e.html

BY



Ronnie Ljungbäck, Global Market Manager – Catalysts, JM Formox AB





Upcoming seminars

You are very welcome to participate in the next major formaldehyde seminar! It will take place in Sweden, Europe, in the beginning of May 2015. More information will be mailed to you in

January. We are also planning a formaldehyde seminar in China during the autumn of 2015. More information will be published on our website.

Mo update

When writing the update for the previous issue, I expressed expectations that the molybdenum price's upward move to above 14 USD/lb was temporary and that it should fall back again quite soon. The price actually continued to rise, but since the end of May it has slowly dropped and gradually it reached a more anticipated price level around 9-10 USD/lb. No one could foresee the unexpected move upwards in April-May to almost USD 15/lb at its peak, a level not experienced since July 2011. This was followed by a dip to USD 9.20/lb which, except for two occasions last year, in July and October, we have not seen since May 2009.

The reason for the increase according to different sources should be attributed to destocking in the end of 2013 and an increase in demand from

the steel mills, as well as a temporary shortage in the market in April-June. As reported in the previous issue, the outlook appeared less optimistic going forward into 2015 with Mo expected to stay within the 9-15 USD/lb range. In recent statements by various analysts this has been adjusted downwards to 8-11 USD/lb. At present we see no signs of any changes either in the shorter or longer term.

Recently there was an announcement from China (the largest producer of molybdenum) stating that export quotas for four other metals would remain unchanged during 2015. Molybdenum, however, was not mentioned, further strengthening the belief that the price of molybdenum, at least in the coming year, will not catch up. On the other hand, there are a lot of projects on decreasing the weights of cars, where

high strength steels are involved, and if these exchange projects are successful, it will drive demand for molybdenum upwards.

At JM Formox we strive to maintain reasonably stable net prices regardless of novel usage scenarios or other impacts to the global flow of molybdenum. Your efforts to return spent catalyst in good condition according to our specifications, as well as our efficient catalyst recycling system, help to make this possible!

BY



Ronnie Ljungbäck, Global Market Manager – Catalysts, JM Formox AB

New...



Anders Lantz,
Electrician

...& left

Ingvar Linderberth, Mechanical Engineer
Anders Malmberg, Regional Sales Manager

We are very glad to have had Anders and Ingvar as our colleagues and wish them the best of luck in their coming challenges.

JM Formox trainings!

1 In June nine persons from Chongqing Changfeng Chemical Industry Co., Ltd came to Perstorp for training in formaldehyde plant operation. During a beautiful summer week there were many good discussions regarding all parts of formaldehyde plant operations. Their plant is due to start up in December so the knowledge will soon be put to good use.

2 About 20 persons from Fars chemical industries company participated in training for their formaldehyde/UFC plant which was held at site in the sunny Shiraz in Iran. There were many interesting lectures and questions and Fars has already put the learning from the training to good use since their plant is commissioned and in operation.

3 A team of operators from Egger went through a training course at the site of their new JM Formox formaldehyde/UFC plant, near the picturesque town Hexham in the United Kingdom. A small team from Egger's site in Romania with several years of experience from a JM Formox plant was also present.

4 During three intense days between 18-20 November Formox arranged a Formaldehyde Process Training Course in a sunny Rayong in Thailand. In total 16 formaldehyde producers with more than 37 participants from 7 countries attended the training course.

5 In November a customized training was held in Louisiana, US for a dedicated team of engineers from Arclin. The focus was on plant operating optimization. The participants came from different plant sites and many good discussions were heard.



A formaldehyde magazine from JM Formox

The newsletter Informally Speaking aims to provide information about formaldehyde in an informal forum and is published twice annually by JM Formox for its customers and contacts in the formaldehyde business. The information included herein is part of our customer service and in no way entails or implies any undertakings, legal responsibilities or liabilities.



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