

November 2011

CONTENTS

Page 1-2:

[Second Dip?
AVK GUMMI believes
in the Future!](#)

[AVK GUMMI
-Competences and Know-how](#)

Page 2-3:

[High-Fluor Rubber
Qualities](#)

Page 3-4:

[New Silicone
Mixing Facilities](#)

[Environmental
Assessment of
AVK GUMMI](#)

[New Machine Opens
up New Possibilities](#)

News

- [China Foodtech 2011](#)

For further information please see:
www.avkgummi.com

Second dip? AVK GUMMI believes in the Future!



Peter Lorentzen, Managing Director, and Anders Guldbæk Christensen, Sales and Marketing Director, in the new silicone mixing facilities.

Like many other European companies AVK GUMMI is experiencing a period of economic slowdown compared to the same time last year. "Is this slowdown the result of a general drop in demand from our end users, or is it due to all the negative media coverage and political talk about the financial crisis in Southern Europe?" asks Peter Lorentzen, Managing Director.

"I am certain that all this negativity has had a great effect on the slowdown. However, many companies also focus on an optimisation of the stock levels during a time like this. I believe that the slowdown will be short-lived compared to the economic crisis in 2008/2009," says Peter Lorentzen.

We do as we did in 2008 where we used the reduced activity level to optimise one of our production areas in order to be prepared for the future. We have decided to extend the mixing plant with another mixer line. This project will involve heavy investments in new machines as well as an extension of the factory buildings. The new mixer line will primarily be used for mixing bright colours. We expect the mixing line to be

ready in the autumn of 2012.

Apart from investing in new technology and increased production capacity AVK GUMMI focuses on ensuring that we live up to our core values: Quality, Credibility, Co-operation, Professionalism and Innovation. That way our customers may see that we "deliver on time", "deliver the right quality", "are flexible" and "are a competent co-operative partner in development projects".

"It is of great importance for AVK GUMMI always to focus on our values as this is what boosts the competitiveness of AVK GUMMI compared to the manufacturers in the low labour cost countries. Our unique quality and high service level makes it possible for us to compete against our competitors in the global market," says Anders Guldbæk Christensen, Sales and Marketing Director.

"We can guarantee that AVK GUMMI will have the necessary production capacity and also have access to the required raw materials when the market situation changes, and the demand from our customers increases again," says the management of AVK GUMMI.

AVK GUMMI

- Competences and Know-how

The vision of AVK GUMMI is to generate value for our partners through a sustainable, qualitative and target-oriented development. How is this realised, and what do our customers say about AVK GUMMI?

Newsletter has spoken with Mr. Marian Watzlaw, Quality Manager at

GEA Tuchenhausen GmbH. Through many years, AVK GUMMI and GEA Tuchenhausen have built up a solid partnership based on innovation, quality and professionalism, and together the two companies have worked on many development projects and solved many issues. This is also seen from below summary of the interview. At

GEA Tuchenhausen confidentiality, quality, innovation and flexibility are some of the most important key words in the co-operation with AVK GUMMI. And in all of these areas AVK GUMMI shows a high degree of expertise and professionalism.

“With respect to the quality of the rubber items, we cannot really point out anything that would bring about a complaint. We hardly have any complaints from the end users of our



Mr. Marian Watzlaw, Quality Manager, GEA Tuchenhausen

products, and if a customer has a question that requires clarification by AVK GUMMI, our enquiry is answered satisfactorily and without delay,” says Marian Watzlaw.

All in all, we always receive competent and professional advice from AVK GUMMI, and the information flow works to our full satisfaction. We are given quick feedback in connection with the development of new materials and rubber gaskets, and the know-how that lies behind the actual production of the items is unique,” says Marian Watzlaw and continues:

“AVK GUMMI shows great innovative power, e.g. in connection with gaskets in EPDM materials, and in our line of business, AVK GUMMI is undoubtedly one of the leading suppliers of rubber solutions.”

All rubber qualities produced by AVK GUMMI have the right approvals, including FDA, KTW and 3-A Sanitary Standards. Furthermore, all the compounds live up to the legislation and

standards of each individual country with respect to food, drinking water and healthcare products. AVK GUMMI takes great pride in having the right quality and environmental certifications, and as Marian Watzlaw says, it is important that AVK GUMMI has a reliable and updated management system, which is also implemented in practice. GEA Tuchenhausen sees an increasing environmental awareness amongst the customers and end users, and a supplier without the right certifications would not at all be an option.

“We can clearly feel that AVK GUMMI focuses on delivery performance, and that the tendency is still going in the right direction. Finally, AVK GUMMI always shows a high degree of flexibility, both in relation to changes to orders already submitted and in relation to new as well as existing development projects,” concludes Marian Watzlaw.

GEA Tuchenhausen and AVK GUMMI will continue the good co-operation, and have several ongoing development projects.

High-Fluor Rubber Qualities

The term fluoropolymeric elastomer covers a number of very different elastomers for which the common denominator is the element fluor. Fluor is primarily used in order to achieve good chemical resistance or high heat stability. In short, the higher the concentration of fluor, the higher the chemical and temperature resistance.

The polymer is made from the assembly of many different monomer units. Depending on the composition and on the vulcanisation system used,

the material may be designed so that it fulfils specific requirements within the healthcare, food and drinking water industry.

Fluor rubber is also used widely in connection with technical applications – especially when the rubber is in contact with fuels.

Chemical resistance

AVK GUMMI has developed a number of high-fluor rubber qualities for different applications: FIF, FXF and FLT. Figure 1 shows a comparison of our most widely

used compound for contact with food and healthcare, FBF.

FXF is remarkable for its very good chemical resistance towards all relevant solutions in the area of healthcare. As shown in figure 2, this rubber quality is also very suitable for applications within the food industry – not least for fruit concentrates.

As is also seen in figure 2, EAF-75, our EPDM rubber for food and healthcare, has a very low volume swell and is therefore also very suitable for fruit concentrates. However, there may be other chemicals, such as certain oils or ethers, in the solution that speak in favour of using fluor rubber.

Low temperature resistance

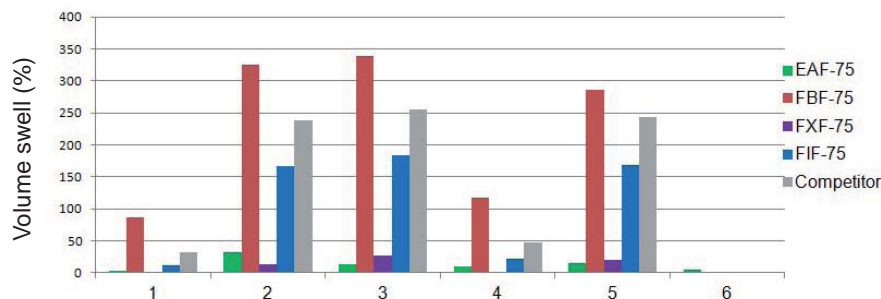
The disadvantage of most fluor rubber qualities is a relatively poor cold flexibility. In order to avoid this problem, AVK GUMMI has developed the FIF-series for food and healthcare and the FLT rubber quality for technical applications. Even though the FIF-series does not quite match the EAF-series, we have achieved far better sealing properties with FIF rubber than with fluor rubber in general when the rubber is used for applications with large temperature variations (figure 3).

Rubber Quality		FBF	FIF	FXF	FLT
Approvals		FDA, 3A (18-03), USP Class VI	FDA, 3A (18-03), USP Class VI	FDA, 3A (18-03), USP Class VI	Technical grade
Service temperature		Normal temperature	Low temperature	Normal temperature	Low temperature
Acetone	Ketones	1	1	3	1
Formaldehyde	Aldehydes	1	1	2	1
Ethylene	Alkenes	4	4	4	4
Ethane	Alkanes	4	4	4	4
Acetylene	Alkynes	4	4	4	4
Ethanol	Alcohols	3	4	4	4
Toluene	Aromatics	3	4	4	4

Fig. 1 Chemical resistance (4=Insignificant influence/3=Minor influence/2=Medium influence/1=considerable influence).

Chemical degradation

Fruit esters, 168 hrs, 23 °C



Fruit esters:					
1	2	3	4	5	6
Benzyl Acetate	Isoamyl acetate	Isopropyl acetate	Methyl benzoate	Propyl acetate	Benzyl benzoate
Apple, pear, jasmin	Pear, banana	Fruit	Orchid	Pear	Fruit, flower

Fig. 2 Fruit esters.

On the technical front we have developed the FLT-series as a supplement to FFM-fluor rubber compounds for chainsaws, etc. The improved cold flexibility is relevant in Siberia and other areas with extreme winters. As appears from figure 3, FIF-75 is on the same level as EAF-75, which is very unusual for fluor rubber compounds.

Summary

If a fluor rubber is required, AVK GUMMI offers unique materials, but really it all starts with the question:

Which material would be the best choice seen in relation to function, legislation and the surrounding environment? This is one of the core competences

Cold flexibility

Momentary compression set, 4 °C

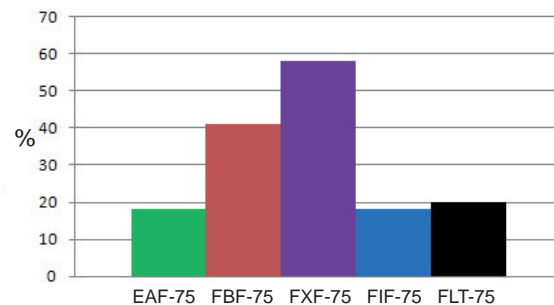


Fig. 3 Cold flexibility.

of AVK GUMMI. Often a dialogue with a customer ends up with a different choice of material than the original choice – not only offering the required function but often even also reducing the price of the item.

There are many advantages when using fluor rubber, but it is necessary to be aware of certain limitations compared to EPDM and HNBR rubber, e.g. wear resistance, resistance towards a number of cleaning agents as well as the low temperature properties.

Furthermore, fluor rubber has a number of unique properties as shown above.

AVK GUMMI offers rubber solutions with the very best properties for use in contact with food, healthcare, drinking water as well as technical applications.

New Silicone Mixing Facilities

In recent years we have experienced an increased demand for silicone rubber items. Together with the demands of our customers for a continuously improved quality and even better properties of the items, this demand has led to the establishment of separate silicone mixing facilities that are exclusively used for the production of high-qualitative silicone items for the healthcare industry, among others.

“The background for the new silicone mixing facilities has to a great extent been a wish to achieve an exceptionally high silicone rubber quality. Even though the quality of the rubber was already high, the new facilities gave us a possibility to improve the quality even further, not least batch to batch variation,” says Kresten Krogh, Production Engineering Manager.

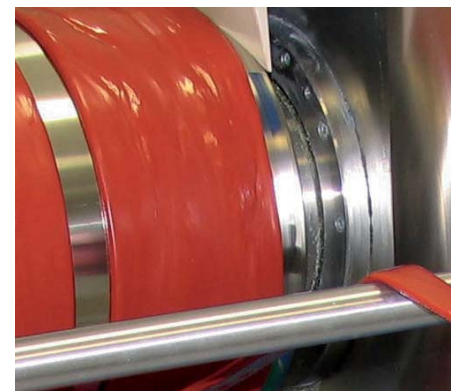
“With our own silicone mixing facilities we are able to be even more flexible and realise the many innovative solutions that we have created, especially in relation to QCF-75 for food and healthcare applications.

Furthermore, with the new facilities we can develop our own customised compounds for the healthcare industry where silicone is used widely,” says Kresten Krogh and continues:

“Within the healthcare industry the demands concerning precision, quality and documentation are extremely high. Therefore, the cleanliness in the mixing facilities is of utmost importance. Consequently, we have established a cleanroom with a pressure above the atmosphere, which ensures the cleanliness and at the same time prevents dust from the rest of the

production facilities from getting into the cleanroom.”

The new silicone mixing facilities are thus very similar to the healthcare production facilities at AVK GUMMI. The two units have been built around the same principles and therefore live up to



The rubber is packed in strips.

the same standards and requirements.

This means that the rubber produced in the silicone mixing facilities may be used in the healthcare production without further processing.

As always, each charge undergoes

rhological control, and through our charge number system we are able to have full traceability of all our rubber compounds. "This makes it possible for us to provide our customers with rubber components of a continuously high quality and at the agreed time of delivery," concludes Kresten Krogh.

Environmental Assessment of AVK GUMMI

As always, AVK GUMMI focuses on environmental and occupational health and safety matters. Therefore, regular work place and safety evaluations are carried out, and as part of this, the authorities have just performed an environmental assessment of AVK GUMMI.

"The main purpose of this assessment is to prevent pollution and make sure that all applicable rules and regulations are observed. Once again, AVK GUMMI was placed in category No. 1, which includes companies that are at the forefront of development as regards environmental work," says Tage Bergstrøm, Quality and Environmental Manager. "We are proud of this position,

Environmental Assessment by the Authorities
(The position of AVK GUMMI is marked in green)

Methodology and Information	High	3	1	1
	Middle	3	2	1
	Low	3	2	2
		Low	Middle	High
		Law-abidingness		

which supports our strategy of always being in the forefront of development in environmental as well as occupational health and safety matters."

New Machine Opens up New Possibilities

With the new 3,800 T compression moulding machine at AVK Sealing Technology in China we can produce items of much larger dimensions than previously. We have produced and tested the first items that all fulfil the required standards and approvals.

"Until now, we have produced gaskets with a diameter of 1,200 mm. The dimensions of the heating plates of the new machine are 2,000 x 2,200 mm, which means that we are able to produce items with a diameter of up to 1,800 mm. Therefore, the machine is particularly suited for the production of large scale gaskets for heat exchangers, etc.," says Erik Cornelius, Technical Manager, and continues:

"In about three weeks time we will test run a rubber-metal item for a valve in a 1,600 x 1,600 mm mould where we expect to use about 60 litres of rubber for each item. This is one of the smaller items in a series where the largest item

is a 1,200 mm valve component.

With a clamping force of 3,800 tonnes it is precisely with the purpose of producing such large scale items that AVK GUMMI has invested in the machine. The fact that the machine also opens up a number of other opportunities is a great advantage."

It only takes one man to operate the machine, which thus enables us to maintain a uniform and efficient production.



The new 3,800 tonnes compression moulding machine in China.

NEWS

China Foodtech 2011



During the period 30 November - 2 December 2011 AVK Sealing Technology participates as an exhibitor at China Foodtech 2011. China International Food Processing and Packaging Machinery Exhibition is one of the leading industrial fairs in China in the field of food and beverages. Since its establishment in 1989 the fair has brought together many visitors and exhibitors from all over the world.

More than 600 exhibitors are expected to participate at the Foodtech 2011 fair. AVK Sealing Technology thus sees an excellent opportunity to present a number of products and to share knowledge and know-how with existing as well as potential customers. Sales representatives and technicians both from AVK Sealing Technology and from AVK GUMMI are present at the stand.

You can find AVK Sealing Technology in hall 3, stand No. 3316.

NEWSLETTER

Published by:

AVK GUMMI A/S
Mosegaardsvej 1
DK-8670 Laasby
Tel.: + 45 86 95 13 11
Fax: + 45 86 95 10 85

avk@avkgummi.dk
www.avkgummi.com

Sales: Carsten Bach Jensen
Technical service: Erik Cornelius
Logistics: Sune Krøis
Quality: Tage Bergstrøm
Editor: Anne-Kristina Lowes