

SEALS

TECHNOLOGY



0122

Magazine for customers and partners | 客户杂志

FOCUS ON MATERIALS

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EDITORIAL

Dear readers,

in the light of the world political events concerning the conflict between Russia and the Ukraine, it is not easy to focus on day-to-day business, production, or product development issues. Nevertheless, even during these difficult times, we are committed both to our employees and to our customers and continue to work on our projects as far as possible. Product improvement, development of new processes and the optimization of existing procedures have meanwhile become daily business at Seal Maker. Over the last two decades, we have succeeded in creating a culture of innovation within the company, and we are very proud about it! By promoting individual creativity and combining it with mutual trust and the appropriate scope for action, we have succeeded in analysing and improving even well-functioning processes. The ability to accept constructive criticism, both internally and externally, supports procedures as well as results.

A lot has happened recently. The extension of our building was finally completed and the new polyurethane production was put into operation. Admittedly, not everything went according to plan. Poor availability of building materials, overloaded suppliers and Covid-related staff shortages have repeatedly confronted us with challenges. Now, that practically everything has been completed and the new production has been successfully commissioned, we are very confident that we can quickly offer our customers the usual service and the short delivery times of the past, provided that the materials will be available, what leads to the next point I would like to talk about.

In this issue you will find an interesting interview, on the one hand with our Head of Sales Alexander Haspel and on the other hand with our Plant Manager Martin Süß (responsible for production and procurement) about the challenges of the last months and their expectations for the near future. Both report directly on what's going on when it comes to managing high backlogs and incoming orders with long delivery times and poor availability. I would like to take this opportunity to thank you, our customers, for your trust, but also for your patience and willingness to compromise. Without your understanding, everything would have been even more difficult during those challenging times.

We also report on developments in warehousing and logistics and look behind the scenes of processes involved in the development of a software update.

Another part of this issue provides detailed information on materials used in the food industry, special materials in general and the continuously exciting topic of REACH.

I hope to offer you another interesting issue with our new *SEALS Technology 01/22* and wish you prospering business and all of us more stability in the further economic and political development of 2022.

With optimistic regards

Johann Glocknitzer

尊敬的读者朋友们，

目前世界关注的焦点都在俄乌冲突的政治事件，关注日常商业、生产和产品开发问题变得不那么容易。尽管如此，即使在目前的困难时期，我们仍然致力于为我们的员工和客户提供服务，并尽可能继续致力于我们的产品开发项目。一直以来，产品改进、新工艺开发和现有工艺优化已成为Seal Maker的日常工作。在过去的二十年里，我们成功地在公司内部形成了一种“创新文化”，为此我们深感自豪！我们鼓励个人创新，并结合团队协作，诚信互利，由此我们成功地改进了各项流程并运行顺畅。同时，我们接受内部和外部建设性批评意见，并加以改进，也收获良多。

最近公司发生了许多大事。我们大楼的扩建工程终于完工，新的聚氨酯生产线也投入使用。诚然，并非一切都按计划顺利进行，建筑材料的供应不足，谈好的供应商的缺席，以及与新冠疫情相关的施工人员短缺，使我们的工程一再面临挑战。现在，所有的工程都已经完工，新生产线也已经成功投产。我们非常有信心，可以迅速为我们的客户提供日常服务，并缩短交货时间，当然前提是我们有足够的生产用原材料，这也将引出我想谈的下一点。

在本期中，您将看到一个有趣的采访，一面采访我们的销售经理 Alexander Haspel，另一面采访我们的运营经理 Martin Süß（负责生产和采购），了解过去几个月公司面临的挑战以及他们对未来的期望。两者都直接谈到了过去几个月订单量大，交货期长，库存少等情况。我想借此机会感谢你们，作为我们的客户，感谢你们的信任，也感谢你们的耐心与和合作。没有您的理解，在那些充满挑战的时刻，一切都会变得更加困难。

本期杂志还介绍了我们仓储和物流方面的进展，并回顾了软件更新开发过程的一系列幕后情况。

本期的另一部分详细介绍了食品工业中使用的材料、一般的特殊材料以及热点主题 REACH。

希望新一期杂志可以给您带来一些有用的信息。祝您生意兴隆，我们所有人在2022年的政治经济动荡中能平稳度过。

此致

Johann Glocknitzer



SML update

SML UPDATE – A LOOK BEHIND THE SCENES

In order to provide Seal Maker's customers with the best tools for their seal production, software updates for the *SML* lathes are being published once or twice a year. Feedback from users, reports from service technicians, as well as suggestions from our own production department can be particularly used to derive ideas that are included in current development projects.

Basically, two Seal Maker departments are involved in the development of *SML-updates*. On the one hand, our software developers are responsible for issues such as setup logic, login, simulations and the graphical user interface. The *CNC development department* focuses on topics such as NC codes, tools, profiles, parameters as well as on the general production process for each profile.

FROM THE IDEA TO THE FINISHED UPDATE

Each *SML-update* is initiated by a kick-off meeting of the engineering, sales, product management seals and software development departments. Various topics and ideas will be discussed in the course of this meeting. The agenda includes the following questions: Which new profiles should be integrated? What software improvements are planned? Which parameters will be adapted? And finally, what new features do our users need?

The individual departments will then start with the implementation. Immediately after its completion an intensive testing phase will be started.

1-2-3 TESTING

T1 The update will be thoroughly tested by our software developers.

T2 The *SML-update* will first be rolled out in our own seal production. Possible bugs will be reported directly to the responsible project managers and corrected immediately.

T3 Further testing will be carried out by our service technicians. Here the functionality of the update will be tested focusing on the user's point of view.

The update will only be released and published for Seal Maker's customers after completion of all those test phases.

Have you already installed the latest update on your machine PC?
If not, you will find the latest information here: www.seal-maker.com

SML升级- 看一看幕后

为了使Seal Maker的设备客户拥有最佳的设备体验，*SML*软件更新每年发布一到两次。用户的反馈、服务技术人员的服务报告，以及我们自己生产部门的建议，都会被用于优化当前的更新项目。

基本上，*SML*软件更新的开发涉及两个部门。一个是我们的软件开发部门，负责设置逻辑、登录、模拟和图形用户界面等问题。还有一个是*CNC*开发部门，关注NC代码、刀具、外形、参数等主题，以及每个程序的一般生产过程。

从想法到实现升级

每次*SML*软件更新都由工程、销售、产品管理和软件开发部门共同开会发起。会议将讨论各种议题和想法。议程包括以下问题：应该整合哪些新程序？计划进行哪些软件改进？将调整哪些参数？以及我们的用户需要什么新功能？

然后，各个部门分别行动开始实施各自的任務。任务完成后，我们将立即开始密集测试阶段。

1-2-3测试

T1 更新将由我们的软件开发人员进行全面测试

T2 *SML*软件更新将首先在我们自己的设备上生产密封件。可能的错误将直接报告给负责的项目经理，并立即纠正。

T3 进一步的测试将由我们的技术服务团队执行，他们将会以客户的视角来完善升级设备的应用软件。

只有在完成所有这些测试阶段后，才会为Seal Maker的客户发布软件更新。

您已经在客户端下载了最新的软件版本吗？
如果没有，您可以在[此处](http://www.seal-maker.com)找到最新软件版本：www.seal-maker.com

Supply security

INTERVIEW SECURITY OF SUPPLY: MARTIN SÜSS & ALEXANDER HASPEL

Looking at the world economy during the past few months the terms *turbulent* or *volatile* describe it very closely. How did Seal Maker handle the situation from procurement's and production's point of view?

Martin Süss: "Turbulent, yes, that's probably the best way to describe the past months. (laughs.) All in all, we have managed the situation quite well. By taking early steps we were finally able to compensate for possible shortages in some areas. However, it is important not to underestimate how complicated things have become in recent months. If we initiated orders in the past, we received them on the agreed dates. Nowadays, several agreements and consultations are necessary in order to find out when we will receive the goods ordered. It happens repeatedly that suppliers confirm orders but do not indicate a delivery date. – They (note: suppliers), however, are also striving to do everything within their power."

Alexander, certainly also customers were unsure about product availability. How did you experience the last months? What were the main concerns of Seal Maker customers?

Alexander Haspel: "Yes, our customers were, and partly still are, unsettled. Unplanned price increases, availability shortages – these are all huge challenges for organizations. However, by means of our active communication and the flexibility we offer, we were able to bring back a certain routine to our daily business. I also believe that due to the honest relationship with our customers there is a great deal of mutual trust."



Those concerns of customers are, of course, understandable. What steps did Seal Maker take to be a reliable partner for its customers in the sealing industry?

Martin Süss: "In addition to active planning of our demand and existing blanket orders, it is certainly important to mention that we only work together with reliable, long-term suppliers. Constant exchange with our partners is just as important as an ongoing analysis of demand. The most important ingredient, however, is the flexibility of our team. In order to meet the increased demand for semi-finished products, we have increased our staff, our colleagues work in extended shifts, and Saturday shifts are also on schedule. That's really something to be proud of!"

MARTIN SÜSS和ALEXANDER HASPEL有关供应安全的访谈

“动荡”和“不稳定”这两个词非常贴切地描述了过去几个月的世界经济情况，Seal Maker是如何从采购和生产的角度处理这种情况的？

Martin Süss: 是的，过去几个月的情况确实如此。（笑）总而言之，我们很好地控制了整个局面。通过采取早期措施，我们最终能够弥补某些地区可能出现的短缺。然而，重要的是不要低估近几个月来事情的复杂性。如果我们比平常更早下单采购，我们就会在约定的日期收到原料。现在，为了弄清楚我们什么时候能收到所订原料，有必要达成几项协议并进行磋商。我们与供应商反复确认订单，但不指明交货日期，然而，他们（注：供应商）也在努力达成协议。

Alexander, 当然，客户也不确定产品的时效性。你最近几个月的经历如何？Seal Maker客户的主要担忧是什么？

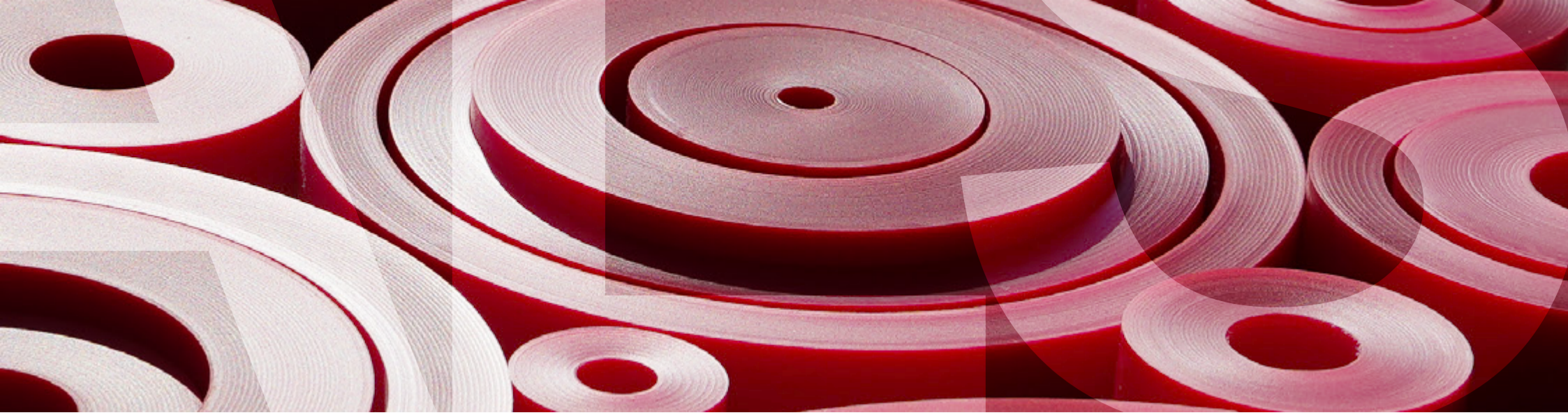
Alexander Haspel: 是的，我们的客户过去是，现在部分仍然是不稳定的。计划外的价格上涨、产品短缺——这些都是企业面临的巨大挑战。然而，通过我们积极的沟通和采取措施的灵活性，我们能够把事情带回正轨。还有一点，就是我们与客户之间的相互信任，双方都保持最大限度的诚信。



from left: Alexander Haspel (Head of Sales) & Martin Süss (Plant Manager)

当然，客户的这些担忧是可以理解的。Seal Maker采取了哪些措施来成为密封行业客户的可靠合作伙伴？

Martin Süss: 除了积极规划我们的需求和现有的一揽子订单外，我们只与可靠的长期供应商合作，这一点当然很重要。与合作伙伴的持续交流与持续的需求分析同样重要。然而，最重要的因素是我们团队的灵活性。为了满足对半成品日益增长的需求，我们增加了员工，我们的同事延长了轮班，周六也按计划轮班。我们对此感到骄傲！



And how about sales?

Alexander Haspel: “No doubt, the sales department depends on the general conditions that Martin and his colleagues are able to provide. I am convinced, however, that the issue is being dealt with by the right people. In sales we try to react as flexibly as possible to customer wishes, offer alternatives or also define or split the delivery dates in agreement with our customers, so that urgent goods are available for our customers faster than the classical stock articles. But the most important thing is that we keep the communication going and inform customers about changes. Unfortunately, many things are currently not in the sphere of influence of Seal Maker.”

销售情况怎么样？

Alexander Haspel: 毫无疑问，销售部门取决于Martin和他的同事所能提供的服务。然而，我相信，这个问题交给Martin和他的团队是合适的。在销售中，我们尽可能灵活地响应客户的需求，提供替代方案，或与客户协商确定分批交货日期，以便客户可以从库存商品中更快地获得他们急需的商品。但最重要的是，我们始终与客户保持沟通，并告知客户交货时间的变化。然而，还是有很多情况是Seal Maker无法控制的。



The whole world had hoped that things would relax in spring/summer 2022. Forecasts of decreasing COVID19 infections and the opening of borders to business travelling would have pointed in that direction. But the last few weeks have been dominated by the terrible headlines of the Russian-Ukrainian conflict. What impacts for Seal Maker do you expect?

Alexander Haspel: “Well, unfortunately, the first effects have already cropped up. Prices, in particular, will rise again. Even if we as Seal Maker only pass on the essentials to our customers, unfortunately we cannot guarantee price stability in the current situation. So we will face similar challenges as we did in 2021.”

全世界都希望2022年春夏时节一切都会恢复正常。新冠病毒感染的减少和逐渐恢复的商务旅行开放边境都朝着这一预期。但过去几周，俄罗斯和乌克兰冲突的新闻占据了头条。你预计Seal Maker会受到什么影响？

Alexander Haspel: 不幸的是，俄乌战争的影响已经出现了。尤其是产品价格将再次上涨。即使我们只将必要成本转嫁给我们的客户，很不幸，在目前的情况下，我们无法保证价格稳定。因此，我们将面临类似于2021所面临的挑战。

Martin Süß: “I can only agree with that. We also expect shortages of material availability. Nevertheless, we are in constant exchange with our suppliers and try to negotiate price increases with sufficient lead time - also in the sense of our customers. Of course, we also strive to offer short-term material alternatives. But I am increasingly irritated by the fact that the headlines read almost weekly that large corporations generate record sales and profits. It seems that these are at the expense of small and medium-sized enterprises.”

Martin Süß: 我只能同意这一点。我们还预计材料供应会短缺。尽管如此，我们仍在与供应商进行不断的交流，并试图在保证交货期的前提下价格上涨——这也是我们客户的感受。当然，我们也努力提供短期材料替代品。但我越来越恼火的是，几乎每周都有头条新闻报道大公司创造了创纪录的销售额和利润。看来这些都是以牺牲中小企业为代价的。

What should customers and business partners of Seal Maker do? What would you recommend?

Alexander Haspel: (thoughtful.) “The most important thing is certainly not to panic. I advise each of our customers to make a forecast of their sales, so they can order semi-finished products and other items specifically and will not fall into the trap of building a warehouse for themselves, where they will not need half of it anyway. This would bind resources (time and money) on all sides.

Seal Maker的客户和业务合作伙伴应该做什么？你有什么建议吗？

Alexander Haspel: （思考片刻）最重要的当然是不要惊慌。我建议我们的每一位客户对自己的销售进行预测，这样他们就可以订购合适的半成品和其他产品，而不会落入为自己建造仓库的困境，因为他们无论如何都不需要一半的库存。这将约束各方的资源（时间和金钱）。

I think that if our customers take this advice, we will all have enough goods and alternatives available. My sales team has an open ear for every request and always strives to meet the needs and wishes of our partners.

我认为，如果我们的客户接受这一建议，我们都将有足够的商品和替代品。我的销售团队对每一个需求都持开放态度，并始终努力满足我们合作伙伴的需求和愿望。

We live in a turbulent time, in which it is all the more important to support each other - only in this way we can all end up sitting at the same table and talking constructively about the future.”

我们生活在一个动荡的时代，在这个时代，相互支持变得更加重要——只有这样，我们才能坐在一桌，建设性地谈论未来。

International logistics

Efficient, fast and uncomplicated – these are characteristics describing employees in our *Warehouse & Internal Logistics Department*.

But what is warehouse and internal logistics responsible for? What daily challenges do they face?

Primary aim is to send customer orders – supposed the goods are on stock and desired by the customer – on the same day. To ensure that this intention can be realized, seven colleagues work in a 2-shift model in order to send customer orders as flexibly and as quickly as possible. In addition, Seal Maker also works with several parcel service providers. Thus, customers around the world can work with their preferred carrier.

In order to highlight our sense of service, Seal Maker employees are always striving to fulfill short-term changes of deliveries accordingly. A huge variety of items can lead to some hectic moment, especially at times when parcel services are already on site and waiting for goods.

FACTS 2021

Number of stock movements:	~ 200.000
Processed Delivery Notes (incoming/outgoing):	~ 18.000
Number of parcels sent:	~ 13.500

高效、快速、简单——这些都是我们仓库和内部物流部门员工的特点。

仓库和内部物流负责什么？他们每天都面临哪些挑战？

我们的仓库和内部物流部门主要负责在同一天向客户发送订单——比如货物有库存且客户预定。为了确保这一目标能够实现，七名同事采用两班制工作模式，以便尽可能灵活、快速地向客户发送订单。此外，Seal Maker还与多家快递物流供应商合作。因此，世界各地的客户可以与他们首选的物流运营商合作。

为了突出我们的服务意识，Seal Maker的员工总是努力对短期交付做出快速反应。种类繁多的物品可能会导致一些异常繁忙的时刻，尤其是当快递物流供应商已经在现场等待货物时。

2021年主要数据

出库次数:	~ 200.000
处理发货单数量:	~ 18.000
发送的包裹数量:	~ 13.500



from left: Jürgen Laubner (Department Manager Warehouse) & Christian Hirschmann (Employee)

News from our Warehouse & Internal Logistics department

At the beginning of January, we engaged a new department manager for our warehouse. Together with the warehouse team, some optimizations have already been initiated in order to further improve processes or to re-arrange them completely.

来自于仓库和物流部门的新闻

1月初，我们为仓库聘请了一位新经理。与仓库团队一起，已经启动了一些优化，以进一步改进流程或完全重置流程。

PU manufacturing

The centerpiece of our building's expansion is certainly the new polyurethane production. Even the first few weeks of production have shown that it was the right decision to plan the new production line precisely in advance. In future, customers' wishes and demands will be responded to even more quickly and precisely, in particular regarding the expansion of production possibilities of semi-finished products in the area of large seals.

Further advantages that Seal Maker customers can benefit from:

- Increased availability from stock due to increased production capacities
- Increased flexibility in the production of different dimensions and materials thanks to optimized throughput times

Furthermore, the new production area and the new equipment can optimally meet our internal needs. The light-flooded production hall, for example, offers a lot of space for employees: Ergonomic workplaces, an optimized workflow and many other facilitations.

It is also important, of course, that the new production procedures leave a lower ecological footprint. In the planning and subsequent implementation phase, topics such as heat optimization or lower energy loss were taken into account. Equipment from the existing production is also being used in the new production area. Because the reuse of properly functioning parts/devices also actively contribute to a reduction of environmental pollution.

我们大楼扩建的核心当然是新的聚氨酯生产线。即使是最初几周的生产也表明，新建生产线是一项正确的决定。未来，客户的愿望和需求将得到更快速、更准确的响应，尤其是在扩大大型密封件领域半成品生产的可能性方面。

Seal Maker客户可以从中受益的其他优势:

- 由于生产能力增加，库存大大增加。
- 由于优化了生产时间，提高了不同尺寸和材料生产的灵活性

此外，新的生产区域和新设备可以最大化地满足我们的内部需求。例如，崭新的生产大厅为员工提供了大量空间：符合人体工程学的工作场所、优化的工作流程和许多其他便利设施。

当然，新的生产程序也必须降低生态足迹。在规划和后续实施阶段，考虑了热优化或降低能量损失等主题。新生产区也在使用现有生产设备。功能部件/设备的再利用也有助于减少环境污染。



Team PU manufacturing (Some Employees incl. one of our two Department Managers Viorel Vanatu)

Foodgrade

The food industry puts high demands on the materials used. As a reliable partner, Seal Maker wants to deliver not only the usual high-quality products, but also the corresponding certificates. Particularly in the food sector there are countless rules and regulations, which have to be considered. Seal Maker strives to keep to them by extensive internal and external testing.

The topic of food industry approval has already been treated in an earlier issue of *SEALS Technology* (3/2018). Due to the importance of the topic and for reasons of completeness, you will find all the new information below.

食品工业对所用材料的要求很高。作为您可靠的合作伙伴，Seal Maker不仅希望提供高质量的产品，而且希望提供相应的证书。尤其是在食品行业，有无数的规章制度必须加以考虑。Seal Maker努力通过广泛的内部和外部测试来满足这些要求。

食品行业批准的主题已经在早前一期的《*SEALS Technology*》（2018年3月）中讨论过。由于主题的重要性和完整性，您将在下面找到所有新信息。

THE REGULATIONS / 调整

EU FRAMEWORK REGULATION (EC) NO. 1935/2004

SINGLE REGULATION & OTHER REGULATIONS FOR CERTAIN MATERIALS

Commission regulation (EU) No. 10/2011
Regulation specifically for plastic materials and articles
intended to come into contact with food

NO SPECIFIC MEASURE (REGULATION) OF EU Elastomers & silicones

NATIONAL REGULATIONS

For example: Elastomer Guideline (Drinking Water Ordinance),
KTW, W 270, EN 1186-14

FDA - U.S. FOOD AND DRUGS ADMINISTRATION

TITLE 21- FOOD AND DRUGS PART 177 - Indirect Food Additives, Polymers

21 CFR § 177.1600
Polyethylene resins & Carboxyl modified

21 CFR § 177.1680
Polyurethane resins

21 CFR § 177.2600
Rubber articles intended for repeated use

CHINA NATIONAL FOOD SAFETY STANDARD SYSTEM

GB 4806.1-2016 National Food Safety Standard:
General Safety Requirements on Food Contact Materials and
Articles.

GB 4806.7-2016 National Food Safety Standard:
Plastic materials and articles for food contact use

CORRELATION OF REGULATIONS FOR FOOD MATERIALS

EU

The rules to be observed within the European Union are those of the Framework Regulation *EG 1935/2004*. Here you will find separate directives describing the materials and their essential testing for use in the food industry in detail. The most common regulations are *GMP (Good Manufacturing Practice)*, *EG 2023/2006*, as well as the individual guideline *EU10/2011* for plastics (*plastic materials*). For elastomers, the EU does currently not have any specific directives and therefore no limit values for migration tests.

U.S. – FDA & 3A

The *FDA (U.S. Food and Drugs Administration)* specifications in the food sector are divided into the *Title 21 - Food and Drugs, Part 177 - Indirect Food Additives, Polymers* and, among other things, the corresponding sections for plastics, polyurethanes and elastomer materials.

3A Sanitary Standard Inc. (3A SSI) is an U.S.-based organization that has established hygiene standards and procedures within the dairy and food processing industry. Compliance with the *FDA* regulations is the basic requirement for *3A*. Furthermore, this standard has already been established internationally and is being widely used.

CHINA

Another standard for the use of materials in the food industry is described by the *China National Food Safety Standard System*. The guidelines from China are also divided into various sub-categories, such as the guideline *GB 4806.7-2016*, which includes specifications for plastic materials.

食品行业相关行业标准的调整

欧盟

欧盟内部应遵守的规则是*EC1935/2004*，详细描述食品工业中使用的材料及其基本测试。最常见的法规是*GMP*（良好生产规范），如*2023/2006*，以及塑料（塑料材料）的单独指南*EU10/2011*。对于弹性体，欧盟目前没有任何具体指令，因此没有迁移测试的限值。

美国—FDA & 3A 行业标准

食品部门的*FDA*（美国食品和药品管理局）规范分为标题21——食品和药品，第177部分——间接食品添加剂、聚合物，以及塑料、聚氨酯和弹性体材料的相应章节（章节）。

*3A*卫生标准公司（*3A SSI*）是一家总部位于美国的组织，在乳制品和食品加工行业内制定了卫生标准和程序。遵守*FDA*法规是*3A*的基本要求。此外，该标准已在国际上确立，并正在广泛使用。

中国

中国食品安全国家标准体系描述了食品工业中材料使用的另一个标准。中国的指南也分为不同的子类别，如指南*GB 4806.7-2016*，其中包括塑料材料的规范。



SPECIFICATIONS AND TESTS FOR MATERIALS

The food industry uses a wide variety of international rules, regulations and specifications for the safe use of materials. Migration tests are an essential part of these material tests. In this process, materials are exposed to various substances (*food simulants A, B, C, D1, D2, E*), which are intended to simulate a wide variety of food types such as acid, fatty, alcoholic or even meat and milk products. The aim of the test is to prove that no food can penetrate the material and vice versa, no substances from the material can penetrate the food.

Seal Maker tests foodgrade materials in independent research and testing institutes. The results of these migration tests are evaluated in comprehensive reports and summarized and published on the Seal Maker website under the point *Declaration of Conformity*.

RESISTANCE IN CLEANING PROCESSES

Another important sector in the food industry are cleaning processes. Equipment is regularly exposed to short but intensive cleaning procedures (*CIP - Cleaning in Place*) in order to meet the specified hygiene standards. In the course of these processes, components such as seals are exposed to high chemical strains and have to withstand them.

Foodgrade materials are put into certain test media such as nitric acid, caustic soda, phosphoric acid, sodium hypochlorite, as well as distilled water and water vapor and then examined for their resistance or possible alterations.

All Seal Maker materials approved for the food industry were tested in laboratories using *CIP* media.

材料的检测和物性

食品行业使用各种各样的国际规则、法规和规范来确保材料的安全使用。迁移测试是这些材料测试的重要组成部分。在此过程中，材料暴露于各种物质（食品模拟物 *A、B、C、D1、D2、E*），这些物质旨在模拟各种食品类型，如酸、脂肪、酒精，甚至肉类和奶制品。测试的目的是证明没有食物能穿透材料，反之亦然，材料中的任何物质都不能穿透食物。

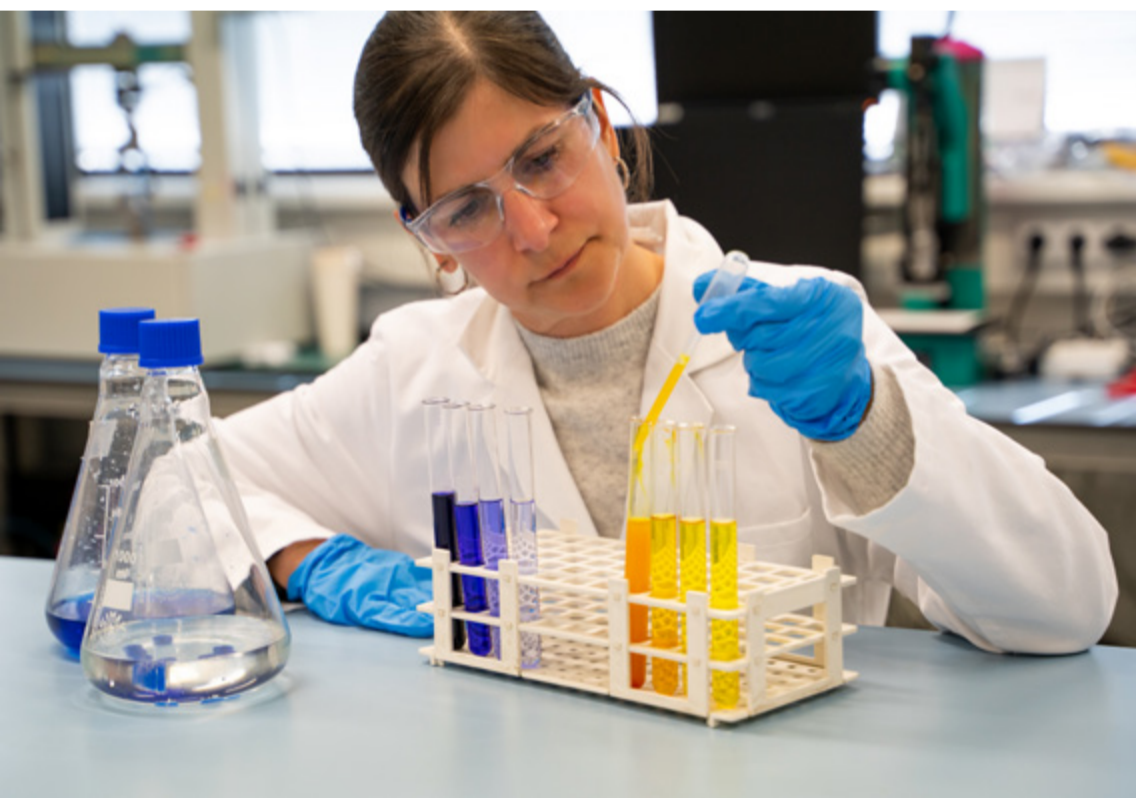
Seal Maker在独立的研究和测试机构测试食品贸易材料。这些迁移测试的结果将在综合报告中进行评估，并在Seal Maker网站上的合规声明下进行总结和发布。

清洁过程中的材料的抗损能力

食品工业的另一个重要部门是清洁工艺。为了达到规定的卫生标准，设备定期暴露在短期但密集清洁程序（*CIP-就地清洁*）中。在这些过程中，密封件等部件暴露在高化学应变下，必须承受这些应变。

将食品级材料放入特定的测试介质中，如硝酸、苛性钠、磷酸、次氯酸钠、蒸馏水和水蒸气，然后检查其阻力或可能的变化。

所有被批准用于食品工业的密封材料都在实验室使用*CIP* media进行了测试。



Helga Klug - Specialist in laboratory testing of materials

CERTIFICATIONS

According to the EU food contact legislation, companies have to submit declarations of conformity. These declarations specify the suppliers' responsibility to ensure that chemicals contained in materials are approved for use in the food sector and comply with the migration limits.

Such a declaration of conformity confirms certifications regarding *EU 1935/2004*, *2023/2006*, *10/2011*, *FDA*, *21 CFR177.1680*, *3A Sanitary Standard*, *ADI free* and *Elastomer Guideline/KTW/W270*.

The following table shows Seal Maker materials approved for the food industry:

证书

根据欧盟食品接触法规，公司必须提交符合性声明。这些声明规定了供应商的责任，以确保材料中所含的化学品被批准用于食品行业，并符合迁移限制。

此类符合性声明确认了关于欧盟1935/2004、2023/2006、2011年10月、FDA、21 CFR177的认证。1680，3A卫生标准，无ADI和弹性体指南/KTW/W270。

下表显示了食品行业认可的密封材料：

	Techn. properties				Standards					Food categories - food simulants acc. To (EU) 10/2011					Cleaning processes - CIP									
	Color	Temp. min.	Temp. max.	Hardness							A	B	C	D1	D2	E	Nitric acid	Caustic soda	Phosphoric acid	Sodium hypochlorite	Distilled water	Steam		
		[°C]	[°C]	[ShA] [ShD]	EU1935/2004 10/2011	REACH	FDA 21 CFR 177.1680	3A	GB4806.7	ADI	Meat of all zoological species, fish	Non-alcoholic beverages, alcoholic beverages of an alcoholic strength lower than or equal to 6 vol.-%	Ice-creams, alcoholic beverages of an alcoholic strength of between 6%vol and 20%	Milk and dairy products	Fats and oils	Dried foods, cacao, coffee	80°C 2%	80°C 3%	80°C 1%	70°C 3%	100%	121°C		
POLY-URETHANES	U500-R95	■	-30	125	95 ±2	✓	✓	✓	✓	✓	+	+	+	+	+	+	+	+	+	+	+	+	+	
	U530-B95-LT	■	-50	105	95 ±2	✓	✓	✓	✓	✓	+	+	no data	no data	+	no data	+	+	+	+	0	+	+	
	U540-VI95-CR	■	-30	115	95 ±2	✓	✓	✓	✓	✓	+	+	no data	no data	+	no data	+	+	+	+	+	+	+	+
	U570-D57	■	-30	125	57 ±3	✓	✓	✓	✓	✓	+	+	no data	no data	+	no data	+	+	+	+	+	+	+	+
NEW	U535-B95	■	-30	125	95 ±2	✓	✓	✓	✓	✓	+	+	+	+	+	+	+	+	+	+	+	+	+	
ELASTOMERS	N111-W85	■	-22	100	85 ±5	✓	✓	✓	✓	✓	+	+	+	+	+	+	0	0	+	0	0	0	+	
	E132-W85	■	-50	100	85 ±5	✓	✓	✓	✓	✓	+	+	+	+	+	+	0	+	+	0	0	0	0	
	E134-B85	■	-45	110	88 ±5	✓	✓	✓	✓	✓	+	+	+	+	+	+	+	+	+	+	+	+	+	
	F110-BR85	■	-25	210	85 ±5	✓	✓	✓	✓	✓	+	+	+	+	+	+	+	+	+	+	+	+	+	
	S102-R85	■	-55	210	85 ±5	✓	✓	✓	✓	✓	+	+	+	+	+	+	+	+	+	+	+	+	+	
	S103-BL85	■	-55	180	85 ±5	✓	✓	✓	✓	✓	+	+	+	+	+	+	+	+	+	+	+	+	+	+
PLASTICS	POM P101-WE	■	-50	105	✓	+++	+	+	✓	+	+++	+++	no data	no data	+++	no data	no data	no data	no data	no data	no data	no data	no data	
	PA A112-WC	■	-30	100	✓	+++	+	+	✓	+	+++	+++	no data	no data	+++	no data	no data	no data	no data	no data	no data	no data	no data	
	PTFE T101-W	■	-200	260	>50	✓	+++	+	+	✓	+++	+++	no data	no data	+++	no data	+++	+++	+++	+++	+++	+++	+++	
	PEEK PK100-CN	■	-50	250	✓	+++	+	+	✓	+	+++	+++	no data	no data	+++	no data	+++	+++	+++	+++	+++	+++	+++	

+ resistant | 0 limited resistant | * short term, tested 5h/121°C | ** on request

Polyurethan U535-B95

NEW: U535-B95 – FOODGRADE MATERIAL AS PART OF THE U5XX FAMILY

The fact that the food industry prefers the color *blue* is already well known. Nevertheless, a material suitable for use in the food sector has to be a true all-rounder.

Regardless of whether the use according to *EN1935*, *FDA* or the Chinese standard *CN-FSSS* is planned, Seal Maker has developed a polyurethane material that meets all important international food standards- the *U535-B95*.

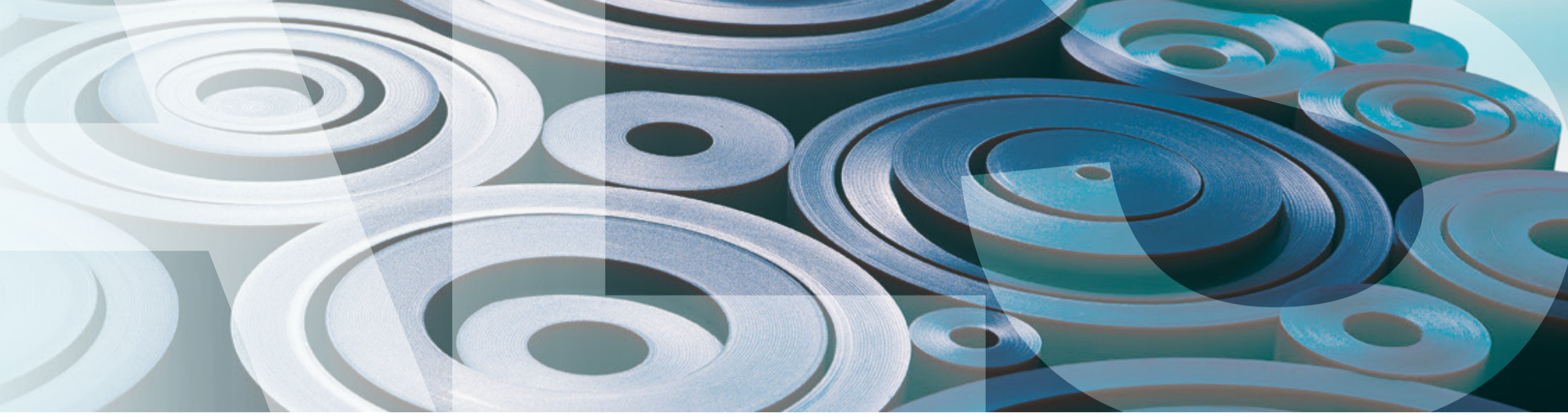
In addition, this material has also been tested with all common *CIP* media for the cleaning process and can thus be used throughout the entire process.

新增：U535-B95 – 作为U5XXFAMILY一部分的食品贸易材料

食品行业更喜欢蓝色这一事实已经广为人知。然而，一种适合食品行业使用的材料是真正的全方位材料。

无论是按照*EN1935*、*FDA*还是中国标准使用，Seal Maker已开发出*U535-B95*聚氨酯材料，这种材料符合所有重要的国际食品标准。

此外，该材料还经过了清洗过程中所有常用*CIP*介质的测试，因此可以在整个加工过程中使用。



Special elastomers

Apart from stock-managed materials in a wide variety of diameters, special elastomers with adapted properties which are currently not in the product range of Seal Maker are occasionally requested. Although such requests are always interesting, they can often only be processed to a limited extent due to insufficient demand.

For this reason Seal Maker has decided to develop internal process sequences for selected elastomers in advance and to carry out testing in order to be able to process future requests from partners more efficiently. In addition to faster delivery times, customers can expect further information on the feasibility, material properties, releases, etc. of these elastomer materials.

The following special elastomers are currently being developed:

Description	Trade name	Application temp.	Hardness	Color	Details
NBR 75 black	N103-B75	-40 up to 100°C	Shore A 75 +/-5	Black	Especially soft and elastic NBR
NBR LT black	N105-B80	-56 up to 110°C	Shore A 80 +/-5	Black	NBR with optimised low temperature properties
NBR DTx blue	N311-BL85	-25 up to 100°C	Shore A 85 +/-5	Blue	NBR for food applications with detectable filler
HNBR 75 black	HN107-B75	-25 up to 150°C	Shore A 75 +/-5	Black	Especially soft and elastic HNBR
FPM 75 black	F105-B75	-35 up to 210°C	Shore A 75 +/-5	Black	Especially soft and elastic FPM
FPM LT black	F107-B80	-40 up to 210°C	Shore A 80 +/-5	Black	FPM with optimised low temperature properties
FPM DTx blue	F310-BL85	-20 up to 210°C	Shore A 85 +/-5	Blue	FPM for food applications with detectable filler

除了各种直径的原材料库存，客户偶尔还需要具有适应性能广泛的特殊弹性体，这些弹性体目前不在Seal Maker的产品范围内。尽管此类请求总是存在，但由于需求不足，它们通常只能在有限的范围内得到处理。

出于这个原因，Seal Maker已决定提前为选定的弹性体制定内部流程，并进行测试，以便能够更有效地处理合作伙伴未来的请求。除了更快的交付时间，客户还可以获得关于这些弹性体材料的可行性、材料性能、释放等的更多信息。

目前正在开发以下特殊弹性体：

Do you need a special material not included in this list?

No problem! Due to its production possibilities, Seal Maker is also able to respond to individual customer wishes. In such a case, please bear in mind any development times and costs, as well as minimum purchase quantities. Your responsible export manager will be happy to provide you with further information.

您还想要一些不包含在列表中的特殊材料吗？

由于特殊定制的可能性，Seal Maker也能够满足个别客户的需求。特殊定制，请考虑定制的成本和货期以及起订量。您负责的销售经理将乐意为您提供更多信息。



REACH

R_{egistration} E_{valuation} A_{uthorization} Ch_{emicals}

The REACH regulation is a European Union regulation which has been adopted to improve the protection of human health, as well as of the environment in the event of contact with chemicals. In addition to the distinction between substances, mixtures or products, as well as the different handling defined therein, SVHC substances are also regularly published on the basis of REACH regulation 1907/2006.

SVHC (Substance of Very High Concern) are substances that have been classified by the ECHA (European Chemicals Agency) as being of particular concern and thus having an impact on human health or on the environment.

Twice a year ECHA updates the list of SVHC substances and publishes supplements. As soon as a listed substance – which in quantity is more than 0.1 % by mass, is contained in a material, affected customers must be informed in accordance with REACH regulations. In case there are further users of the processed materials, processors must also fulfill their obligation to provide information.

Until recently, Seal Maker materials did not contain any of the substances listed in the SVHC database.

The REACH is a regulation of the European Union, its purpose is to improve the protection of human health and the environment when in contact with chemicals. In addition to the distinction between substances, mixtures or products, as well as the different handling defined therein, SVHC substances are also regularly published on the basis of REACH regulation 1907/2006.

SVHC (高度关注的物质) 是欧洲化学品管理局 (ECHA) 归类为特别关注的物质, 因此对人类健康或环境有影响。

ECHA每年两次更新SVHC物质清单并发布补充资料。一旦材料中含有数量超过0.1% (按质量计) 的所列物质, 必须根据REACH法规通知受影响的客户。如果加工材料还有其他客户, 他们还必须履行提供信息的义务。

截至目前, Seal Maker材料还不包含SVHC数据库中列出的任何物质。



However, at 17.01.2022, four more substances were added to the SVHC list. One of these substances is part of NBR materials N107, N109 and N111. The substance in question is bound in the elastomer matrix after the vulcanization, and an isolated transition is not possible under normal usage conditions. An external laboratory test currently commissioned also revealed that this SVHC can also be detected in the products (Semi-finished product) of N111 with more than 0,1 wt%. N107, as well as N109 are not affected.

Seal Maker employees receive specific regular training and the information on the substances listed in the REACH regulation and in the SVHC database is constantly collected, so that our customers will be informed on any alteration immediately. Respective information can be found in the REACH Comment at www.seal-maker.com.

In the medium to long term, Seal Maker's goal is to replace SVHC substances by alternative raw materials developed by our materials engineers.

然而, 在2022年1月17日, SVHClist中又添加了四种物质。其中一种物质是NBR材料N107、N109和N111的一部分。该物质在硫化后结合在弹性体基体中, 在正常使用条件下不可能发生孤立的转变。第三方的实验室测试时显示SVHC能够在部分半成品如N111中测出, 占比略高于0.1%, 但在N107和N109中却没有。

Seal Maker的员工将接受定期培训, 并不断收集有关《再监管条例》和SVHC数据库中所列物质的信息, 以便我们的客户立即了解任何变更。相关信息可在www.seal-maker.com上的REACH评论中找到。

从中长期来看, Seal Maker的目标是用我们的材料工程师开发的替代原材料取代SVHC物质。

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