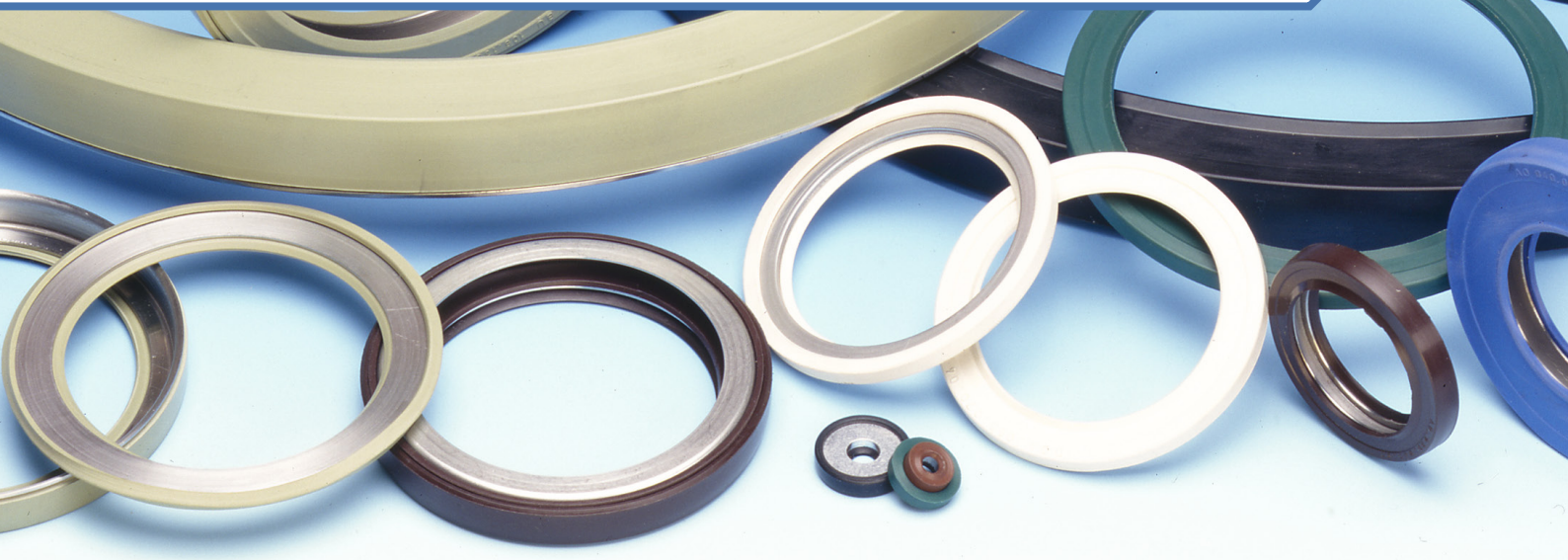


VR lipseals and foodstuff

VR radial lipseals in accordance to EC 1935:2004



Radial lipseal for food contact

A/S Gunnar Haagensen offers a wide standard program of radial shaft seals intended for direct contact with foodstuff. Our seals employ elastomeric compounds formulated to comply with EC 1935:2004, as well as FDA CFR 21§177.2600, to ensure a high level of protection of human health with regard to the equipment used for production of foodstuff. This makes the VR radial lipseals an excellent choice for mixers, agitators and other rotating equipment intended for contact with foodstuff.

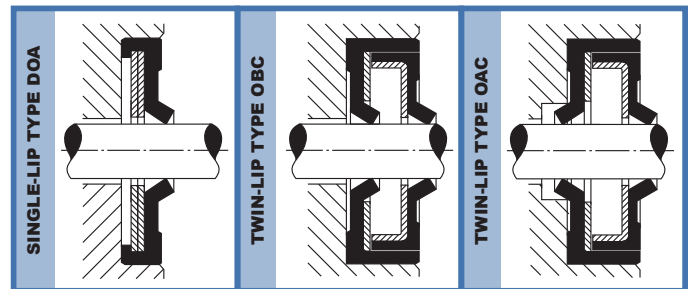
Optimised seal for stainless steel shafts

The design of the VR lipseal differs quite a lot from a standard radial shaft seal in the sense, that the membranes are not vulcanised to the metal support parts or energized by a traditional spring configuration. This allows for a flexible movement of the membrane and an optimal support of the seal lip that guarantees a perfect sealing. As a result the VR lipseal is characterised by a long service life and more importantly does not score the shaft during running. This ensures a significant reduction of wear of the stainless steel shafts traditionally employed in applications for foodstuff. Because of the optimal support of the sealing membrane, large pressures can be sealed. This allows for the standard series to seal pressures up to 15 bar.



VR lipseal profiles for foodstuff

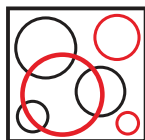
As a part of our program of VR seals, A/S Gunnar Haagensen offers several VR profiles approved for contact with foodstuff. Depending on the individual application, assembly and required seal orientation, we provide single-lip as well as twin-lip seals. In addition, we also provide a wider range of standard VR radial lipseals intended for use in traditional industrial applications. Contact us for more information with regard to available seal sizes and bore preparations.



Compounds in accordance to EC 1935:2004

We offer several elastomers certified for direct contact with foodstuff for our range of VR radial lipseals. Contact us for more information on the available elastomers in accordance with EC 1935:2004 and FDA regulation CFR 21§177.2600.

Elastomer	VR code	Colour
Nitrile (NBR)	-1	Black
Therban (HNBR)	-5	Brown
Silicone (VMQ)	-6	Red
Viton Peroxyde (FPM P)	-7	Gray
Viton + PTFE (FPM T)	-8	White



New legislation for materials in the foodstuff industry

To improve and ensure public health, higher requirements are now demanded for materials for use in applications or equipment in connection with the production of foodstuff. So far requirements has been based on FDA, USP or various national legislations among the EU countries. With the enactment of EC 1935:2004 with regard to materials and articles for contact with foodstuff, these requirements are however no longer sufficient with regard to the now current legislation.

With the enactment of the EC 1935:2004 regulation, the EU have commenced an unification of the legislation in all EU member states. Material intended for direct contact with foodstuff is designated as food contact material (shortened FCM). These requirements also include elastomers based solutions such as radial lipseals. In addition to the EC 1935:2004, FCM must likewise be in accordance with regulation EC 2023:2006 on Good Manufacturing Practice (GMP).

The requirements for articles certified for contact with foodstuff and the appertaining demands for sufficient documentation, is employed to ensure compliance with current EU legislation. This entails that materials for contact with foodstuff, must not transfer their constituents (migration) to food in quantities that could endanger human health. Furthermore the employed materials must not bring about an unacceptable change in the composition of the food or bring about a deterioration in the organoleptic characteristics.

All companies producing or providing solutions for use with foodstuff, are therefore required to be able to substantiate by the use of declarations of conformity and self-regulation, that their products are in accordance with the requirements for FCM.

When does the regulation for food contact material apply?

Sealing solutions are subject to the regulation for FCM if they are intended for, or within predictable application can be expected to come into direct contact with foodstuff. The regulations for FCM are therefore applicable for all radial lipseals in applications or equipment that could possibly come into contact with foodstuff during employment. Seals are exempted from the regulation for FCM if they do not come in contact with foodstuff within their intended or predictable application.

All EU member states must abide by the regulations of EC 1935:2004 – regardless of whether equipment or solutions are supplied to countries within or outside the EU. In case of export to the U.S., equipment and applications containing FCM must therefore be both EC 1935:2004 and FDA certified.

Requirements for FCM documentation

When supplying FCM related articles, our self-regulation ensure that A/S Gunnar Haagensen comply with the required level of documentation. All our foodstuff-approved items are supplied with the statutory documentation for FCM articles in accordance to EC 1935:2004 and EC 2023:2006. This ensures that our customers are in possession of all required documentation and information for the configuration of their own declarations of conformity as well as self-regulation.

- **Declaration of conformity**

A declaration of conformity is a supplier guarantee, which is passed on in the chain of production or trade from vendor to customer. The declaration is a confirmation that articles and materials delivered by A/S Gunnar Haagensen abide by current regulations and legislation with regard to elastomer based solutions intended as FCM.

- **Background documentation**

This documentation establishes the validity of the content in the declaration of conformity. The documentation outlines the results and test conditions for the migration reports, which demonstrate the applicability of each individual material compound as FCM. This background documentation is supplied in the shape of a certificate of conformity for each compound.

- **Technical datasheet**

All items are delivered with a technical datasheet on the employed compound. This datasheet contain compound description, a summary of physical properties as well as field of application for the type of foodstuff with regard to contact with aqueous and/or fatty foods.

- **Certification for sales of FCM**

All companies who market, produce or import items for use in applications with direct contact with foodstuff, must be registered and approved by the Danish Veterinary and Food Administration. A/S Gunnar Haagensen is registered by the Danish Veterinary and Food Administration. Our current control report can be found at www.findsmiley.dk

- **Traceability and GMP**

To ensure a high quality assurance, as well as to establish a traceable methodology, all FCM items are handled via our quality control system in accordance with ISO 9001:2008 and GMP. All items are supplied with full traceability by batch numbering. This ensures an easy identification and recall of faulty materials.

- **Labelling**

All FCM materials are supplied with correct labelling in accordance to EC 1935:2004. This include the For Food Contact logo, item number, A/S Gunnar Haagensen name and address as well as full traceability via batch numbering.