

Test report

Food regulatory assessment of SIGRAFLEX MF-seals according the FDA requirements

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Customer:	SGL Carbon GmbH 86400 Meitingen
Date of order:	25.5.2011
IVV Order no.:	PA/4367/11
Sample receipt:	9.5.2011 (sample for inspection)
Sample storage:	Remaining test material will be stored for six month in the institute.
Total pages of the report:	3

The results relate only to the investigated samples.

1 Scope

SIGRAFLEX MF seals are used as flat seals in pipes for food processing machines. The seal consist of a high-grade steel reinforces graphite core which at the top and bottom is connected with a high-grade steel film, without the use of adhesive. This in turn is coated with TFM 1700, a modified PTFE. The flat ring seal has a high-grade steel flange on the inside (food contact side). High-grade steel flanges are also sometimes used on the outside. The PTFE-coated high-grade steel film represents the sealing surface. Food contact is largely with the inner steel flange, possibly also with the edges of the PTFE-coated high-grade steel film.

It must be verified that SIGRAFLEX MF seals meet the food legislation requirements according FDA.

The testing is carried out on the basis of the manufacturer's certificates for the individual materials used.

2 Evaluation of the individual layers

According to the manufacturer's information, the high-grade steels which were used (austenitic CrNi-steels) for the high-grade steel films and flanges are suitable for use in contact with foods. In USA there are no statutory regulations for the composition of high-grade steel.

According to the manufacturer's information, the PTFE-copolymer meets the US-American requirements on accordance with 21 CFR 177.1550 "perfluorocarbon resins". The limit value for the total extract ($< 3.1 \text{ mg / dm}^2$ resp. 0.2 mg / in^2) as well as the fluorine content ($< 0.46 \text{ mg / dm}^2$ resp. $0.0.3 \text{ mg / in}^2$) are complied with the based on tests at independent testing institutes.

3 Summary

According to the provided certificates of compliance, SIGRAFLEX MF seals is, if used in the proper way, in accordance with the food legislation requirements of USA in contact with all types of food.

4 Signatures

Fraunhofer Institute
Process Engineering
and Packaging

Freising, 9.6.2011



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