FOOD CONFORMING MATERIALS FOR GLOBAL USE

Chinese standards in the food industry
The GB 4806 and GB 9685 standards adopted by the Chinese government in 2016 differ in some aspects from the requirements of US and EU regulations for the food industry. GB 4806 lays down the fundamental rules for seals coming into contact with food. There are also material-specific standards that define sensory and migration tests. In turn, GB 9685 contains a positive list that regulates the composition of a seal that products will touch.

One of the particular challenges lies in the differences from western standards. Both the conditions for the migration tests and the selection of approved raw materials differ, for instance. That makes the complexity of the criteria to be met significantly greater, so that in the majority of cases the sealing materials used so far cannot demonstrate conformity with both Chinese and western standards. The new materials from Freudenberg Sealing Technologies meet all requirements for the food industry in Europe, China and the USA. For the elastomer materials these are the western regulations EG (Reg.) 1935/2004 and FDA §177.2600 and the Chinese GB 4806 and GB 9685 standards. For plastics, EU (Reg.) 10/2011 applies. That means they offer a huge advantage for our international customers.

MATERIALS

Elastomer Materials
EPDM is the material most frequently used in the food industry. It is characterized by impressive resistance in hot water, steam, acids and alkalis. The product portfolio is wide and varied.

The 70 EPDM 382, 75 EPDM 386, 85 EPDM 387 and 85 EPDM 389 material compounds developed by Freudenberg Sealing Technologies offer outstanding resistance to aging and media. In addition they are conform to all necessary approvals in the food industry. Moreover, their properties are comparable to those of proven elastomer materials for the food industry, such as 70 EPDM 291, for instance.

The range of applications of VMQ silicone rubbers in the food industry extends from low temperatures of -60 °C to very high temperatures reaching +200 °C. They are also very resistant to weathering, aging and ozone.

The portfolio of Freudenberg Sealing Technologies includes three material variants that are compliant with all food standards in Europe, China and the US. 70 VMQ 117055 and 60 VMQ 117117 fall well below the thresholds set by the Chinese government for total migration tests in the food and beverage industry.

Engineering Plastics
Freudenberg Sealing Technologies offers engineering plastics specially tailored to the food industry, such as polyamides, PTFE and polyethylene. Polyamide materials are characterized by high strength, rigidity and toughness. PTFE has the advantage of outstanding chemical stability, making it a viable option for use in almost any media. The material also boasts a very low coefficient of friction as well as a wide thermal range of applications.

The portfolio of materials for the Chinese market includes the PTFE materials V038, G223, Y002, Y005 and 38558. In the polyethylene segment, Freudenberg Sealing Technologies offers the material PE E083. All listed engineering plastics meet the relevant requirements of the food industry in the three major markets of China, Europe and the USA.

Food conforming materials for global use

Available products
The EPDM materials for the Chinese market are available for a large product portfolio of O-rings, diaphragms and customized parts. It is also possible to source machined spare parts and small lots made both of EPDM and of technical plastics with Freudenberg Xpress®. As usual, the two silicones are available as O-rings, diaphragms or customer-specific parts.

BENEFITS FOR THE CUSTOMER

- Food conformities for Europe, the USA and China
- Large number of tested premium materials
- Wide product portfolio
- Machining with Freudenberg Xpress® also possible

	CHARACTERISTICS				AVAILABLE PRODUCTS					
	MATERIAL	SHORE A	COLOR	TEMPERATURE RANGE (°C)	O-RINGS	DIA-PHRAGMS	VALVE PISTONS	BELLOWS	MACHINED SEALS	CUSTOMIZED PARTS
ELASTOMER MATERIALS	70 EPDM 382	70	black	-40 to +150						●
	75 EPDM 386	75	black	-40 to +150	●				●	
	85 EPDM 387	85	black	-40 to +150	●				●	
	85 EPDM 389	85	black	-40 to + 150						●
	60 VMQ 117117	60	transparent	-50 to +200		●				●
	70 VMQ 117055	70	transparent	-50 to +200	●					
	70 VMQ 117066	70	black	-50 to +200						●
ENGINEERING PLASTICS	Virginal PTFE V038		white	-200 to +260					●	
	PTFE Y002		beige	-80 to +200					●	
	PTFE Y005		beige	-80 to +200					●	
	PTFE G223		light grey	-200 to +260					●	
	Virginal PTFE 38558		white	-200 to +260			●	●		
	PE E083		white	-200 to +80					●	

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