

Flexitallic[®]

SIGMA[®] ONE

Low load to seal.
Increased load retention.
Widest chemical compatibility.



INTRODUCING: SIGMA[®] ONE

HIGH PERFORMING BIAXIALLY ORIENTATED PTFE WITH A SPECIAL PROPRIETARY FILLER.

Flexitallic's SIGMA[®] One was developed to meet the industry's most critical chemical service applications. Research & Development efforts extended over two years in order to provide the market with a PTFE based sealing material that was truly ideal for service.



WIDE CHEMICAL COMPATIBILITY



BIAXIALLY ORIENTATED



ENHANCED LOAD RETENTION



INVENTORY CONSOLIDATION



NOTICEABLY RIGIDITY



ALLEVIATE MISAPPLICATION



LOW LOAD TO SEAL



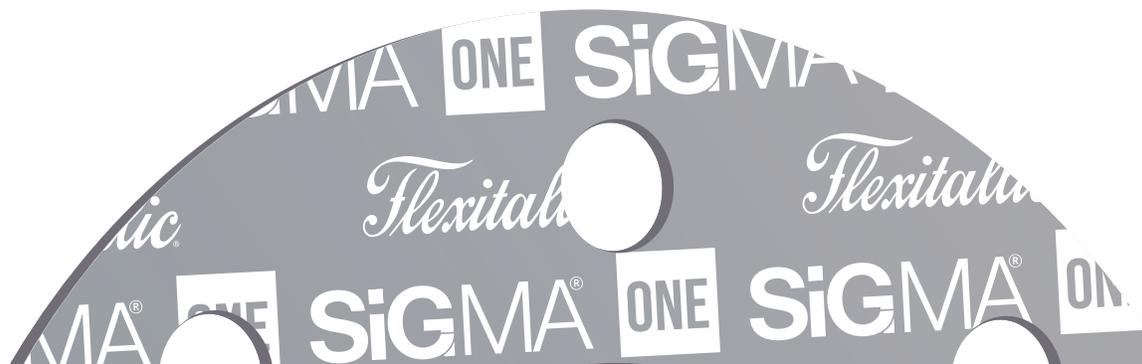
CREEP & COLD FLOW RESISTANCE



TECHNICAN FRIENDLY

SIGMA[®] ONE

- Flexitallic's proprietary manufacturing process allows for high-performance in every direction (biaxial).
- The formula incorporates PTFE & a proprietary filler, which are both well-known for their exceptional chemical resistance.
- Reduced risk of misapplication and inventory consolidation are a result of SIGMA[®] One's excellent chemical compatibility.
- High compressibility provides easier installation and lower load to seal. Minimizing the likelihood of equipment damage.
- SIGMA[®] One provides superior creep & cold flow resistance, increased sealability, decreased emissions & peace-of-mind
- SIGMA[®] One's biaxially-orientation makes it the ideal solution for applications with elevated mechanical requirements.



THE FACTS ABOUT PTFE

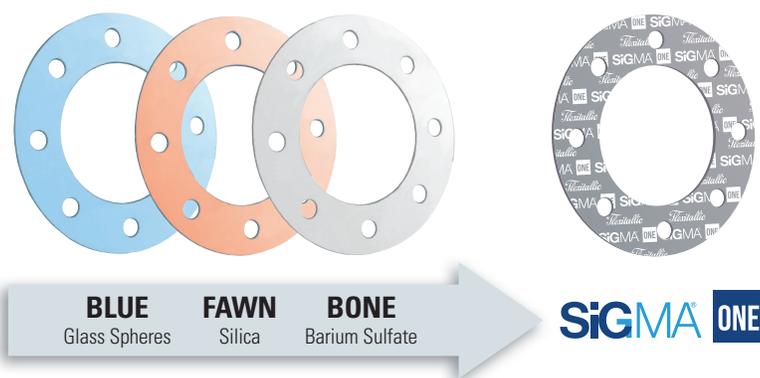
UNIVERSAL CHEMICAL COMPATIBILITY

Until now, chemical manufacturing facilities have been required to utilize a variety of conventional-filled PTFE materials to cover the chemical range in its entirety. Thus, increasing the likelihood of gasket misapplication.

COMPARISON: SIGMA® ONE vs. Conventional-Filled PTFE				
	SIGMA ONE®	BLUE	FAWN	BONE
STRONG ACIDS	●	●	●	●
STRONG BASES	●	●	●	●
COOKING LIQUORS	●	●	●	●
SULFURIC ACID	●	●	●	●
SODIUM HYDROXIDE (CAUSTIC)	●	●	●	●
OLEUM FUMING SULFURIC ACID	●	●	●	●
HYDROFLUORIC ACID	●	●	●	●

● COMPATIBLE ● CAUTION: CONSULT FLEXITALLIC ENGINEERING ● NOT COMPATIBLE

When compared to other conventional-filled PTFE (glass spheres, silica, barium sulfate) sheet sealing materials, SIGMA® ONE's near universal chemical compatibility minimizes the risks associated with gasket misapplication.



- PTFE is commonly used for sealing within chemical service applications.
- 100% Pure PTFE provides excellent chemical compatibility, but does have its drawbacks.
- Pure PTFE is not stable under heat & pressure, which is known as "creep." Excessive "creep" results in loss of load on the gasket, and therefore increasing the likelihood of leakage.
- In order to minimize creep, fillers are commonly added to PTFE during the manufacturing process.
- Fillers help to stabilize the gasket, but each has its own chemical compatibility limits and related trade-offs.
- The most common fillers are glass spheres (blue), silica (fawn) and barium sulfate (bone or off-white).
- Many companies must utilize a wide variety of materials in order to properly seal the assortment of chemical service applications.
- Companies that utilize a variety of PTFE sealing materials are more at risk of misapplication, which can negatively impact safety, reliability and up-time.

SIGMA[®] ONE

TYPICAL PHYSICAL & MECHANICAL PROPERTIES

TYPICAL TECHNICAL DATA (for thickness 1/16")			
TEMPERATURE °F (°C)			
Min:		-418°F (-250°C)	
Max:		500°F (250°C)	
Continuous Service Max:		500°F (250°C)	
PRESSURE PSIG (BARG):			
Max:		1230 (85)	
Continuous Service Max:		725 (50)	
COMPRESSIBILITY (%)	ASTM F36	55	
RECOVERY (%)	ASTM F36	27	
INCREASE AFTER FLUID IMMERSION			
		Oil 3	Fuel B
Thickness (%)	ASTM F146	0	0
Weight (%)	ASTM F146	8.9	25.7
TENSILE, (MPa)			
	ASTM F152	Cross Grain	With Grain
Across Grain, (MPa)	ASTM F152	5.7	5.5
DENSITY lb/ft.³ (g/cm³)	ASTM F1315	79.2 (1.27)	
DESIGN FACTORS			
"m" factor	ASTM F3149-15	1.4	
"y" factor, psi (N/mm ²)	ASTM F3149-15	1740 (12)	

SEALING CHARACTERISTICS	ASTM F37B - Fuel A	ASTM F37B - Nitrogen	BS 7531 - Nitrogen
Thickness (")	1/32"	1/32"	1/16"
GASKET LOAD , psi (N/mm ²)	1000 (7)	3000 (20.7)	4640 (32)
INTERNAL PRESSURE , psig (barg)	9.8 (0.7)	30 (2)	580 (40)
LEAKAGE	0.18l/hr	0.12ml/hr	0ml/min

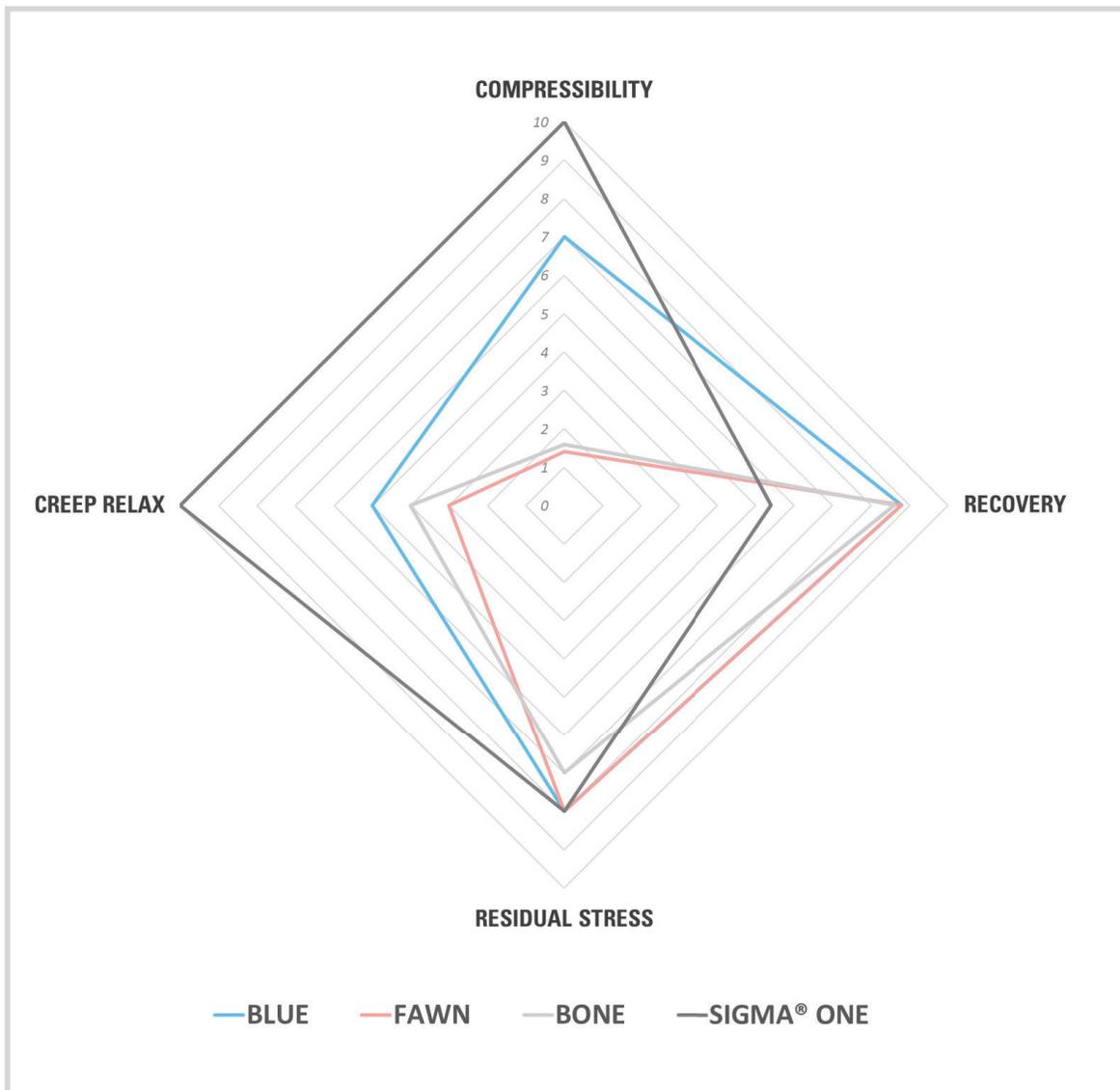
GENERAL INFORMATION	
COLOR	Gray
APPROPRIATE APPLICATIONS	Suitable for sealing most chemicals across the whole pH range (0-14) with the exception of molten alkali metals and fluorine gas.
ASTM LINE CALL OUT	F458000B4M3

AVAILABILITY	
SHEET DIMENSIONS	60" x 60"
THICKNESS RANGE	1/32", 1/16", 1/8". Other thicknesses available on request
TOLERANCES	Length and width: +1%. Thickness: -10%, +5%

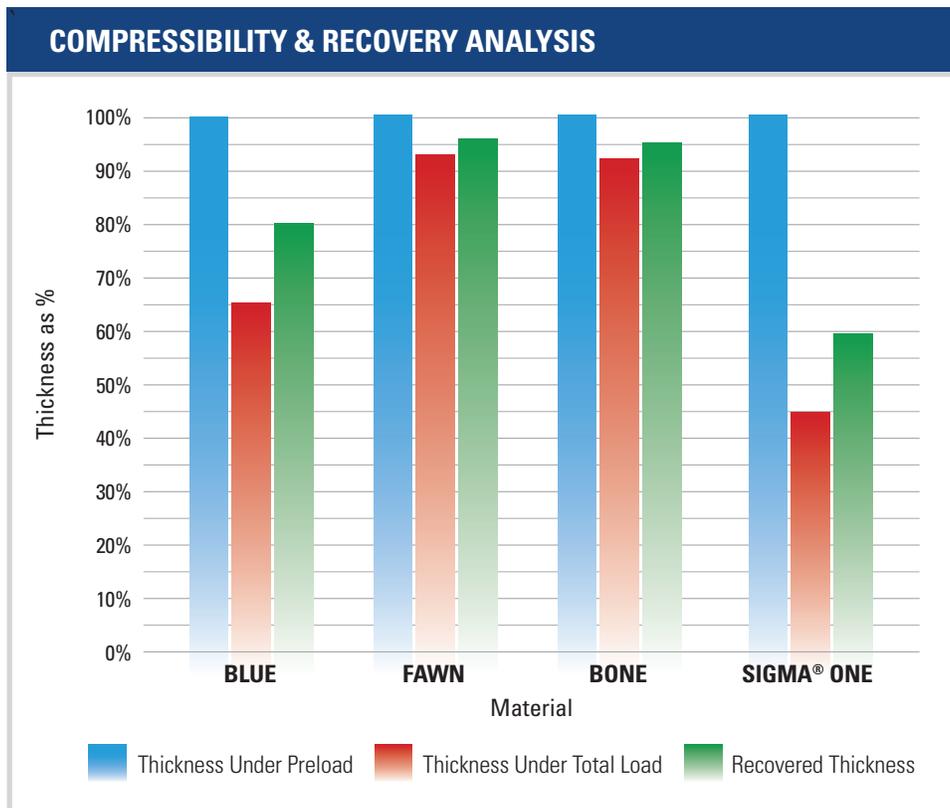


SIGMA® ONE vs. CONVENTIONAL-FILLED PTFE

SIGMA® One offers a superior combination of sealing related properties that make it an ideal fit over other conventional-filled PTFE materials that are currently found in the market.



ONE



Compressibility & Recovery properties of SIGMA[®] One against conventional-filled PTFE (glass spheres, silica, barium sulfate) sheet sealing materials. Based on available datasheet information. Thickness @ 100% = 1/16"

COMPRESSIBILITY

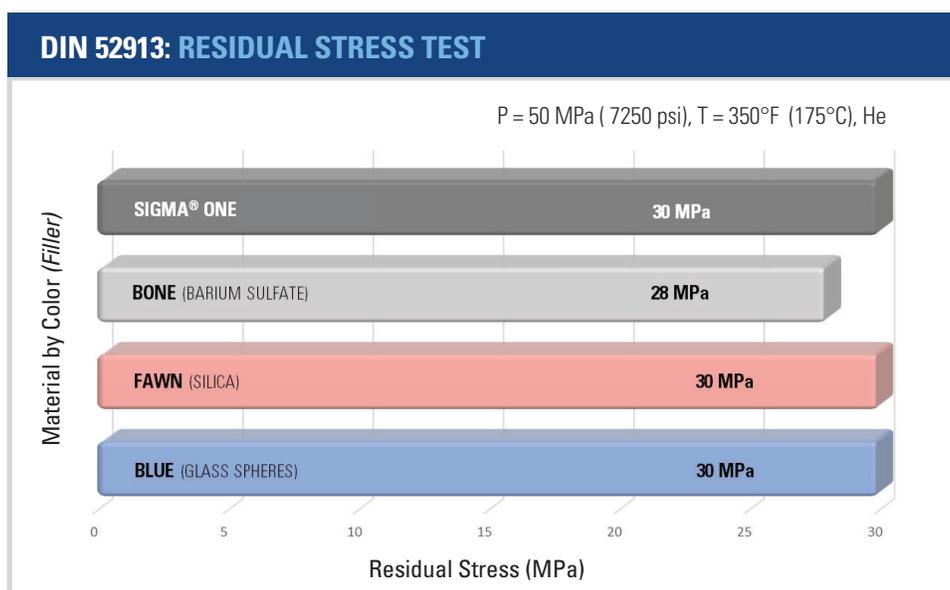
The ability to conform to the distortions of mating flanges.

RECOVERY

The follow the motions of the flanges caused by mechanical (or thermal) forces.

COMPRESSIBILITY & RECOVERY

Recovery is related to compressibility. The percent recovery is based on the amount the sample has been compressed under full load. This has to be considered in light of the percent compressibility. Recovery measures the ability of a material with a specific compressibility to maintain a seal during the flange transitions encountered in service.



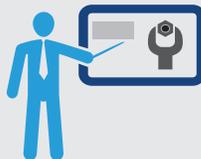
SIGMA[®] ONE boasts compressibility of 55% and is a ideal for non-metallic flanges or applications requiring lower bolt loads.

POWER TO THE FUTURE.



WORLD-CLASS APPLICATION ENGINEERING SUPPORT

Available via: phone, email and live chat.



PROFESSIONAL GRADE TRAINING, WORKSHOPS AND SEMINARS,

Which are centered on “Best Practices” approach to installation / bolt-up procedures. Sessions range from 2-6 hours, but are completely customizable to fit your specific needs.

ARE YOU FLEXITALLIC SAFE?



Interested in having a technical conversation about Flexitallic’s SIGMA® or one of our other innovative products?

Our team of World-Class Application Engineers are available to answer any of your technical questions via: phone, email or live chat.



PHONE: +1 281.604.2400

EMAIL: dpengineering@flexitallic.com

LIVE CHAT: <https://www.flexitallic.com/us>

THE FLEXITALLIC GROUP

The Flexitallic Group is the international market leader in the manufacture and supply of high quality, high value industrial static sealing products, delivering industrial gaskets on a global scale.

ABOUT

As the developer of the spiral wound gasket in 1912, we have built on this legacy of innovation with revolutionary products including Thermiculite® and Sigma®, The Flange Rescue Gasket winner of the NACE and Dupont Plunkett Awards, and most recently the Change™ Gasket, set to transform the global sealing industry. We have a global network of Allied Distributors across 30 countries. This ensures local demand is met quickly, providing a combination of the highest product quality and outstanding customer service.

Our extensive and varied product offering includes spiral wound gaskets, RTJ gaskets, Flexpro™ Kammprofile, sheet materials, dynamic and static packings, pipe support and custom rubber products. Drawing upon the group's rich history and present day values of leadership, quality, service and technology, we are at the forefront of developing sealing solutions for industries around the world. In addition to a wide range of products, we also deliver world-class technical support and Joint Integrity training.

INNOVATIVE PRODUCT RANGE

We have a rich history of innovation, which has seen us lead the industry with many new products. Over the years, our products have gained a reputation for quality, reliability and technology that is second to none.

CUSTOMIZED ENGINEERING SOLUTIONS

Our Application Engineering, Production Engineering and R&D teams work closely together to design, develop and manufacture bespoke sealing solutions.

We have been responsible for a number of truly revolutionary products, including Thermiculite®, Sigma® and the Flange Rescue Gasket, which ensure we are able to continually meet the ever more stringent requirements of our customers.

INSIDE INDUSTRY

We pride ourselves on not simply supplying products, but by supporting customers with a detailed knowledge of their industry and applications, so that products and services are tailored to their specific needs. This unique approach means that we focus on providing more than just a product, but also a complete solution that adds genuine value to our clients.

OUR COMMITMENT TO QUALITY

We place great emphasis on maintaining international quality standards, and are approved to ISO 9001:2008, ISO 14001:2004 and OHSAS 18001:2007, API 6A and API 17D, to ensure we meet the highest possible standards for all our products and services.

We also invest heavily in test and quality assurance equipment to maintain our reputation for the highest quality products.

Our materials are subjected to a wide range of tests as specified by statutory regulations and customer requirements. These approvals enable our customers to make informed choices as to the suitability of a product for each and every application.

UNITED STATES Flexitallic US LLC

6915 Highway 225
Deer Park
Texas 77536
USA
Tel. +1 281 604 2400
Fax. +1 281 604 2415
www.flexitallic.com

UNITED STATES Geismar Service Center

35238 E. Hwy 30
Geismar
Louisiana 70734
USA
Tel. +1 225 442 3580
Fax. +1 225 424 6895
www.flexitallic.com

About The Flexitallic Group

The Flexitallic Group is a global leader in specialized sealing solutions and products serving the oil and gas, power generation, chemical and petrochemical industries in emerging and developed markets. Focused on the upstream, downstream and power generation sectors, it has operations in France, the United States, Canada, Mexico, the United Kingdom, Germany, Italy, Belgium, the United Arab Emirates, Thailand and China plus a network of worldwide licensing partners and distributors.