TACC Team of Application for Carbon nanotube Composite

Evaluation Sample Available

Contact Us :
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SGOINT

Heat-Resistant & Low-Cost Carbon Nanotube Reinforced O-ring

Description

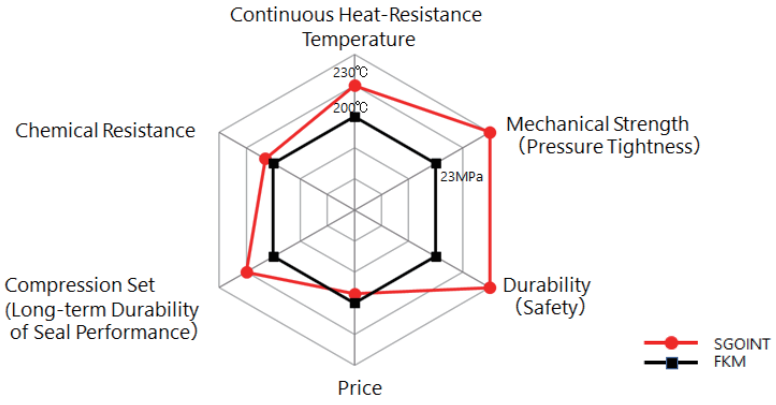
SGOINT is a new concept heat-resistant O-ring using peroxide-curable fluoroelastomer (FKM) matrix with highly pure and long single-walled carbon nanotube known as SGCNT as reinforcing filler.

SGOINT is developed to meet the needs of :

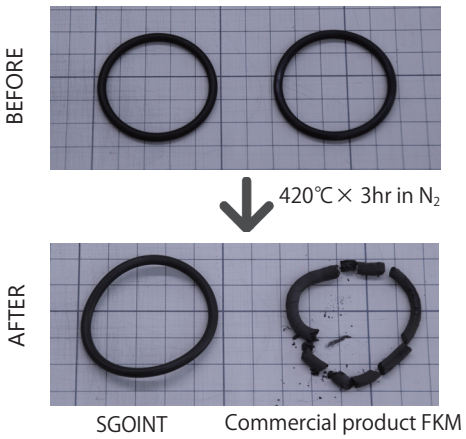
- **Using O-ring in high-temperature environment up to about 230 degrees C;**
- **Using O-ring under high-pressure condition than ever before;**
- **Curbing operational costs by reducing O-ring exchange frequency;**
- **Replacing metallic sealing with easy to care and safer rubber O-ring; and**
- **High-performance O-ring in the price range of FKM.**

Benefits

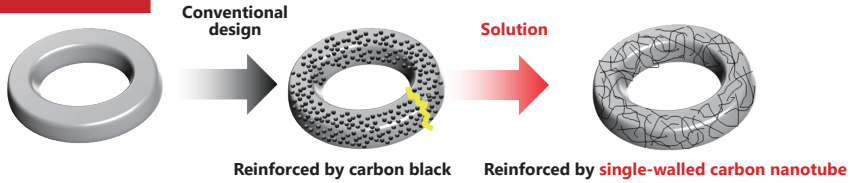
Features of SGOINT

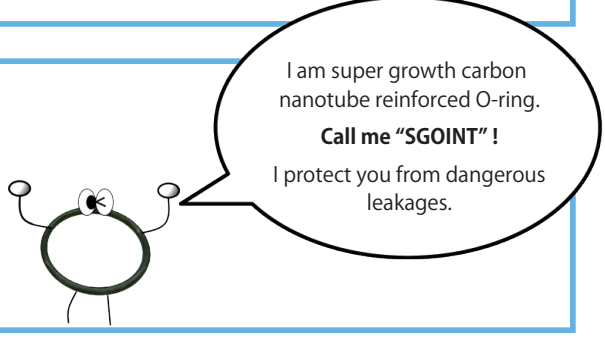


Shape maintenance at polymer degradation temperature



Concept





SGOINT

Product Details and Sample Availability

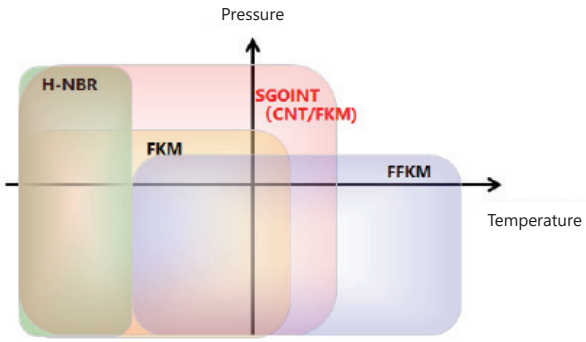
Technical Details of SGOINT

Standard O-ring	Standard		AS568-223	
	Width (Cross Section)		3.53±0.01	mm
	Inside diameter		40.87±0.38	mm
Normal physical properties	Hardness (IRHD M-method)		85±5	–
	Strength	Tensile Strength	20<	MPa
		Elongation	150<	%
		100% Young's Modulus	10<	MPa
Air heating aging test	Temperature		230	℃
	Time		336	hrs
	Change of Hardness (pt)		<10	pt
	Change of Tensile strength (%)		<20	%
	Change of Elongation (%)		<45	%
Compression Set	Temperature		230	℃
	Time		336	hrs
	Compression Set %		<60	%
Chemical resistance(*)	20 % Diethanolamine (90℃×72hr)		good	
	50 % Diethanolamine (90℃×72hr)		good	
	100 % Diethanolamine (90℃×72hr)		fair	

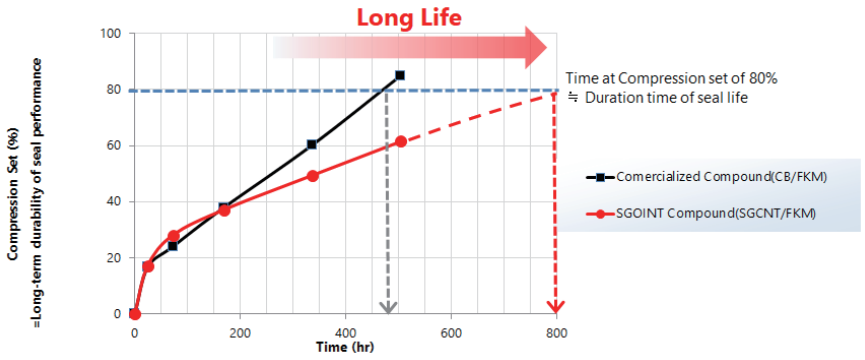
(*) Change of Tensile Strength : <30 % (good) ; < 50 % (fair) ; > 50 % (poor)

Note: Each characteristic value of the table is the representing value by actual measurement and does not warrant quality.

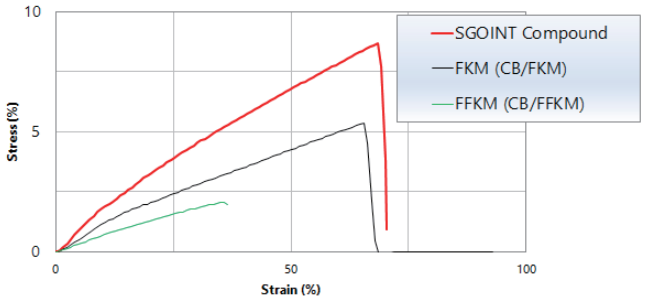
Various materials and maim applicable area of SGOINT



Time dependence of compression set at 230 degrees C



Mechanical strength at 230 degrees C



Sample Availability

AS568-223, AS568-214, AS568-312, AS568-343

* Please contact us for other shape of samples.

More About Our Product

- ○ "Development of rubber material resistant to various environments at the world's highest level " (JPN)
  http://www.aist.go.jp/aist_j/press_release/pr2016/pr20160125_2/pr20160125_2.html
- ○ "Develop tough and safer O-ring which maintains shape in high-temperature" (JPN)
  http://www.aist.go.jp/aist_j/press_release/pr2017/pr20170608/pr20170608.html
- ○ "Development of durable and economically efficient heat-resistant O-ring" (JPN)
  http://www.aist.go.jp/aist_j/press_release/pr2018/pr20180208/pr20180208.html
- ○ Team of Application for Carbon nanotubes Composite, National Institute of Advanced Industrial Science and Technology
  https://www.nanocarbon.jp/tacc/

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