



## ISMAT SPECIFICATIONS

### ISM-FKM-7512 – Technical Datasheet

#### 1. Introduction:

ISM-FKM-7512 base polymer is an Engineering purpose Fluorocarbon compound. FKM O Rings can be used in petroleum products and solvent resistant applications such as Valve Assy. Very good high-temperature performance than other elastomer. It highly resistant to swelling when exposed to gasoline as well as resistant to degradation due to expose to UV light and ozone.

#### 2. Product Description:

Chemical Composition: Fluorinated vinyl compound containing Fluorine (65% to 71%)  
Colour : Black

#### 3. Physical Properties:

Description	ASTM Test Method	Unit	Specification
Hardness	D2240	Shore A	75 ± 5
Tensile Strength (Min)	D412	MPa	12
Elongation (Min)	D412	%	150
Compression Set (Max) 70hrs@200°C	D395 Method B	%	20
Heat Ageing (Max) 70hrs @250°C Hardness Change Tensile Change Elongation Change	D471	Shore A % %	0 to+15 -25 max -25 max
ASTM : 1 Oil Ageing(Max) 70hrs@150°C Hardness Change Tensile Change Elongation Change	D471	Shore A % %	-10 to 0 -25 -25
ASTM : 3 Volume Swelling	D471	%	±10

#### 4. Service Temperature: -19°C to + 240°C

#### 5. Application:

- Used in O rings, Quadseals etc., for extreme service temperatures
- FKM has excellent ozone and chemical resistance properties.
- Used in High temperature applications requiring good compression set.

#### 6. Limitations:

- Poor low temperature flexibility, hot water and steam resistance.

This information is to the best of our knowledge. The above mentioned data have been obtained by tests we consider as reliable. We don't assure that the same results can be obtained in other laboratories, using different conditions by the preparation and evaluation of the samples.



## ISMAT SPECIFICATIONS

### ISM-FKM GLT-7512 – Technical Datasheet

#### 1. Introduction:

ISM-FKM GLT-7512 base polymer is Terpolymers of fluoroelastomer designed to retain the high heat and the chemical resistance, improved low temperature flexibility of the material. GLT indicates the Glass transition temperatures ( $T_g$ ) of materials, that shows the low temperature performance in typical elastomers applications. FKM GLT O rings can be used in low temperature applications.

#### 2. Product Description:

Chemical Composition: Fluorinated vinyl compound containing Fluorine (65% to 71%)  
Colour : Black

#### 3. Physical Properties:

Description	ASTM Test Method	Unit	Specification
Hardness	D2240	Shore A	75 ± 5
Tensile Strength (Min)	D412	MPa	12
Elongation (Min)	D412	%	200
Compression Set (Max) 70hrs@200°C	D395 Method B	%	20
Heat Ageing (Max) 70hrs @250°C Hardness Change Tensile Change Elongation Change	D471	Shore A % %	±5 ±10 max ±12 max
ASTM : 1 Oil Ageing(Max) 70hrs@150°C Hardness Change Tensile Change Elongation Change	D471	Shore A % %	-8 to 0 -15 ±10
ASTM : 3 Volume Swelling	D471	%	±5

#### 4. Service Temperature: -32°C to + 240°C

#### 5. Application:

- Used in O rings for low temperature applications in Valve assy.
- Used in High temperature applications requiring good compression set.

#### 6. Limitations:

- Moderate low temperature flexibility, hot water and steam resistance.

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## ISMAT SPECIFICATIONS

### ISM-FSIL-7007 – Technical Datasheet

#### 1. Introduction:

ISM-FSIL-7007 base polymer is an Engineering purpose Fluorosilicone compound. Fluorosilicones combine most of the attributes of silicone with resistance to petroleum oils and hydrocarbon fuels. Low physical strength and abrasion resistance combined with high friction limit fluorosilicone to static seals

#### 2. Product Description:

Chemical Composition: Fluorine & Silicone  
Colour : Robin Blue, Black.

#### 3. Physical Properties:

Description	ASTM Test Method	Unit	Specification
Hardness	D2240	Shore A	70 ± 5
Tensile Strength (Min)	D412	MPa	7
Elongation (Min)	D412	%	150
Compression Set (Max) 70hrs@200°C	D395 Method B	%	25
Heat Ageing (Max) 70hrs @250°C Hardness Change Tensile Change Elongation Change	D471	Shore A % %	0 to+15 -20 max -25 max
ASTM : 1 Oil Ageing(Max) 70hrs@150°C Hardness Change Tensile Change Elongation Change	D471	Shore A % %	-10 to +5 -25 -25
ASTM : 3 Volume Swelling	D471	%	±10

#### 4. Service Temperature: -73°C to + 200°C

#### 5. Application:

- FluoroSilicone has excellent extreme temperature properties and compression set resistance. It's very clean, low odour and taste.
- Fluorosilicone O Rings used in flow control valve assy.

#### 6. Limitations:

- Typically not good for dynamic seals due to friction properties and poor abrasion resistance

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## ISMAT SPECIFICATIONS

### ISM-HNBR 7513– Technical Datasheet

#### 1. Introduction:

ISM-HNBR-7513 base polymer is a Hydrogenated Acrylonitrile Butadiene (HNBR) content that has been hydrogenated to increase saturation of the butadiene segment of the polymer backbone to improve the material properties, include greater thermal stability with excellent resistance to petroleum based oils. Due to this property HNBR O rings are widely used in Valve assy. ACN content is 34%.

#### 2. Product Description:

Chemical Composition: Hydrogenated Acrylonitrile Butadiene  
Colour : Black

#### 3. Physical Properties:

Description	ASTM Test Method	Unit	Specification
Hardness	D2240	Shore A	75 ± 5
Tensile Strength (Min)	D412	MPa	13
Elongation (Min)	D412	%	200
Compression Set (Max)	D395 Method B	%	40
Heat Ageing (Max) Hardness Change Tensile Change Elongation Change	D471	Shore A % %	0 to 7 -20 -35
ASTM : 1 Oil Ageing(Max) Hardness Change Tensile Change Elongation Change	D471	Shore A % %	±10 -20 -30
ASTM : 3 Volume Swelling	D471	%	-10 to +25

#### 4. Service Temperature: -30°C to + 150°C

#### 5. Application:

- HNBR O rings used where Resistance to heat plus petroleum base oils and fuels required. Excellent compression set, tear, and abrasion resistance.
- Used in Low temperature applications & Fuel systems, automotive etc.

#### 6. Limitations:

- Moderate heat resistance and poor weather resistance.

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## ISMAT SPECIFICATIONS

### ISM-NBR-7011 – Technical Datasheet

#### 1. Introduction:

ISM-NBR-7011 base polymer is an Engineering purpose copolymer Compound (NBR) with excellent compression and abrasion resistance. ACN content is 34%. Due to its excellent oil resistance NBR Orings is used in areas where the O rings getting contact with oil.

#### 2. Product Description:

Chemical Composition: Copolymerization of Butadiene and Acrylonitrile  
Colour : Black

#### 3. Physical Properties:

Description	ASTM Test Method	Unit	Specification
Hardness	D2240	Shore A	70 ± 5
Tensile Strength (Min)	D412	MPa	11
Elongation (Min)	D412	%	200
Compression Set (Max)	D395 Method B	%	50
Heat Ageing (Max) Hardness Change Tensile Change Elongation Change	D471	Shore A % %	±15 -25 -35
ASTM : 1 Oil Ageing(Max) Hardness Change Tensile Change Elongation Change	D471	Shore A % %	-5 to +10 -25 -35
ASTM : 3 Volume Swelling	D471	%	-15 to 20

4. **Service Temperature:** -40<sup>0</sup>C to + 100<sup>0</sup>C

#### 5. Application:

- Excellent Oil resistance.
- Excellent compression set, tear, and abrasion resistance.
- Used in Low temperature applications & Fuel systems, automotive etc.

#### 6. Limitations:

- Moderate heat resistance and poor weather resistance.

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## ISMAT SPECIFICATIONS

### ISM-SIL-7007(RED) – Technical Datasheet

#### 1. Introduction:

ISM-SIL-7007(RED) is a General purpose Silicone Rubber Compound.

#### 2. Product Description:

Chemical Composition: Silicon together with carbon, hydrogen & oxygen  
Colour : Red, Yellow

#### 3. Physical Properties:

Description	ASTM Test Method	Unit	Specification
Hardness	D2240	Shore A	70 + 5
Tensile Strength (Min)	D412	MPa	7
Elongation (Min)	D412	%	200
Heat Ageing (Max) Hardness Change Tensile Change Elongation Change	D471	Shore A % %	+10 -20 -30
ASTM : 1 Oil Ageing(Max) Hardness Change Tensile Change Elongation Change	D471	Shore A % %	-15 to 0 -20 -25
Low Temperature Properties	ASTM D1329	°C	TR-10 -41°C

4. **Service Temperature:** -59<sup>0</sup>C to + 175<sup>0</sup>C

#### 5. Application:

- Excellent extreme temperature properties
- O rings, Seals & custom moulded products for food applications, medical devices & FDA applications

#### 6. Limitations:

- Typically not good for dynamic seals due to friction properties and poor abrasion resistance.

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