



AFLAS[®] CB-047 (R&D)

Ultra-high temperature compound solution

DESCRIPTION

AFLAS[®] FFKM Series is a new perfluoroelastomer product line classified as an **FFKM**. AFLAS CB-047 is a full compound of FFKM having the chemical structure derived from tetrafluoroethylene and perfluoroalkylvinylether. This chemical structure offers outstanding resistance to chemicals, oils, solvents, and more. CB-047 is a peroxide-curable FFKM full compound. It is not required to add any filler, however the product can be tweaked for optimal performance depending on application.

CHARACTERISTICS

- Appearance = Black
- Specific gravity = 2.05
- Storage modulus (G') = 480

MATERIAL FEATURES

- Outstanding chemical resistance
- Superior oil resistance
- Outstanding solvent resistance
- Ultra-high heat resistance
- Excellent compression set
- Exceptional mechanical strength
- Excellent processability

END USER BENEFITS

- Highly suitable for extremely harsh and aggressive chemical environments
- Hot service temperature at 260°C, with peak exposure of 280°C

TYPICAL APPLICATIONS

- O-rings
- Gaskets
- Oilfield parts
- Semiconductor parts
- And more...

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CURE AND CONDITIONS

AFLAS CB-047 must be optimally molded and cured to take full advantage of its physical properties. Note that the optimal molding and post-curing condition depends on the intended use. Press cure conditions (temperature and time) should be decided in consideration of various factors, such as the size of parts, required properties and scorch safety.

To achieve the best physical properties, AFLAS CB-047 also requires a post cure. The recommended standard condition is 300°C for ≥ 9 hours under Nitrogen or inert gas. It is recommended to raise temperature gradually up to 300°C. Depending on the size of the part, the cure time must be optimized.

It is recommended to refresh CB-047 by 2 roll milling before use, and it should be used within one (1) day. If the full compound is not processed for an extended period of time resulting in bleeding of curatives, it must be re-milled on the roll. If at any time you have questions or concerns about a specific application, please contact your account manager for assistance.

COMPOUND RPA CURE DATA

150°C, 100CPM, 3° Strain, 12 minutes by RPA-2000

Property	Units	AFLAS CB-047
Min S'	dNm	15.0
Max S'	dNm	117.0
10% Cure	min	1.0
90% Cure	min	3.3

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COMPOUND PROPERTIES

Property	Units	AFLAS CB-047
Tensile Strength	MPa	22.5
100% Modulus	MPa	7.7
Tensile Elongation	%	197
Hardness	Shore A	69
Compression Set (ASTM-type 1 button, 70hrs@ 280°C)	%	10.7
Compression Set (ASTM-type 1 button, 70hrs@ 300°C)	%	19.3
Compression Set (O-ring*, 70hrs @ 280°C)	%	36.3
Compression Set (O-ring*, 70hrs @ 300°C)	%	66.6

Cure Conditions

Press cure: 150°C / 20minutes

Post cure: 300°C / 9 hours in inert.

* JIS B 2401 P-26 / AS568-214 / BS1806-214

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HANDLING PRECAUTIONS

AFLAS CB-047 will turn red when exposed to direct sunlight or UV and the curability will be inhibited. Take precaution to keep the polymer stored in its aluminum packaging and compounding should be completed within a few hours.

The shelf life of AFLAS FFKM Series can be guaranteed by AGC Chemicals for 6 months after date of delivery for unopened packages. Storage and handling facilities should be designed to minimize exposure to extreme temperatures and dusty environments.

AFLAS FFKM Series are stable at normal conditions and are not regulated by the U.S Department of Transportation. Avoid temperatures above 400°C. FFKMs can react with molten alkali metals and finely divided magnesium and aluminum at temperatures above 425°C. Thermal decomposition of this product at temperatures above 400°C will generate hydrogen fluoride, which is corrosive. No polymerization will occur under normal processing conditions.

Wear protective gear and avoid tobacco use at all times when handling fluoroelastomers. Consult your Material Safety Data Sheet for safe handling details or contact your AGC Chemicals Technical Representative for clarification.

NOTE: The data listed here represents typical values for the stated grades of AFLAS® fluoroelastomers. This information should be used as a guide only and not to establish specification limits or design criteria. AGC Chemicals Americas assumes no obligation or liability for any advice furnished by us or for results obtained with respect to this product. All such advice is provided free of charge and the buyer assumes sole responsibility for results obtained in reliance thereon.

For more information and samples contact

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