



product information

AFLAS[®] 200P (SPL-FKM)

DESCRIPTION

AFLAS[®] 200P (SPL-FKM) is a peroxide-curable specialty fluoroelastomer offering improved performance over conventional FKM-type fluoroelastomers in demanding applications found in the oil & gas, chemical process, industrial equipment, food handling, pharmaceutical, heavy duty diesel and automotive industries. AFLAS[®] 200P displays outstanding resistance to heat, acids & bases, many solvents, and ozone. Classified by ASTM D 1418-01 as TYPE IV FKM

MATERIAL FEATURES

- Improved cold temperature performance (T_g = -13°C, TR-10 = -8°C)
- Retains good base resistance and heat tolerance
- Can be solvated and applied as a coating

END USER BENEFITS

- Longer life of seals
- Resists aggressive oils which contain anti-oxidants
- Improved sealing for cold application environments

TYPICAL APPLICATIONS

- Oil seals
- Shaft seals
- O-Rings
- Gaskets
- And more...

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CURE AND CONDITIONS

AFLAS 200P (SPL-FKM) is not cured in the same manner as standard AFLAS “FKM” products (100 and 150 series). The best performing peroxide is Perkadox® P-14Sfl or Vul-Cup® 40KE. TAIC* is the recommended co-agent and is required for the cure. Magnesium Oxide at 3 phr (per hundred rubber) is also recommended.

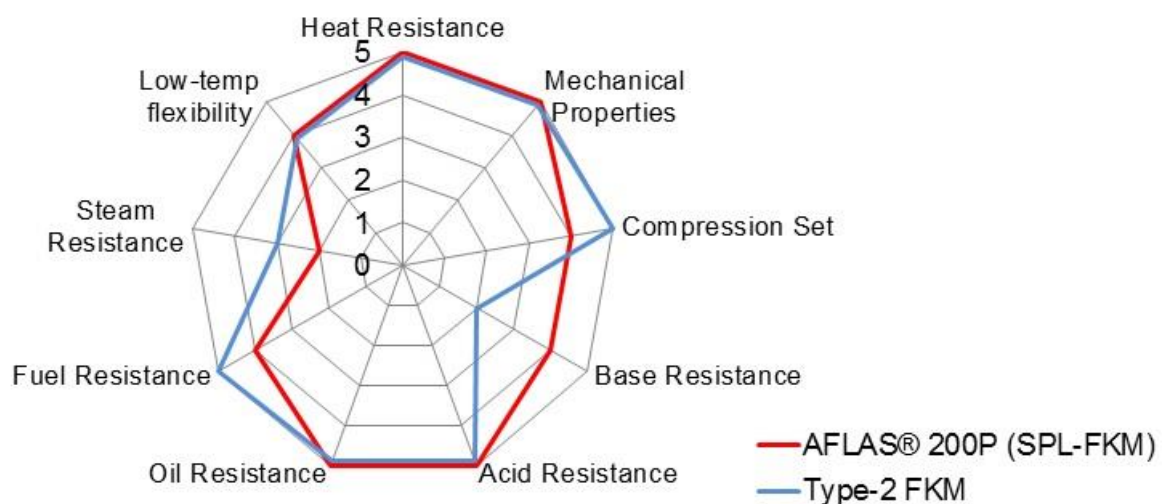
Press cure is accomplished at 170°C for 20 minutes. Press cure conditions (temperature and time) should be decided in consideration of various factors, such as the size of parts, required properties, scorch safety and mold release. Post cure should be conducted at 230°C for 24 hours.

Unlike other AFLAS “FKM” grades (100 and 150 series), AFLAS 200P (SPL-FKM) is not recommended for steam resistant use. Insufficient curing tends to adversely affect the mold release properties. Complete post curing optimizes the compression set. *Triallylisocyanurate

If at any time you have questions or concerns about a specific application, please contact your account manager for assistance.

Perkadox® is a registered trademark of Akzo Nobel Chemicals, B.V.
Vul-Cup® is a registered trademark of Arkema, Inc.

COMPARISON CHART



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AFLAS 200P (SPL-FKM) RPA (CURE) COMPOUND DATA

177°C, 100CPM, 3° Strain, 12 minutes

Curability	Units	AFLAS 200P (SPL-FKM)	Type-1 FKM (2-FKM) (Polyol cure)	Type-2 FKM (3-FKM) (Peroxide)
Min S'	dNm	7.7	4.6	0.8
Max S'	dNm	61.4	77.2	102.9
50% Cure	min	1.7	1.9	0.7
90% Cure	min	6.5	2.9	0.9

AFLAS 200P (SPL-FKM) COMPOUND COMPARATIVE PROPERTIES

Property	Units	AFLAS 200P (SPL-FKM)	Type-1 FKM (2-FKM) (Polyol cure)	Type-2 FKM (3-FKM) (Peroxide)
Tg (Glass transition temperature)	°C	-13	-19	-13
Compression Set (70hrs @ 200°C)	%	23	14	11
Tensile Strength, Yield	MPa/psi	18/2610	15/2176	23/3336
M100	MPa/psi	5/725	6/870	4/580
Elongation	%	270	200	320
Fluorine Content	%	60	66	71
Mooney (ML1+10)	kN/m	90 (100°C) 65 (121°C)	52 (100°C)	50 (100°C)
G' Storage Modulus (nominal) of Raw Gum	kPa	220	N/A	N/A

Formulation(PHR):

AFLAS SPL-FKM Polymer	100
MT 990 Carbon	25
TAIC*	5
Peroxide**	1
Sodium Stearate	1
Magnesium Oxide	3

Cure Conditions:

Press cure: 170°C / 20 minutes

Post cure: 230°C / 24 hours

* Triallylisocyanurate

** 1,3-bis(t-butylperoxy)-diisopropylbenzene

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AFLAS 200P (SPL-FKM) COMPATIBILITY DATA

Heat Resistance 200°C for 1000 hours	Units	AFLAS 200P (SPL- FKM)	Type-1 FKM (2-FKM) (Polyol cure)	Type-2 FKM (3-FKM) (Peroxide)
Retention of Tensile Strength	(%)	90	81	81
Retention of Tensile Elongation	(%)	72	116	116
Change in Hardness	(Points)	+1	+1	+1
50% NaOH aq Resistance 70°C for 720 hours	Units	AFLAS 200P (SPL- FKM)	Type-1 FKM (2-FKM) (Polyol cure)	Type-2 FKM (3-FKM) (Peroxide)
Retention of Tensile Strength	(%)	98	Disintegration	92
Retention of Tensile Elongation	(%)	89	Disintegration	102
Change in Hardness	(Points)	-1	Disintegration	-2
Volume Change	(%)	+1	Disintegration	-7
28% Aq Ammonia Resistance 70°C for 720 hours	Units	AFLAS 200P (SPL- FKM)	Type-1 FKM (2-FKM) (Polyol cure)	Type-2 FKM (3-FKM) (Peroxide)
Retention of Tensile Strength	(%)	84	Disintegration	Disintegration
Retention of Tensile Elongation	(%)	62	Disintegration	Disintegration
Change in Hardness	(Points)	-3	Disintegration	Disintegration
Volume Change	(%)	32	Disintegration	Disintegration
Engine Oil (SM class) Resistance 175°C for 720 hours	Units	AFLAS 200P (SPL- FKM)	Type-1 FKM (2-FKM) (Polyol cure)	Type-2 FKM (3-FKM) (Peroxide)
Retention of Tensile Strength	(%)	95	73	96
Retention of Tensile Elongation	(%)	72	65	107
Change in Hardness	(Points)	-2	+2	-2
Volume Change	(%)	+3	0	-1

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HANDLING PRECAUTIONS

AFLAS Fluoroelastomers are stable at normal conditions and are not regulated by the U.S Department of Transportation. Avoid temperatures above 400°C. Fluoroelastomers 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.

The shelf life of AFLAS Fluoroelastomers can be guaranteed by AGC Chemicals for 6 months after date of delivery for unopened boxes. However the properties are not impacted by storage time. Storage and handling facilities should be designed to minimize exposure to extreme temperatures and dusty environments. 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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