Fluon+™ EA-2000

Adhesive PFA (perfluoroalkoxy) Resin Product Information

Fluon+™ PFA EA-2000 is an adhesive PFA (perfluoroalkoxy) resin. This unique PFA material has been functionalized to facilitate adhesion to other materials, such as various metals, glass (borosilicate glass, glass cloth, etc.) and polyamide/polyimide. The material is supplied in powder form, water-based dispersions and films.

EA-2000 water-based dispersion (JBV-301) is an R&D product with mass produced representative samples available upon request. It can be processed in the same manner as PTFE dispersions and can be used in conjunction with PTFE dispersions to achieve both the characteristics of PTFE and adhesion.

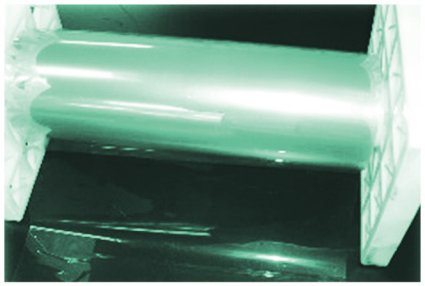
Aqueous dispersion (JBV-301)

- Powder content [wt%]: 40
- Viscosity (60rpm) [mPa·sec]: <50
- Average particle size D50 [µm]: <4
- Particle size D90 [µm]: <7

Powder

Two powder grades:

- **EA-2000 PW50**
  20–50µm (Mean particle size, D50)
- **EA-2000 PW10**
  2–3µm (Mean particle size, D50)



Film

Applications

- Industrial conveyor belts
- Bearings
- PTFE coated wire
- PTFE tube heat exchangers

Typical Physical Properties

* These data are representative and not guaranteed.

Property	Units	Value	Test Method
Dielectric Constant (Dk) @20GHz	-	2.0	ASTM D150
Dielectric Tangent (Df) @20GHz	-	0.0011	ASTM D150
Specific Gravity	g/cm3	2.13	Room Temperature
Glass Tansition Temperature (Tg)	°C	94	DMA
Melting Point (Tm)	°C	300	DSC
5wt% Decomposition Temperature	°C	490	DTA (10°C/min)
Flame Retardancy	-	VTM-0	UL94
Water Absorption	%	0.03	IPC-TM-650 2.6.2
Elastic Modulus	Gpa	0.3	@23°C DMA
Volume Resistivity	Ω·cm	6.5 x 1017	ASTM D257

Adhesive Strength between EA-2000 and Other Materials

Materials	Substrate	Adhesion Strength (N/cm)	
		EA-2000	PTFE
Metal	Low Coarseness Copper Foil (Rz=1.0μm)	19	3
	Coarsened Copper Foil (Rz=0.4μm)	14	1
	SUS316L	8	Not Adhered
	SUS430H	13	Not Adhered
	Tin Foil	13	3
Inorganic Materials	Glass (aminosilane treatment)	>10	Not Adhered
Organic Matter	Polyimide	>10	Not Adhered
	Epoxy	>8	Not Adhered
	Polyamide	15	3

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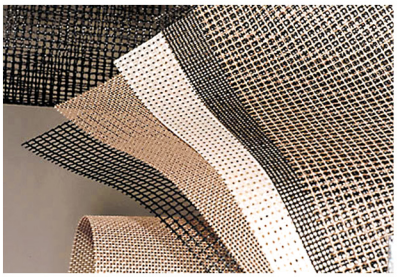

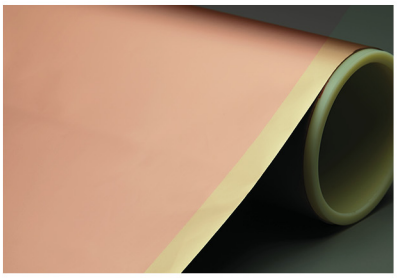

Processing

EA-2000 water-based dispersion (JBV-301 R&D sample) and powders have excellent miscibility with PTFE dispersions, therefore they can be mixed easily.

Example of EA-2000/PTFE Composition:

Dispersion Mixing Ratio (wt%)	85 (PTFE Dispersion*1)	15 (JBV-301)
Mixing Ratio as Fluororesin (wt%)	90 (PTFE Powder)	10 (EA-2000 PW10)

*1: AD911E (Product of AGC) Solid content concentration 61%

Adhesive Characteristics of EA-2000/PTFE Composition and Coefficient of Friction

Coating Resin	Coating film-base material interfacing strength (N/cm)			Coefficient of Friction*1	Dk / Df
	Low Thickness Copper Foil (Rz=1.2μm)	Tin Foil	Glass (Aminosilane Treatment)		
PTFE	3	Not Adhered	2	0.18	2.0 / 0.0004
EA-2000/PTFE Composition	20	14	7	0.22	2.0 / 0.0006

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By blending EA-2000, it is possible to give adhestion to the substrate with a low coefficient of friction.

AGC

AGC Chemicals Americas, Inc.
55 E. Uwchlan Avenue, Suite 201
Exton, PA 19341
United States of America

Telephone: +1 610-423-4300
Toll Free (US only): 800-424-7833
Fax: +1 610-423-4305

www.agcchem.com
Visit our website for compliance information and industry certifications.