

# Algoflon® DF 681 F

## polytetrafluoroethylene

Algoflon® DF 681 F is a white fine coagulated powder and is produced without any intentional use or addition of PFOA. It is designed for paste extrusion and is particularly recommended for manufacture of both medium to high reduction ratio (RR) tubes and wire insulation.

Algoflon® DF 681 F meets ASTM D4895-10, Type 1, Grade 3, Class D requirements.

Algoflon® DF 681 F shows low extrusion pressure and excellent dimensional stability during processing. The final items exhibit smooth surface and good mechanical properties.

Main features of Algoflon® DF 681 F include:

- Smooth surface
- Excellent clarity
- Good adhesion
- Optimum electrical properties
- Low permeability
- High burst pressure
- Excellent dimensional stability

### General

Material Status	• Commercial: Active	
Availability	• Asia Pacific • Europe	• North America
Features	• Chemical Resistant • Good Processing Stability • Good Thermal Stability	• High Clarity • Low Friction
Uses	• Aerospace Applications • Automotive Applications • Electrical/Electronic Applications	• Industrial Applications • Tubing • Wire & Cable Applications
Appearance	• White	
Forms	• Powder	

### Physical

	Typical Value	Unit	Test method
Specific Gravity	2.17		ASTM D792
Average Particle Size	550	µm	Internal Method
Bulk Density	500	g/l	ASTM D4895

### Mechanical

	Typical Value	Unit	Test method
Tensile Strength	35.0	MPa	ASTM D4895
Elongation at Break	400	%	ASTM D4895

### Thermal

	Typical Value	Unit	Test method
Thermal Instability Index	< 10.0		ASTM D4895

### Additional Information

	Typical Value	Unit	Test method
Reduction Ratio - range	100 to 2500		Internal Method
Rheometer Pressure - @ RR 1:1600	48.0	MPa	ASTM D4895
Stretching Void Index	< 50.0		ASTM D4895

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### Processing

- Algoflon® DF 681 F is processed according to methods conventionally used for paste extrusion. Initially the powder is mixed with a lubricant to produce a paste. This is then compacted into a preform and extruded through a finishing die using a ram extruder. The lubricant is immediately removed and then the dried extrudate is sintered and cooled to attain the finished tubes or wire insulation. The mixing, preforming, extrusion and heating steps must all be carefully controlled to produce defect free products.

### Storage and Handling

- Algoflon® PTFE fine coagulated powders must be stored and handled carefully to avoid excessive shearing and particle fibrillation. Fibrillation is irreversible and damaged particles can appear as defects in manufactured articles. PTFE fine coagulated powders must be handled below 19°C because above this temperature the powders are softer and can be more easily laminated. It is recommended sieving of powders below 19°C before adding lubricant. Strong vibrations and shocks must be avoided as much as possible for prevent lumps formation. Storage and transportation should be carried out in the range 5 - 19°C. Moreover, the powders must be stored in a dry room because the absorption of moisture could negatively affect its processing. Storage and handling facilities should be clean since even very small foreign particles can cause defects in finished products. Keep resin drums closed and clean. Good housekeeping and careful handling are essential.

### Safety and Toxicology

- Before using Algoflon® PTFE fine coagulated powders consult the product Material Safety Data Sheet and follow all label directions and handling precautions. As with all PTFE materials, handling and processing should only be carried out in well ventilated areas. Vapor extractor units should be installed above processing equipment. Fumes must not be inhaled and eye and skin contact ought to be avoided. In case of skin contacts wash with soap and water. In case of eye contact flush with water immediately and seek medical help. Do not smoke in areas contaminated with powder, vapor or fumes. See Material Safety Data Sheet for detailed advice on waste disposal methods.

### Packaging

- Algoflon® DF 681 F is packaged in 25 kg non returnable drums.

### Additional Technical Information

- For Material Safety Data Sheet or additional technical information consult your Solvay Specialty Polymers sales representative, or contact us by e-mail.
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### Notes

Typical properties: these are not to be construed as specifications.



Safety Data Sheets (SDS) are available by emailing us or contacting your sales representative. Always consult the appropriate SDS before using any of our products.

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