DAPCO™ 18-4F

Dapco™ 18-4F is a two-component, solvent-free, thixotropic silicone paste. Dapco™ 18-4F is most commonly used as a coating, sealant, or filleting material in the construction, repair and maintenance of all types of aircraft. The product can be applied using a variety of methods and is especially useful where fire resistance, exposure to phosphate ester fluids, and/or exposure to extreme temperatures -65°F (-54°C) to 400°F (204°C) are major considerations. The product is available in a variety of kit sizes including: ½ pint, pints, quarts, gallons, and 55 gallon drums. (Contact D Aircraft for special packaging requests).

Features and Benefits

- Environmentally friendly formulation, free of heavy metals and solvents
- Good adhesion to a variety of substrates when used with Dapco™ 1-100 Primer
- Excellent fire resistance, 2000°F (1093°C) catastrophic protection for 15 minutes.
- Excellent weatherability
- Performance at low operating temperatures
- Good resistance to chemicals commonly used in aerospace applications
- Qualified to Boeing BMS 5-63 & Pratt & Whitney PWA36751 specifications
- Repairable with either Dapco™ 18-4F or Dapco™ 2100 Primerless Firewall Sealants

CHARACTERISTICS

Table 1 | Physical Properties

Property	Part A	Part B	Mixed
Solids, %	100	100	100
Consistency	Thixotropic Paste	Viscous Liquid	Thixotropic Paste
Density, lb/gal (kg/L)	12.5 (1.50)	9.0 (1.08)	12.2 (1.47)
Cured Specific Gravity	1.47		
Shore Hardness ASTM D 2240	Shore A: 50		
Shelf Life[1]	12 months at or below 75°F (24°C) from date of shipment		
Shop Life[2]	4 hours at or below 75°F (24°C)		

[1] Keep containers tightly sealed.
[2] Shop life referred to as working life of product after mixing.

Table 2 | Product Availability

Property		
Color	Part A Part B Mixed	Dark Green Blue Dark Green
Kit Size*	0.50 pint Pint Quart Gallon 55 Gallon	

*Contact D Aircraft for special packaging requests.

Table 3 | Flammability Properties of Dapco™ 18-4F

Property	DAPCO 18-4F	Substrate
Flame Resistance BMS 5-63	Flame Penetration: None	0.050 in (1.27 mm) Titanium, TI-6AL-4V

PROPERTIES

When cured in accordance with the recommended schedule, the following typical properties are developed:

Table 4 | Mechanical Properties of Dapco™ 18-4F

Property	DAPCO 18-4F[1]	Substrate
Lap Shear ASTM D 1002	psi (Mpa)	0.050 in (1.27 mm) Included: Stainless Steel, Titanium, Aluminum (bare), and Aluminum (bare) primed
Control 7 day aging at 400°F (204°C) 7 day exposure at 120°F (49°C) and 100% R.H. 7 day immersion in Skydrol® Hydraulic Fluid	200 (1.4) 350 (2.4) 250 (1.7) 200 (1.4)	
Compression Set, 72 hrs at 350°F (177°C) ASTM D395	~ 55%	

PROCESSING

HANDLING

Mixing

Parts A and B must be mixed in the correct ratio and mixed thoroughly. When using mechanical methods, care should be taken to avoid high shear equipment that may destroy thixotropy. The recommended mix ratio for Dapco™ 18-4F is:

Parts	Weight	Volume
Part A	100	11.7
Part B	7	1

Working Life

The working life of the mixture is 4 hours at 75°F (24°C) after mixing. Useable life can be extended by packaging the mixed product into plastic cartridges and then freezing immediately. Product can be mixed and frozen at or below 0°F (-18°C) for 28 days. If this practice is followed, the frozen cartridges should be thawed uniformly prior to using.

APPLICATION

Applying

The substrate must be free from contamination, i.e. dirt, oil grease, etc. Clean the surface by wiping with a suitable solvent/cleaning agent and dry thoroughly. Apply Dapco™ 1-100 primer and allow to dry for 30 to 90 minutes, then apply Dapco™ 18-4F Sealant (Note: Dapco™ 18-4F must be applied within 90 minutes after the primer has dried). When circumstances prevent immediate application of Dapco™ 18-4F, the surface must be cleaned thoroughly to remove the primer before repeating the entire process. Handling strength is achieved in 24 hours at 75°F (24°C) (loads on the product should be limited until full cure is achieved).

Curing

Dapco™ 18-4F is generally cured at ambient temperatures above 55°F (13°C). Cure can be accelerated by warming to 150°F (66°C) for a minimum of 4 hours. Moisture helps develop final properties (a relative humidity ranging between 30% -70% is preferred). Optimum physical properties are developed when the product is cured a minimum of seven days for sealing applications and 14 days for faying surface applications at 75°F (24°C) and 50% R.H.

Cure may be inhibited by proximity or contact with a variety of materials including old RTV silicone sealant of the tin-cure variety, polysulfide, sulfur, amine and amide compounds, natural, nitrile or other organic rubbers, paper masking tape, plasticizers, lubricants, release agents or solvents.

Cleanup

Before the material has cured, the excess may be removed using commercial solvent. For optimum removal of silicone residue prior to paint or coating application, Dapco™ 2000 diluent is recommended.

HEALTH & SAFETY

Please refer to the product SDS for safe handling, personal protective equipment recommendations and disposal considerations.

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