



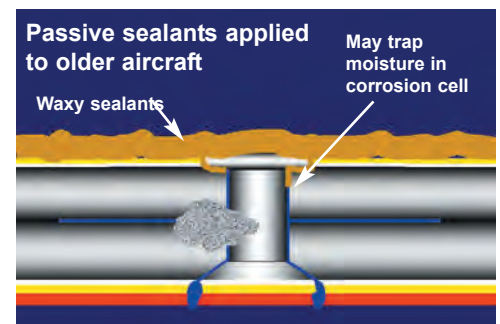
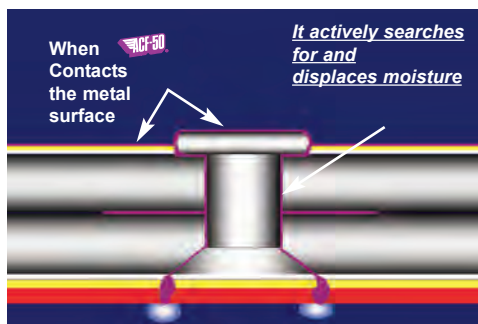
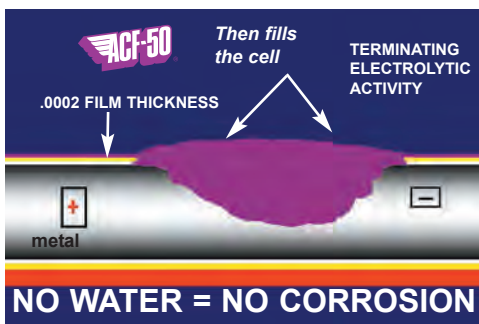
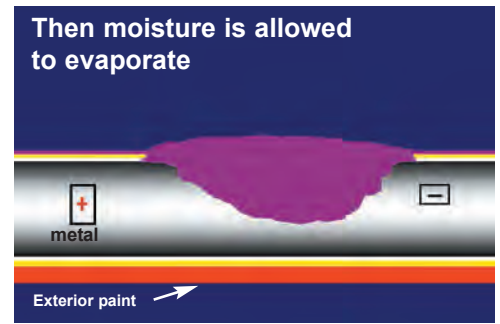
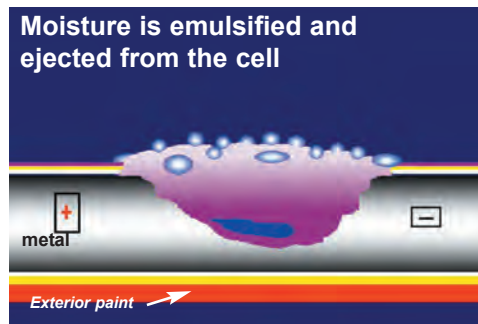
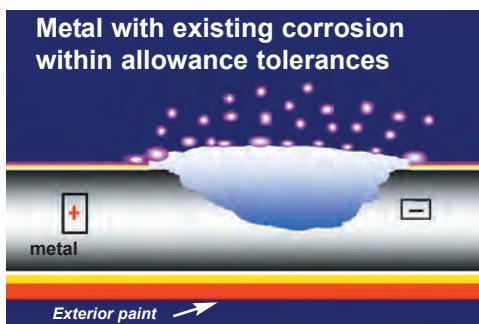
TECH SPECS:

CORROSION

A SIMPLE EXPLANATION: Corrosion simply stated is a natural phenomenon which destroys most metals by either a chemical or electrochemical reaction. The metal is converted, usually with the help of an electrolyte, into a stable metallic compound such as an oxide, hydroxide, or sulfate. The rate at which metals corrode depends greatly on the environment they are exposed to, and the amount of preventive maintenance they receive. Metals that are exposed to marine atmospheres, moisture, tropical temperatures, and industrial chemical atmospheres have the highest rate of corrosion. The tendency of metals to corrode creates a serious problem in the area of aircraft operation.

ACF-50 ANTI-CORROSION FORMULA

HOW IT WORKS: ACF-50, Anti-Corrosion Formula, is a state of the art anti-corrosion lubricant compound, specifically designed for the Aero Space Industry. It is an ultra Thin Fluid Film Compound (TFFC) that actively treats metal using advanced polar bonding technology. As seen from the diagrams, ACF-50's synthetic inhibitors and active chemistry penetrates through the oxide deposits (white powder) to the base of the corrosion cell where it emulsifies, encapsulates, and then lifts the electrolyte away from the metal surface. ACF-50 then allows this moisture to evaporate while providing an atmospheric barrier that prevents further moisture contact. With the electrolyte removed the corrosion process is halted. ACF-50 actively penetrates and "creeps" into the tightest seams, lap joints, micro cracks, and around rivet heads, displacing moisture and other corrosive fluids (orange juice, coke, coffee, salt water) in these corrosion prone areas. ACF-50's thin film acts like an "OFF SWITCH" for corrosion remaining effective for up to 24 months.





Being “**Pro Active**” about corrosion control is the best way to protect your investment. Regular ACF-50 treatments reduce maintenance costs and improve overall flight safety. Lear Chemical's pioneered application methods and specially designed equipment, deliver ACF-50's penetrating fog to all critical aircraft structure. Technicians, at ACF-50 Corrosion Treatment Centers, offer complete airframe applications usually timed to your GA annual. Only ACF-50's advanced corrosion control properties, protect both the airframe and avionics systems. The US government, commercial airlines, fleet operators, and general aviation users have, through years of testing and use, proven ACF-50 delivers tough anti-corrosion protection. ACF-50 has endorsements or approvals from nineteen airframe OEM's and meets industry (AIRBUS, Boeing, Douglas, Mil-Spec) anti-corrosion performance requirements. The FAA also recognizes ACF-50 as a “suitable corrosion preventative compound.”



ACF-50 is available in convenient package sizes to handle your specific application requirements.

We offer a choice in application equipment... sized to accomodate your needs



HAND HELD SYSTEM #50000



STANDARD SYSTEM #50003



ACF-50'S PENETRATING FOG



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ACF-50[®] GET THE FACTS

Questions Asked: Answers to Know!

Q. Is ACF-50 approved by the US Government?

A. Yes ACF-50 is US Government performance qualified to Mil-C-81309E, Type II class I.

Q. Does ACF-50 meet any other aerospace industry standards or have any OEM approvals?

A. Yes ACF-50 meets aerospace anti-corrosion requirements for many OEM's; **AIRBUS, BOEING, DOUGLAS** and others, see the reverse side of this document for a complete listing as well as additional OEM recommendations.

Q. How long has Lear Chemical been producing Thin Fluid Film anti-corrosion compounds and how long has ACF-50 been in the marketplace?

A. Lear has twenty five years experience as a chemical manufacturer and ACF-50 has an excellent fourteen year track record as a product used by industry professionals who want performance they can trust.

Q. Is ACF-50 Toxic?

A. No. Complete toxicology tests (oral-eye-dermal) have been performed on ACF-50 by world renowned Hazelton Laboratories. Their testing concluded that ACF-50 is Non-Toxic according to EPA and OCED standards.

Q. What does the FAA think about ACF-50?

A. While the FAA is not in the habit of providing general approvals they do have at least two criteria for accepting a product. Their primary method for acceptance is for an OEM to list the product in their aircraft maintenance manual. The second method is for a product to meet a Mil-Spec. Since ACF-50 meets both of these criteria the FAA finds ACF-50 an acceptable product as a general corrosion preventative for use on aircraft (letter dated Aug. 13/96).

Q. Does ACF-50 meet US State requirements for Volatile Organic Content (VOC)?

A. Yes ACF-50 is VOC compliant in all fifty states. ACF-50's VOC content is well below the tough air quality control regulations in California.

Q. How often does ACF-50 need to be applied to the airframe?

A. We recommend a minimum of once every two years. Shorter or longer intervals will be prescribed depending on the aircraft's operational environment.

Q. What type of equipment do I need to apply ACF-50?

A. The most economical way to treat an airframe is with our specialty designed spray system. Its light weight, compact size, ergonomic design, and aircraft quality construction provides for efficient product usage and minimal labor investment. The system works on 40 psi. @, 4 to 5 CFM.

Q. Does ACF-50 loosen rivets?

A. No. ACF-50's low shear formula will penetrate around a tight rivet removing moisture without causing it to loosen. Unlike other products ACF-50 does not contain EP (extreme pressure) additives. The presence of these undesirable additives could cause rivets to loosen and facing surfaces to lose their structural cohesiveness.

Q. Will ACF-50 harm aircraft plastics, paint, or wiring?

A. ACF-50 was tested for stress crazing on acrylic plastic and for effect on aircraft grade paints with both tests showing no deleterious effects. ACF-50 was tested on polyimide insulated wire and found to have no negative effects.

SUGGESTED APPLICATIONS:

1. SINGLE ENGINE & LIGHT TWINS

Spray into: wing sections, fuselage, vertical & horizontal stabilizers, hinges, teleflex cables, air vent cables, trim cables, throttle cables, battery boxes, engine compartments, avionics, antenna mounts.

2. ROTORWING AIRCRAFT

Spray into: tail boom section, engine compartments, strap pack, landing gear, air vent cables, rotor head, grip areas, avionics, antenna mounts, cannon plugs.
Spray or wipe on blades.

3. CARGO AIRLINES

Spray into: wing sections, fuselage, vertical & horizontal stabilizers, landing gear compartments, micro switches, avionics, cannon plugs, cargo door brackets, garbage chutes, galleys, lavatory areas, belly skin sections, main spar sections.

4. FLOAT EQUIPPED & AMPHIBIOUS

Spray into: floats, fuselage, vertical & horizontal stabilizers, wing sections, bilge area, exterior of motors, connectors, cannon plugs, avionics, micro switches, antenna mounts.

5. TURBO PROPS / BUSINESS JETS

Spray into: trim drum actuators, micro switches, landing gear and compartments, wheel hubs, thrust reverse mechanisms. Wipe on nacelles.

ACF-50 "the Professionals Choice" gives you the peace of mind that your investment is receiving the best possible protection.

ACF-50; PERFORMANCE QUALIFIED

Mil-C-81309E Type II & III

Characteristics	Requirements	Test Para.	Found
-Minimum flash point	60°C (140°F)	4.7.1	Conforms
-Synthetic sea water-sulfurous acid spray	Type II: No visible corrosion of carbon steel after 2 cycles. Type III: No visible corrosion of 410 steel after 8 cycles.	4.7.2	Conforms
-Synthetic sea water displacement	No visible corrosion.	4.7.3	Conforms
-Removability	Not more than 3 cycles to remove.	4.7.4	Conforms
-Abrasives	Non present	4.7.5	Conforms
-Maximum film thickness	Type II: 0.0005 inches Type III: 0.0002 inches	4.7.6	Conforms
-Sprayability	Sprayable	4.7.7	Conforms
-Corrosivity	No visible pitting, etching or dark discoloration. No weight change (milligram/cm ²) greater than 0.5 for magnesium, cadmium, and zinc nor greater than 0.2 for aluminum, copper, and brass.	4.7.8	Conforms
-Staining	No visible evidence of staining or other deleterious effects.	4.7.9	Conforms
-Minimum dielectric breakdown	25,000 volts	4.7.10	Conforms 38,000 volts
-Mixability of compounds	No evidence of separation	4.7.11	Conforms
-Lubricity of compounds	Less than 0.20	4.7.12	Conforms
-Effect on electric components	No Significant change in capacitance, dissipation factor and conductance of coil forms and capacitors. For coils no significant change in the Q and amount of capacitance to resonate the coil. No significant change in the resistance of resistors. A change greater than 1/2 the allowed tolerance of the component shall be considered as significant.	4.7.13	Conforms
-Effect on electric connectors	No significant increase in resistance between connected pins or decrease in resistance between adjacent pins.	4.7.14	Conforms

ADDITIONAL ACF-50 TEST

DATA

TEST IDENTITY	TEST METHOD	RESULTS
BMS 3-23E		
Table I		
-Flash Point	ASTM D93	Pass
-Sprayability	MIL-C-1617D	Pass
-Low-Temperature Adhesion	MIL-C-1617D	Pass
-Nonvolatile Content	ASTM D1644	QPL Value
-Detectability		Pass
-Removability		Pass
-Storage Stability		Pass
-Drying Time		Pass
-Compatibility with Cadmium		Pass
Douglas Aircraft CSD #1		
- Painted Surfaces	ASTM F 502	Conforms
- Residue Surfaces	ASTM F 485	Conforms
- Sandwich Corrosion Test		Conforms
- Stress Cracking Acrylic Plastics	ASTM F 484	Conforms
- Immersion Corrosion Test	ASTM F 483	Conforms
- Cadmium Removal Test	ASTM F 1111	Conforms
Douglas Aircraft DMS 2150		
- Film Characteristic		Conforms
- Product Composition		Conforms
- Appearance		Conforms
- Toxicity		Conforms
- Flash Point	ASTM D-56	Conforms
- Nonvolatile Content	ASTM D-1644A	Conforms
- Viscosity	ASTM D-445	Conforms
- Salt Fog Exposure	ASTM B-117	Conforms
- Water Displacement		Conforms
- Removability		Conforms
- Storage Stability		Conforms
Table II		
-Water Displacement Ability	MIL-C-1617D	Pass
-Viscosity		QPL Value
-Corrosion Inhibiting Characteristics	FED-STD 791 (ASTM G 34)	Pass
-Functional Penetration Test		Pass
Airbus Industrie		
TN A 007.10138		
Type 1 Grade 1 / 2		
Volatile Organic Content		
-California Air Quality Compliant	ASTM 2369	>166.9g/L
Misc.		
-Humidity Resistance	AMS 3066B	Conforms
-Hydrogen Embrittlement	ASTM F 519	Conforms
-Polyimide Insulated Wire	MIL-C-87937B	Conforms

O.E.M. Approvals

ATR REGIONAL TRANSPORT

BELL HELICOPTER TEXTRON

BOEING AIRCRAFT
(McDonald Douglas Helicopter Company)

BOEING HELICOPTER
(McDonald Douglas Corporation)

BOMBARDIER REGIONAL
AIRCRAFT DIVISION

BRITISH AEROSPACE

CANADAIR

CONCORDE BATTERY CORP.

EXTRA AIRCRAFT

GULFSTREAM AEROSPACE

HILLER AIRCRAFT CORPORATION

LAKE AIRCRAFT

PILATUS AIRCRAFT

RAYTHEON CORP.
(Beech Aircraft Corp.)

SIKORSKY AIRCRAFT

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*Anti -Corrosion Formula
is approved of or
authorized for use by:*

AIR TRACTOR ATR REGIONAL TRANSPORT	CANADAIR CESSNA CONCORDE BATTERY CORPCORP EXTRAIR CRAFT ENSTROM TECNAM	GULFSTREAM AEROSPACE HILLER AIRCRAFT LAKE AIRCRAFT MCDONNELL DOUGLAS CORP MD HELICOPTER MOONEY AIRCRAFT	PILATUS AIRCRAFT ROBINSON RAYTHEON-BEECH ROLLS ROYCE SIKORSKY SCHWEIZER VANS AIRCRAFT
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