



AEROSPACE INFORMATION REPORT

AIR5693

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Reaffirmed 2014-10

Compatibility of PTFE Hose Assemblies With Typical Fluids
Found in Aerospace Applications

RATIONALE

AIR5693 has been reaffirmed to comply with the SAE five-year review policy.

FOREWORD

AIR5693 is presented as a resource that lists the compatibility of several common fluids found in aerospace systems that may come in contact with polytetrafluoroethylene (PTFE) lined hose assemblies. This document is presented for information to the aerospace engineering community. It is incumbent upon the project engineer to confirm fluid compatible under all operational conditions.

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1. SCOPE:

The scope of this document is limited to the compatibility of typical fluids that may come in contact with PTFE hose assemblies. PTFE hose assemblies may be braided with CRES wire, polyester or para-aramid fibers. Hose assemblies may be equipped with aluminum, CRES, titanium or nickel alloy fittings; and with fire resistant cover materials. All of these constituent materials of PTFE hose assemblies must be compatible with all of the fluids found in any particular application.

1.1 Purpose:

The purpose of AIR5693 is to provide a reference listing the compatibility between the listed fluids and the common types of materials found in PTFE aerospace hose assemblies. It is incumbent upon the responsible engineer to ensure all of the materials used within their system are compatible.

2. APPLICABLE DOCUMENTS:

The following publications form a part of this document to the extent specified herein. The latest issue of SAE publications shall apply. The applicable issue of other publications shall be the issue in effect on the date of the purchase order. In the event of conflict between the text of this document and references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

2.1 SAE Publications:

Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

AMS-QQ-A-225/	Aluminum Alloy, Bar, Rod and Wire or Special Shapes; Rolled, Drawn or Cold Finished; General Specification for
AMS-QQ-A-367	Aluminum Alloy Forgings
AMS-QQ-S-763	Steel Bars, Wire, Shapes and Forgings Corrosion Resistant
AMS 4117	Aluminum Alloy, Rolled or Cold Finished Bar, Rods and Wire and Flash Welded Rings, 1.0Mg - 0.60Si - 0.28Cr - 0.20Cu, Solution and Precipitation Heat Treated
AMS 4127	Aluminum Alloy, Forgings and Rolled or Forged Rings, Solution and Precipitation Heat Treated
AMS 4921	Titanium Bar, Wire, Forgings and Rings Commercially Pure 70 ksi (483 MPa) Yield Strength

2.1 (Continued):

AMS 4928	Titanium Alloy, Bars, Wire, Forgings and Rings, 6.0Al - 4.0V, Annealed
AMS 4965	Titanium Alloy, Bars, Wire, Forgings and Rings, 6.0Al - 4.0V Solution Heat Treated and Aged
AMS 5581	Nickel Alloy, Corrosion and Heat Resistant, Seamless or Welded Tubing, 61Ni - 21.5Cr - 9.0Mo - 3.7(Cb+Ta) Annealed
AMS 5639	Steel, Corrosion Resistant, Bars, Wire, Forgings, Tubing and Rings, 19Cr - 10Ni, Solution Heat Treated
AMS 5643	Steel, Corrosion Resistant, Bars, Wire, Forgings, Tubing and Rings, 16Cr - 4.0Ni - 0.30(Cb+Ta) 4.0Cu Solution Heat Treated, Precipitation Hardenable
AMS 5644	Steel Bars and Forgings, Corrosion Resistant
AMS 5645	Steel, Corrosion Resistant, Bars, Wire, Forgings, Tubing and Rings 18Cr - 10Ni - 0.40Ti, Solution Heat Treated
AMS 5647	Steel, Corrosion Resistant, Bars, wire, Forgings, Tubing and Rings 19Cr - 9.5Ni Solution Heat Treated
AMS 5666	Nickel Alloy, Corrosion and Heat Resistant, Bars, Forgings, Extrusions and Rings 62Ni - 21.5Cr - 9.0Mo - 3.65(Cb+Ta) Annealed
AS604	Hose Assembly, Tetrafluoroethylene, 400°F, 3000 psi Hydraulic Heavyweight
AS611	Tetrafluoroethylene Hose Assembly Cleaning Method
AS614	Hose Assembly, Polytetrafluoroethylene, Metallic Reinforced, 4000 psi, 400°F, Heavy Duty, Hydraulic and Pneumatic
AS620	Hose Assemblies, Convuluted Polytetrafluoroethylene Metallic Reinforced, High Temperature, Medium Pressure, Aircraft
AS1072	Sleeve, Hose Assembly, Fire Protection
AS1227	High Temperature Low Pressure Hose Assembly, Convuluted-, Tetrafluoroethylene-, For Aerospace