

Hydraulic Fluids

Most aircraft manufactures require specific fluids for their hydraulic systems. **Always refer to your aircraft manufacturer's maintenance instructions for the proper fluid.**

All Grove brake systems incorporate Buna-N (Nitrile) O-Ring seals that are compatible with MIL-H-5606 hydraulic fluid which has been the aircraft industry standard for many years.

MIL-H-5606 hydraulic is a mineral-oil based fluid with excellent operating properties over a temperature range of -65°F to 274°F. A major deficiency of MIL-H-5606 is its high degree of flammability. Because of this, the commercial aircraft industry has developed and uses hydraulic systems based on phosphate-ester based hydraulic fluids. However, these fluids ARE NOT compatible with MIL-H-5606 or its systems.

The military led the way in developing a more flame resistant hydraulic fluid that is compatible and miscible with MIL-H-5606. As a result, a synthetic-hydrocarbon based fluid MIL-H-83282 (now MIL-PRF-83282) was developed which is superior to MIL-H-5606 (now MIL-PRF-5606) in fire resistant properties, but lacks good qualities in low temperature viscosity.

More recently MIL-PRF 87257 was introduced in order to address the concerns over the low temperature viscosity weakness of MIL-PRF-83282.

Bottom Line: MIL-H-5606 has been replaced with MIL-PRF-83282 and MIL-PRF-87257. **Each of these fluids, and their associated systems, are compatible and miscible with each other.** You can mix any combination and/or amount of these fluids together without any ill effects.

If, and/or when, you change over from MIL-H-5606 you can either:

1. drain your hydraulic system and refill with MIL-PRF-83282 or MIL-PRF-87257, or
2. merely top off the reservoir with MIL-PRF-83282 or MIL-PRF-87257 as needed.

Both methods have been used with great success with no reported problems.