

Carrier and lubricant deposition solvent applications using 3M™ Performance Fluids

When creating new coatings, lubricants and other formulations, it is crucial to have the appropriate solvency, surface tension, and boiling point, as well as non-flammability. These factors can significantly impact your product quality, as well as how the product performs for your customer. That's why we developed 3M™ Performance Fluids, offering a wide variety of solutions for you to choose from.

| Property | Unit | 3M™ Performance Fluid | | | | |
|---------------------------------|------------------------------------|---|---------------------|---------------------|-----------|---------------------|
| | | PF-5052 | PF-5056 | PF-5058 | PF-5060 | PF-7600 |
| Boiling Point | °C (F) | 50 (122) | Varies ^a | Varies ^a | 56 (132) | 131 (268) |
| Flash Point ^b | °C (F) | None | None | None | None | None |
| Vapor Pressure | kPa | 36.4 | Varies ^a | Varies ^a | 30.9 | 0.96 |
| Heat of Vaporization | kJ/kg | 105 | Varies ^a | Varies ^a | 88 | 116 |
| Liquid Density | g/cm ³ | 1.70 | 1.69 | 1.75 | 1.68 | 1.55 |
| Kinematic Viscosity | cSt | 0.4 | 0.8 | 0.9 | 0.38 | 1.1 |
| Specific Heat | J kg ⁻¹ K ⁻¹ | 1100 | Varies ^a | Varies ^a | 1100 | 1100 |
| Surface Tension | mN/m | 13 | Varies ^a | Varies ^a | 12 | 18 |
| Solubility of Water in Fluid | ppm by weight | 14 | <20 | <15 | 10 | 410 |
| Solubility of Fluid in Water | ppm by weight | <5 | <5 | <5 | <5 | <10 |
| Solubility | Fluorocarbon | Very High | Very High | Very High | Very High | Very High |
| | Hydrocarbon | Low | Low | Low | Low | Medium ^c |
| Plastic Elastomer Compatibility | – | 3M™ Performance Fluids are compatible with most plastics and elastomers. Contact 3M for more information. | | | | |

Results are typical. Not for specification purposes. All values @ 25°C unless otherwise specified.

^a Product composition is variable. Typical boiling point for 3M fluid PF-5056 is 40-60°C (104-140°F). Typical boiling point for 3M fluid PF-5058 is 80-100°C (176-212°F).

^b Per closed cup flash point, tested in accordance with ASTM D3278 test method.

^c 3M fluid PF-7600 is a segregated hydrofluoroether, and therefore, has higher hydrocarbon solubility than the perfluorocarbons.

3M EMSD Medical Device Policy

These 3M products are intended for use as process solvents in applications, such as formulating coatings and lubricants. They are not intended, nor approved, for incorporation into medical devices or for use in pharmaceuticals. 3M will not support applications such as lung perfusion or blood substitutes that involve temporary or permanent implantation of these 3M products. [Read a complete statement](#) of 3M Electronics Materials Solutions Division's Global Policy regarding the sale and use of products for medical and pharmaceutical applications.

IMPORTANT NOTICE: The technical information, recommendations and other statements contained in this document are based upon tests or experience that 3M believes are reliable, but the accuracy or completeness of such information is not guaranteed. Contact your local 3M representative or visit 3M.com/electronics for more information. Warranty and Limitation of Liability: if there is a defect in this product, your exclusive remedy shall be product replacement or refund of the purchase price. **3M MAKES NO OTHER WARRANTIES OR CONDITIONS, INCLUDING ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** 3M will not be liable for any direct, indirect, special, incidental or consequential damage related to the use of this product.

Electronics Materials Solutions Division

3M Center, Building 224-3N-11
St. Paul, MN 55144-1000

Phone 1-800-810-8513
Web www.3M.com/electronics

©2016 3M. All rights reserved.
3M is a trademark of 3M Company.
60-5002-0813-1
9/2016