



# FluoSolv® 7100DL

## 3M Novec 7100DL Replacement Fluid

### Technical Information

## Azeotropic Vapor-Degreasing Solvent

### Introduction

FluoSolv® 7100DL is a clear, colorless, ultra-high-purity hydrofluoroether (HFE), engineered as an exact replacement for 3M Novec 7100DL. It matches Novec 7100DL in ion, metal, particulate, and non-volatile residue control (1 ppm NVR) and is optimized for electronics manufacturing, precision cleaning, and lubricant deposition. The fluid is non-flammable, non-conductive, VOC-exempt in the U.S., non-ozone-depleting, low in toxicity, and thermally stable.

### Key Features & Benefits

**Ultra-high purity:**  $\leq 1$  ppm non-volatile residue; tightly controlled limits on ions, metals, and particulates

**Exceptional solvent performance:** low surface tension ( $\sim 13.6$  mN/m) and low viscosity ( $\sim 0.38$  cSt at  $25^\circ\text{C}$ ) enable excellent wetting, rinsing, and cleaning of micro-features

**Safe and stable:** non-flammable, thermally/chemically stable, VOC-exempt under U.S. EPA rules

**Low toxicity:** practically non-toxic via inhalation or oral exposure, with an occupational exposure guideline of 750 ppm (8-hour TWA)

**Environmentally responsible:** zero Ozone Depletion Potential (ODP = 0), low Global Warming Potential ( $\sim 297$ ), and short atmospheric lifetime ( $\sim 3.8$ – $4.1$  years)

### Applications

FluoSolv® 7100DL is tailored for high-purity electronics and industrial uses, including:

- **Hard disk drive media lubrication:** deposition of fluorinated lubricants onto media surfaces and processing of head gimbal assemblies
- **Precision cleaning:** removal of particulates, flux residues, and specialty contaminants in semiconductor and aerospace manufacturing
- **Deposition solvent:** for coating and manufacturing applications requiring strict contaminant control
- **High reliability manufacturing:** use in environments where material purity and minimal residues are essential

### Material Compatibility

FluoSolv® 7100DL is compatible with a wide variety of **metals, plastics, and elastomers**, as documented from equivalence with Novec 7100DL:

- **Metals:** aluminum, copper (may exhibit slight oxidation), carbon steel, stainless steel (AISI 300), brass, molybdenum, tantalum, tungsten, Cu/Be alloy (C172), Mg-alloy AZ32B
- **Plastics:** acrylic (PMMA), polyethylene, polypropylene, PET, epoxy, polyester, polycarbonate, ABS, phenolic
- **Elastomers:** EPDM, EPR (nitrile), butyl rubber (preferred for long exposure), natural rubber; note that silicone, PTFE, FFKM/FKM may absorb and swell over time

Extended exposure to fluorinated elastomers or PTFE may result in absorption; compatibility testing is recommended for critical seals.

## Physical Properties

| Property                              | NuGenTec FluoSolv®<br>7100DL | HCFC<br>141b | HCFC-225 |
|---------------------------------------|------------------------------|--------------|----------|
| Boiling Point °C                      | 61                           | 32           | 54       |
| Liquid Density (kg/m3)                | ~1510                        | 1.23         | 1.55     |
| Surface Tension (mN/m)                | ~13.6                        | 19.3         | 16.2     |
| Solubility of Solvent in Water (ppmw) | 12                           | 210          | 330      |
| Vapor Pressure at 25°C (kPa)          | ~27                          | 569          | 290      |
| Global Warming Potential (GWP)        | 297                          | 700          | 180/160  |
| Ozone Depleting Chemical              | 0                            | 0.10         | 0.03     |
| Volatile Organic Compounds (VOC)      | Exempt                       | Exempt       | -        |
| Flash point                           | None                         | None         | None     |

### Free Solvent Sample and Vapor Degreaser for Testing

NuGenTec offers a small loaner vapor degreaser and a loaner 5-gallon pail to assist with your testing. The loaner vapor degreaser plugs into a standard wall outlet and fits on a standard pallet. This allows you to test our FluoSolv® solvent in your own controlled environment without immediately changing the solvent in your current equipment.

FluoSolv® 7100DL is available for purchase in three package sizes:

- 55-gal phenolic lined metal drums
- 5-gal phenolic lined pails
- 1-gal HDPE plastic bottles

For further information about FluoSolv® 7100DL for testing or purchasing please contact:

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