

# 3M<sup>TM</sup> Novec<sup>TM</sup> Electronic Grade Coatings

3M Novec fluids are not targeted for any ban under the F-Gas regulation.

## HFC\* phasedown

driven by F-Gas regulation 517/2014

To reduce emissions of F-Gases to meet the EU climate change objectives and obligations under the Kyoto Protocol, the European Parliament and the Council adopted the **Regulation (EC) No 2014/517 on certain fluorinated greenhouse gases (F-Gas Regulation\*\*)**.

All HFCs are in phasedown. From 2021, HFC volumes must be reduced by 55% from the baseline set in 2015 to reach the EU's environmental targets. A continued step by step phasedown is targeted to reach a 79% reduction by 2030.

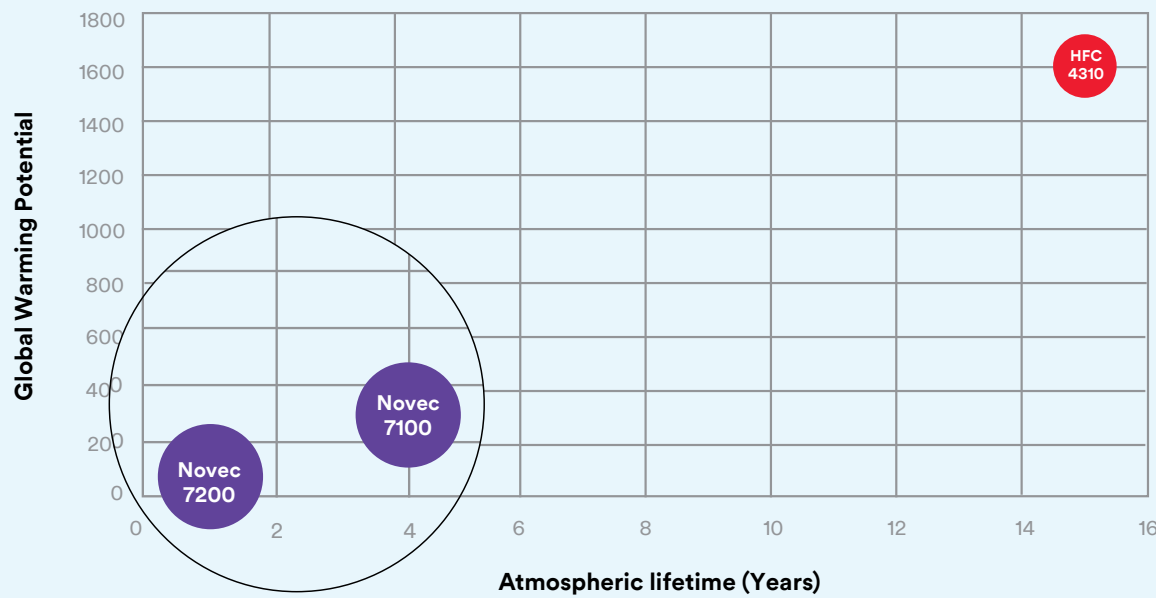
**In this context, it is recommended to select a coating with:**

- Minimal environmental impact
- No restriction under any regulation or directive

These coating solutions are unique fluorinated polymers dissolved in segregated hydrofluoroether fluids (HFEs\*).

\* HFC = Hydrofluorocarbon  
 HFE = Hydrofluoroether

## Environmental Footprint Comparison



3M Novec EGC 1700 is made of fluoropolymer dissolved in 3M Novec 7100 (HFE)

3M Novec EGC 2704 is made of fluoropolymer dissolved in 3M Novec 7200 (HFE)

The 3M Novec fluids range exhibits low GWP and a short atmospheric lifetime.

### Y axis

Global Warming Potential (GWP) used in the context of the F-Gas Regulation is calculated in terms of the 100-year integrated time horizon (expressed in CO<sub>2</sub> kilogram equivalent).

### X axis

Atmospheric lifetime is the duration a gas remains in the atmosphere before being decomposed and has a strong correlation to the GWP.

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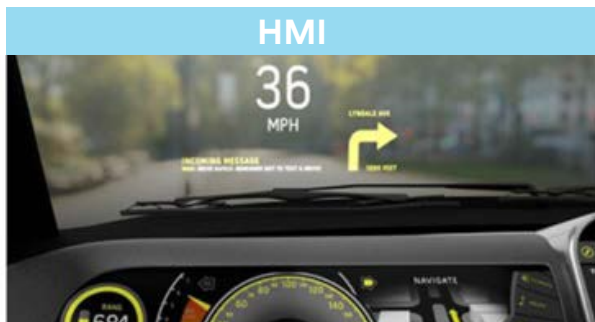
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## 3M Novec Electronic Grade Coatings

3M Novec protective coatings have been developed as a potential cost-effective replacement of highly regulated solvents without compromising demanding requirements from industries in which they are used.

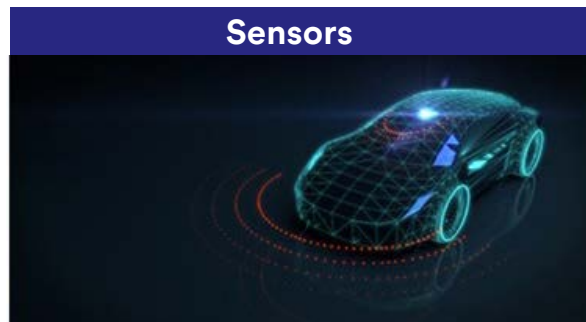
3M Novec coatings are fast and easy to apply with no need for post-application curing. These ultrathin coatings feature short cycle times, low energy consumption and the option to rework if needed.

### Areas for Novec Coatings in Automotive Electronics



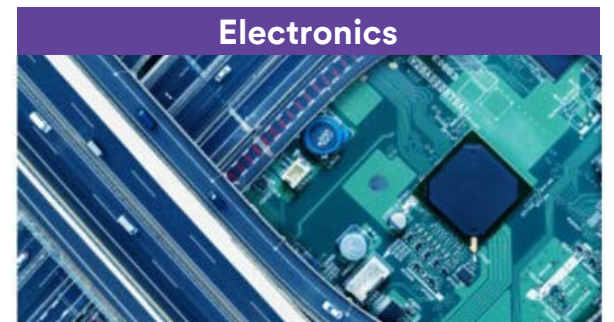
#### Automotive Displays

- eMirror and Heads-up Displays
- High performance displays operating within automotive interiors may require anti-moisture/anti-corrosion solution



#### Sensor Technology

- ADAS and Autonomous Driving (AD) sensors
- Increasing sensor density will require higher performance and reliable technologies. Need for anti-corrosion coating solution with superior ease of assembly



#### Electronic Control Unit

- ADAS and Infotainment ECUs
- Increasing vehicle computing and data transmission systems may require a thin electronics coatings that does not interfere with signal transmission

### Benefits and key characteristics of 3M Novec Coatings



Broad material compatibility



Coating layer repellency

- Hydrophobicity
- Oleophobicity



Low surface tension & viscosity



Process cost saving:

- Energy consumption
- Maintenance frequency
- Cycle time reduction

### Versatile options of applying Novec coatings

