

## FLUOROTECHNOLOGY FOR AUTOMOTIVE APPLICATIONS

Today's safe and fuel efficient trucks, buses and automobiles rely on the unique, high performance properties of FluoroTechnology products used throughout each vehicle. From engines and brakes to fuel components and electronics, every automotive system uses FluoroTechnology's durability, heat, chemical resistance and vapor barrier.



Fluoropolymers used in wire coatings increase reliability of engine compartment wiring and gauges and improves auto safety by helping to reduce engine compartment fires. Fluoropolymers, including fluoroelastomers, enable chemical and heat resistant gaskets and o-rings, improving reliability and the length of time between maintenance and service. Cylinder head coatings and hoses made with FluoroTechnology increase fuel efficiency and reduce fugitive gasoline vapor emissions. Fluorotelomer-based surface protection treatments protect automobile carpets and seats against stains, soil, oil and water.

The use of FluoroTechnology in the automotive industry supports more than 59,000 jobs in the U.S. and almost 72,000 jobs in Europe. Globally, FluoroTechnology materials and products specific to the automotive industry generate a total of \$147.9 billion in economic output.<sup>1</sup>

### *FluoroTechnology Automotive Solutions Enable High-Performance:*

#### **Axle Systems:**

- Seals for Wheel Bearings, Hubs, Differential Output, and Rotary Shafts
- O-Rings

#### **Engines:**

- Crankshaft Seals
- Front Cover Seals
- Cylinder Head Gaskets
- O-Rings
- Valve Stem Seals
- Camshaft Seals
- Oil Pan Seals
- Engine Oil Coolers
- EGR Valve Seals
- Water Pump Seals
- PTFE Bearings
- Back-up Rings
- Valve Packings
- Gaskets

#### **Electronics:**

- Engine, Transmission and Under-hood Wiring
- Fiber Optic Cables

#### **Environmental Systems:**

- Hood, Door and Trunk Hinges
- PTFE Bearings
- Push/Pull Cables
- Power Door Lock Seal
- Seat Adjustment Systems
- Active Headlight Seal

#### **Fuel Systems:**

- Seals
- Oil Coolers
- Valve Bodies
- Liquid and Vapor Lines
- Fuel Tanks
- Filler Necks
- Connectors
- Oxygen Sensors

#### **Interiors:**

- Carpets
- Seats

#### **Steering Systems:**

- Gear Seals and Mounts
- PTFE Bearings
- Column Adjustment
- Pump and Steering Rack Seals

#### **Suspension/Brakes:**

- Strut and Piston Seals
- Shock Absorbers
- Brake Pad Additives

#### **Transmissions:**

- PTFE Seals and Bearings
- Piston, Shaft and Fluid Transfer Seals
- Gaskets
- O-Rings
- Sensor Modules

<sup>1</sup> Based on preliminary estimates of 2013 data by the American Chemistry Council.

## *FluoroCouncil's Commitment to Sustainability*

FluoroCouncil and its members are working with regulatory authorities and other stakeholders worldwide to innovate and drive increasingly sustainable FluoroTechnology solutions, including the global transition from long-chain PFAS<sup>2</sup> to alternatives such as short-chain fluorochemicals. Short-chain fluorochemicals are alternatives to the long-chain PFAS that provide the same valuable properties, but with improved environmental and human health profiles.

All FluoroCouncil companies are charter members of the [2010/2015 PFOA Stewardship Program](#), a global partnership with U.S. Environmental Protection Agency (EPA) based on goals to eliminate perfluorooctanoic acid (PFOA) and related chemicals from facility emissions and product content by the end of 2015. Similar programs are in place with Environment and Health Canada. A significant volume of data has been developed and rigorously evaluated by industry and regulators, supporting the conclusion that the short-chain alternative substances offer equivalent performance with improved environmental and human health profiles.

*According to [the U.S. EPA](#), “data indicate that [shorter-chain chemicals] have substantially shorter half-lives in these animals than PFOA and are less toxic than long-chain PFAC chemicals.”*

<sup>2</sup> PFAS = per- and polyfluoroalkyl substances

### THE FLUOROCOUNCIL MEMBERS ARE:

Archroma Management LLC, Arkema France, Asahi Glass Co., Ltd., Daikin Industries, Ltd.,  
Solvay Specialty Polymers, and The Chemours Company LLC