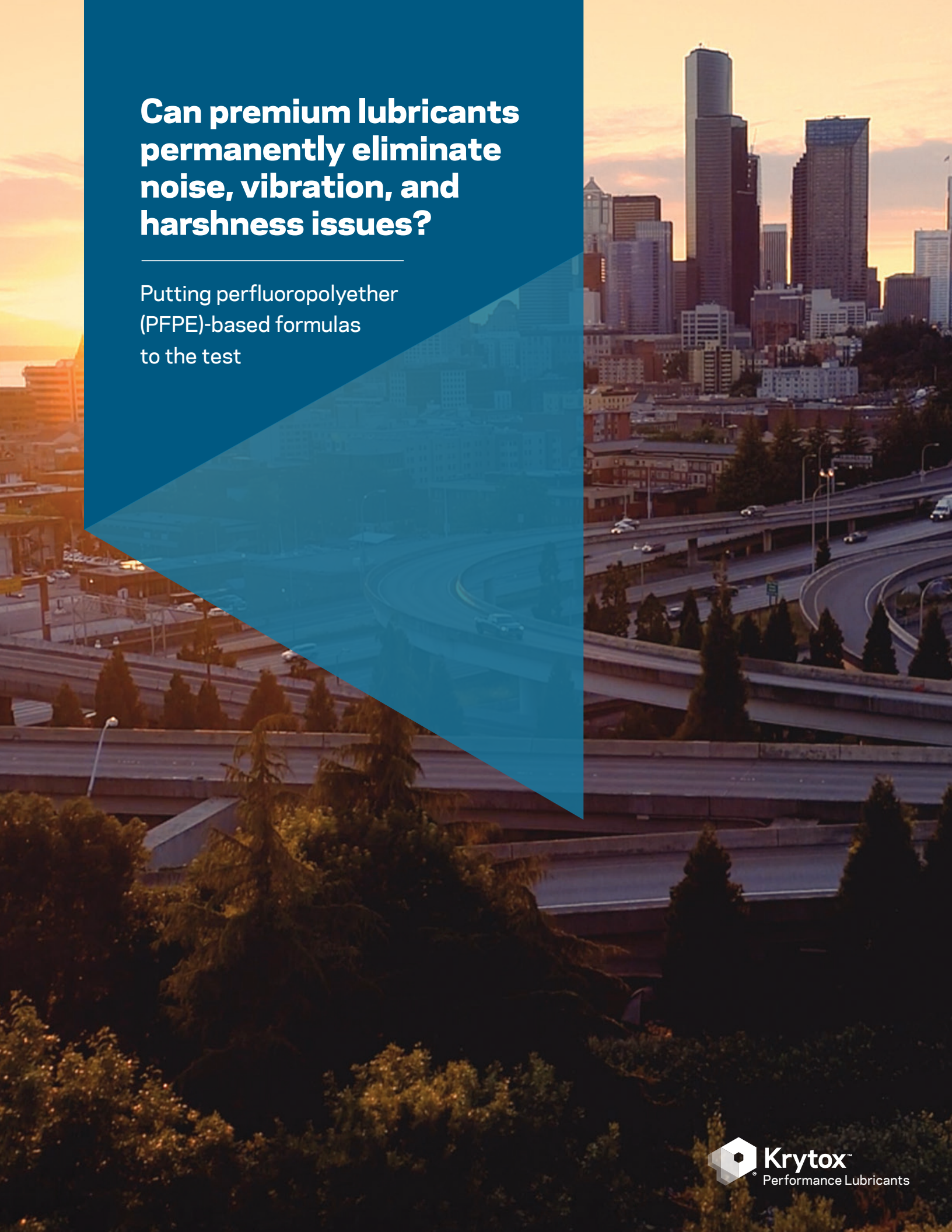

Can premium lubricants permanently eliminate noise, vibration, and harshness issues?

Putting perfluoropolyether (PFPE)-based formulas to the test

Krytox™ Performance Lubricants

How high-performance lubricants have become essential to the auto industry

Exploring the longevity and versatility of smarter solutions

A faint noise. That slight rattle. An oh-so-subtle squeak. For today's car buyers, these noises are irritating, annoying, and more often than not, can compromise the perception of vehicle quality, durability, and overall value. In fact, buyers now include noise and vibration among the key factors that affect their choices when evaluating new vehicles.

Luxury has become synonymous with quiet, smooth rides

With the many advancements in technology, auto manufacturers must live up to the high level of performance and comfort drivers have come to expect from their cars, regardless of the class of vehicle they drive. It's no wonder all of the top cars listed in *US News & World Report's* ranking of the quietest cars were luxury models.

Engineers have stepped up to the challenge. High-end, tech-forward features such as active noise control methods and computer-controlled smart damping systems work to cancel out noise. And while these solutions can be effective, they're not always the most cost-efficient or easiest to implement.

In many cases, the missing piece to the noise-cancelling puzzle is a new wave of high-performance lubricants.

Over the years, manufacturers have focused on a variety of ways to address noise, vibration, and harshness (NVH) and minimize buzz, squeak, and rattle (BSR) issues, including:

- **Designing aerodynamic bodies to reduce wind resistance**
- **Using foam and insulation to reduce cabin rattles and noise**
- **Isolating vehicle suspensions to reduce vibration**
- **Optimizing tire tread design to reduce road noise**
- **Redesigning engines to run more quietly**

While these efforts have dramatically improved interior quietness, slight noises and rattles still persist. What's more, combined with quieter electric vehicles, these efforts are magnifying seemingly small sounds because there is less background noise to mask previously undetectable BSR issues.

Automotive manufacturers want more reliable ways to beat the squeak

Solving the problems associated with NVH and BSR has been a challenge, and manufacturers are looking for a more reliable solution. In many cases, the missing piece to the noise-cancelling puzzle is a new wave of high-performance lubricants.

High-performance lubricants provide an effective solution to NVH and BSR issues

Lubricants have been evolving to accommodate automotive advances since the first automobiles debuted. Yet not all lubricants are created equal, and automakers must consider carefully which lubricant is most effective for each application.

A premium class of lubricants—like Krytox™ greases and oils—deliver the performance and longevity that today's cars require. While silicone and hydrocarbon lubricants could meet past NVH challenges, PFPE lubricants have the qualities needed to meet the rising expectations for interior quietness that automakers face, including:

- **Compatibility** with metal, plastic, elastomer, and leather used in vehicle construction
- **Lower volatility** to resist drying out for the vehicle's entire lifetime
- **Better resistance** to washout from water, road salt, steam, and detergents that erode other lubricants over time
- **Lower coefficient of friction**, in comparison to other options, to reduce wear and prevent noise and vibration during vehicle operation

Whether applying to automotive interiors, exteriors, or under the hood, Krytox™ performance lubricants are equipped to address NVH and BSR issues in modern automobile manufacturing and production.

What other characteristics fuel higher performance?

To deliver maximum performance, Krytox™ lubricants apply easily, are virtually undetectable, and include properties such as:

- High lubricity
- Wide temperature performance (-73 °C to 360 °C) (-99 °F to 680 °F)
- Chemically inert and non-VOC
- Wide range of viscosities to dampen vibrations
- Lifetime lubrication

Applications in Action

When automakers need to get it right, they call on Krytox™ performance lubricants

Bringing hatch vibration to a halt

One of the leading North American car and light truck OEMs needed to address a rattling found in the doors and rear latches of their full-sized pick-ups. With <1 gram of Krytox™ GPL 205 grease, they kept production lines moving, and with an optimized grease fill-level, they avoided what could have become a $150M+ recall.

Resisting washout

In some cases, redesigning bushings isn't a viable solution for eliminating unwanted noises. A leading automotive OEM selected Krytox™ GPL 204 grease for its stabilizer bar bushings because of the lubricant's compatibility with the natural rubber bushings and its outstanding resistance to washout from road water, de-icing chemicals, and car washes.

Putting the brakes on noise

A premium European motor manufacturer with a famous sporting pedigree needed to eliminate a persistent and annoying noise found in the parking brake mechanism. Krytox™ GPL 205 grease served as an easy-to-apply, life-long lubrication solution where multiple components made from different materials come into contact.

Whatever your engineering challenge—longer part life, extreme temperatures, reduced failures, eliminating NVH—Krytox™ performance lubricants from Chemours can help.

Chemours is ISO 9001 and ISO 14001 certified; select grades of Krytox™ lubricants are NSF H-1 certified.

For more products and information, contact Adam D. Reinitz, Global Marketing Leader, at AReinitz@chemours.com or call a Krytox™ lubricant technical expert:

U.S. and Canada ..... +1 800 441 9489
Europe/Middle East/Africa ..... +49 697 1041 4774
Japan ..... +81 066 3381 3761
Asia Pacific – North ..... +86 400 8056 528
Asia Pacific – South ..... +41 22 719 1500

Krytox™ Performance Lubricants

Chemours™

C-11932 (3/21)