Hydrogen-ready lubricants from MOLYKOTE®

Lubricants for applications dealing with hydrogen to ensure functionality, even after long-term exposure

MOLYKOTE® Specialty Lubricants ensure functionality of hydrogen-exposed applications

Green hydrogen is likely to become the next-generation fuel. Because it can be produced from water by using renewable energy and its use as fuel results in zero emissions, hydrogen is viewed as a significant contributor to achieving climate goals.

Along the entire hydrogen value chain are numerous hydrogen-exposed applications (e.g., seals and threaded connections) that require lubrication. Lubricants used for these applications must be resistant against hydrogen but also should not contaminate it, especially in fuel cells. Low-temperature performance (-40°C) also is required due to the cooling process before hydrogen is dispensed at fuel stations. In addition, lubricants must be compatible with the substrate (e.g., elastomer seal) and should not support hydrogen embrittlement.

MOLYKOTE® HP-300 Grease and **MOLYKOTE® PD-930M Semi-Dry Lubricant** perfectly meet these needs and have been adopted broadly across industries, including the automotive and railway industries.

Increasing efficiency of fuel cell drives

Due to their inertness against hydrogen and their low outgassing, both lubricants increase sealing performance and, consequently, the efficiency of fuel cell drives. The ultrathin lubricating layer of MOLYKOTE® PD-930M Semi-Dry Lubricant will limit contamination risk significantly when used in applications close to the fuel cell stack, helping retain fuel cell performance over time.

Supporting equipment safety

MOLYKOTE® HP-300 Grease supports safety of hydrogen filling stations by enabling proper breakaway functionality in an emergency. The grease also is ideal to lubricate seals of valves used along hydrogen pipes, as its lubrication capability and inertness against hydrogen reduce the risk of leakages caused by improper manufacturing or assembly. In addition, durability of electronic valve actuators is increased when using MOLYKOTE® HP-300 Grease for gearbox lubrication.



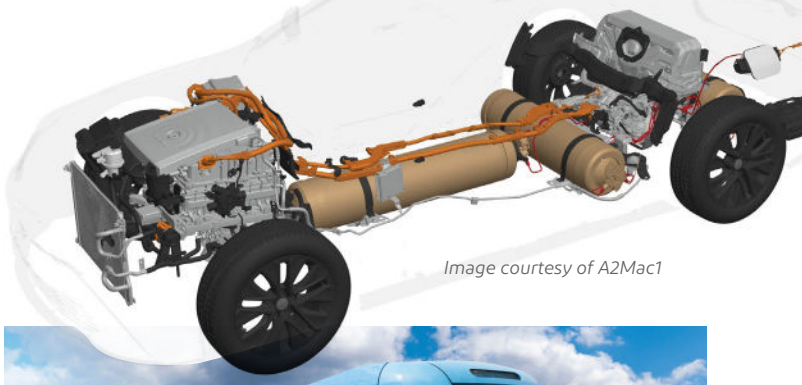

Image courtesy of A2Mac1



MOLYKOTE®



Features of broadly adopted hydrogen-ready MOLYKOTE® Lubricants

MOLYKOTE® HP-300 Grease

- Excellent plastic and elastomer compatibility
- Superior resistance to chemicals and solvents (including water)
- High-temperature resistance (up to 250°C)
- Very low vapor pressure
- High dielectric strength

MOLYKOTE® PD-930M Semi-Dry Lubricant

- Superior lubricity on most plastics and elastomers
- Good compatibility with plastics and elastomers
- Not sticky after dried
- Super-thin, transparent lubricating layer
- Good surface coverage



Supporting green hydrogen production

In addition to their suitability for end-use applications in contact with hydrogen, MOLYKOTE® Specialty Lubricants also are used in desalination plants and in renewable energy – making MOLYKOTE® *the* lubrication partner of choice along the *entire* hydrogen value chain.

About MOLYKOTE® Specialty Lubricants

Since 1948, customers around the world have trusted the MOLYKOTE® brand for performance and expertise to help solve complex, technical design and lubrication challenges. Today, our greases, compounds, pastes, dispersions, oils and fluids, and anti-friction coatings support customers' innovation, performance and sustainability needs. To learn more about our extensive product and service offering, to utilize our interactive product selection tool, or to locate a distributor, visit **molykote.com**.

Contact us

MOLYKOTE® has Contact Centers around the globe. Find the phone number for the center nearest you at **www.dupont.com/molykotecontact**.

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