

Phosphonium Ionic Liquids as Additives for Hydrocarbon Lubricants

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Technology Summary

The potential for using ionic liquids as a new class of lubricants is well documented, for example in U.S. Patent No. 7,754,664. Friction and wear reduction have been reported on metallic and ceramic surfaces lubricated by selected ionic liquids. It has been suggested that adding a few percent of ionic liquids could improve the lubricating behavior of base oils. A unique group of ionic liquids (ILs) have recently been discovered as potentially effective lubricant additives at ORNL. The uniqueness of this group of ILs includes mutual miscibility with hydrocarbon lubricating oils, non-corrosiveness, and effectiveness as oil additives for friction and wear reductions

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