

A Study on Design and Analysis of New Lubricant for Near Contact Recording

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As hard-disk drives require higher recording density and reliability, the technology of the head-disk interface (HDI) is facing more challenging tasks regarding its tribological performance. Fluorinated lubricants are commonly used in the phase of near contact recording whose HDI is below 10 nm. However, conventionally obtainable compounds have some disadvantages derived from their chemical frameworks. QA-40 is a newly designed and synthesized fluorine-containing lubricant for near contact recording with desirable properties in chemical stability, friction force and adhesion.

Index Terms—Hard disk, lubricant, head-disk interface, friction force.