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TRIBOLOGICAL CHARACTERIZATION OF ELECTRONIC GRADE LUBRICANTS USING BALL-ON-DISK TRIBOMETER

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In microelectronic industry, the lubricants are used in the wafer-to-chip grinding and lapping processes before device assembly step. The based-lubricant and additives play important roles in the product quality and reliability for those nano-scale fabrications. In this study, the tribological behaviors of AlTiC surface that sliding against AISI304 balls were studied in electronic-grade ethylene glycol (EG) based lubricants by using ball-on-disk Tribometer. The friction force and coefficient of friction (COF) of different lubricants are measured and calculated. Our results show that the COF depends on many factors such as types of lubricants, load and sliding speed. The different additives in lubricant also affect the friction force. Moreover, there is a model of a power law in ice friction which can be explained the relationship among tribological parameters. It was applied to explain the lubricant behavior and lubricant state in this study

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