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Synergisms and antagonisms between MoS_2 nanotubes and representative oil additives under various contact conditions

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ABSTRACT

MoS_2 nanotubes are known to enhance the tribological properties of lubricants thanks to support friction-reducing and anti-wear properties. However, in fully-formulated lubricants particularly for steel elements, other properties such as oxidation and corrosion protection are also necessary to provide a comprehensive lubricating performance and protection against oil degradation. As a consequence, the coexistence of MoS_2 nanotubes with other oil additives is unavoidable in