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Petroleum products and lubricants — Determination of the mechanical stability of greases in presence of water

Produits pétroliers et lubrifiants — Détermination de la stabilité mécanique des graisses en présence d'eau

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Foreword

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This document was prepared by Technical Committee 28, *Petroleum and related products, fuels and lubricants from natural or synthetic sources*.

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Introduction

Numerous standards exist to evaluate the influence of water on grease properties. These standards are described in Annex A.

The purpose of this document is to describe a method for the evaluation of the effect of water on the working stability of a grease, by comparing the penetrations of the grease worked without water and the grease worked in presence of water. This allows to predict the mechanical behaviour of the grease, the risk of leakages due to excessive softening, the risk of lubricating properties losses by excessive hardening or complete solubilization.

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Petroleum products and lubricants — Determination of the mechanical stability of greases in presence of water

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1 Scope

This document specifies a method for evaluating the change of consistency of a grease when it is submitted to working and prolonged working in presence of 10 % of water.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 2137:2020, *Petroleum products and lubricants — Determination of cone penetration of lubricating greases and petrolatum*

ISO 3696, *Water for analytical laboratory use — Specification and test methods*

ISO 7120, *Petroleum products and lubricants — Petroleum oils and other fluids — Determination of rust-preventing characteristics in the presence of water*

ISO 23572, *Petroleum products — Lubricating greases — Sampling of greases*

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

4 Principle

A specified mass of grease is blended with a specified quantity of water, then worked, either 60 strokes or 100 000 strokes in a grease worker. The penetration measured after this working is compared to the penetration measured after working 60 strokes or 100 000 strokes in absence of water. The difference of the penetrations recorded with and without water yields the water resistance of the grease.

5 Significance of the test

This test method estimates the softening or hardening tendency of a grease when submitted to prolonged working in presence of water. No formal correlation with field service has been established.

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