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Petroleum products and lubricants — Determination of roll stability of lubricating grease —

Part 2: Wet condition test

Produits pétroliers et lubrifiants — Détermination de la stabilité au laminage des graisses lubrifiantes —

Partie 2: Essai en condition humide

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Foreword

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

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Introduction

There are many ways to evaluate the behaviour of grease in the presence of water.

ISO 11009 describes a method to evaluate the resistance of grease to washout from a bearing in laboratory conditions.

ISO 11007-1 and ISO/TS 11007-2 evaluate the ability of grease to protect bearings against corrosion in dynamic conditions and in the presence of washout respectively.

ASTM D7342,[4]ISO 12921 and NF T60-626[6] describe methods to assess the working stability of grease in the presence of water.

The action of water on greases can be shown by a relatively significant absorption of water, by a relatively significant hardening or softening or by a loss of adhesiveness on metallic surfaces.

The purpose of this document is to prescribe a method to evaluate the behaviour of grease when it is rolled in the presence of water. This is done by evaluating the consistency change (see Reference [7]), and hence predicting its mechanical behaviour, the risk of leakages due to excessive softening and the risk of loss of the lubricating property by either excessive hardening or complete solubilisation of the grease.

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Petroleum products and lubricants — Determination of roll stability of lubricating grease —

Part 2:
Wet condition test

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1 Scope

This document specifies a method for evaluating the change of consistency, as measured by cone penetration, of lubricating grease when worked in the roll stability test apparatus, in the presence of water. The method described in this document only applies to greases with cone penetration in the range of 175 × 0,1 mm to 385 × 0,1 mm as measured using ISO 2137.

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 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 introduced in the roll stability apparatus and subjected to low shear at a specified temperature during a specified time, in the presence of water. The difference between the worked penetration before test and the penetration after test is used as a measure of the effect of the low shear working in presence of water on the grease consistency.

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