
**Petroleum products and lubricants —
Determination of oil separation from
grease — Pressure filtration method**

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Foreword

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Introduction

Storage stability is an important parameter in the quality of lubricating greases.

Oil separation, also called “bleeding”, is an indication of an inadequate structure of the thickening agent, e.g. a too low concentration of a large network of fibres, or insufficient interaction between the base oil and the thickening agent, or a too high interaction inside the crystalline network of the gel leading to a contraction of the latter and expulsion of oil.

Oil separation at storage renders the grease improper for use. An oil separation which is too high leads to a hardening that can be significant or not, depending on the quantity of oil separated. This hardening can lead, when a bearing is running, to the blocking of the rolling elements and of the retainer, and to damage. Hardening can also lead to the clogging of the grease ducts, to the bearing and to difficulties for the functioning of the grease relief valves.

The evaluation of the oil separation is therefore of prime importance to verify the good structure of the gel.

Many methods exist to evaluate the tendency of greases to separate oil. These methods include depositing the grease on a metallic grid, in prescribed temperature conditions and evaluating, after a certain time, the quantity of oil separated. In some cases, additional pressure is applied on the top of the grease surface.

This document is derived from IP 121^[5], DIN 51817^[2] and NF T 60-191^[3]. This is a method where a pressure of 0,66 kPa is applied on the grease.

This document differs from ASTM D 1742^[4] which uses a different test device and different conditions of applied pressure, temperature and duration.

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