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**Petroleum and related products —  
Determination of the shear stability of  
polymer-containing oils using a diesel  
injector nozzle**

*Pétrole et produits connexes — Détermination de la stabilité au  
cisaillement de fluides contenant des polymères au moyen d'un  
injecteur pour moteur diesel*



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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 20844 was prepared by Technical Committee ISO/TC 28, *Petroleum products and lubricants*.

# Petroleum and related products — Determination of the shear stability of polymer-containing oils using a diesel injector nozzle

**WARNING** — The use of this International Standard may involve hazardous materials, operations and equipment. This International Standard does not purport to address all of the safety problems associated with its use. It is the responsibility of the user of this International Standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

## 1 Scope

This International Standard specifies a method to assess the resistance to shear stresses applied to mineral oils, synthetic oils and other fluids containing polymers, when passed through a specified diesel injector nozzle. The shear stability is measured by the change in viscosity of the fluid under test, brought about by the polymer degradation during stress. Under normal circumstances, this International Standard is applied to hydraulic fluids of categories HR and HV as defined in ISO 6743-4 ([1] in the Bibliography) and specified in ISO 11158 ([2] in the Bibliography), but it may also be applied to fire-resistant hydraulic fluids within categories HFA, HFB, HFC and HFD, with modified conditions as specified in ISO 12922 ([3] in the Bibliography).

No formal correlation has been established between the viscosity loss, or the absence of viscosity loss, obtained using the procedures described in this International Standard and that of oils and fluids in actual service. However, it provides standardized conditions for the evaluation of polymer stability under minimized thermal and oxidative stresses. It is normally used by manufacturers of fluids and additives, and users, as a means of ranking existing and potential formulations.

**NOTE** Changes to properties other than viscosity are specified in some specifications, but these are not covered by the procedures specified in this International Standard.

## 2 Normative references

The following referenced documents are indispensable for the application 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 3104:1994, *Petroleum products — Transparent and opaque liquids — Determination of kinematic viscosity and calculation of dynamic viscosity*

ISO 3170:2004, *Petroleum liquids — Manual sampling*

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.