
**Lubricants, industrial oils and
related products (class L) —
Family H (hydraulic systems) —
Specifications for hydraulic fluids
in categories HFAE, HFAS, HFB, HFC,
HFDR and HFDU**

*Lubrifiants, huiles industrielles et produits connexes (classe L) —
Famille H (systèmes hydrauliques) — Spécifications applicables
aux fluides hydrauliques des catégories HFAE, HFAS, HFB, HFC,
HFDR et HFDU*

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 28, *Petroleum and related products, fuels and lubricants from natural or synthetic sources*, Subcommittee SC 4, *Classifications and specifications*.

This third edition cancels and replaces the second edition (ISO 12922:2012), which has been technically revised. The main changes compared with the previous edition are as follows:

- an introduction and a terms and definitions clause have been added;
- the methods specified for measuring water content in water-based fluid types HFA/HFB/HFC have been revised;
- the oxidation requirements for HFDU fluids have been increased.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

Hydraulic fluids constitute the largest segment of the industrial lubricant market. Although mineral oil-based fluids are by far the most widely used type of hydraulic fluid, there are some applications where the use of these fluids could constitute a fire hazard. In order to reduce the risk to operatives in such circumstances, fire-resistant or less flammable fluids that increase operator safety have been developed. However, the following points should be noted.

- Even fire-resistant fluids can ignite at very high temperatures and the flammability behaviour of the fluids specified in this document covers a very wide range. It is therefore necessary to know the level of hazard in order to select the appropriate fluid.
- The properties of these fluids can be significantly different to those of conventional mineral oil-based products. For example, some fire-resistant fluids contain water. It might therefore be necessary to design the system for their use. It should also not be assumed that synthetic, non-aqueous fluids can replace mineral oil products without system modifications. Some fluids, for example, are incompatible with the elastomers used with mineral oils.

To enable the satisfactory operation of fire-resistant hydraulic fluids, it is recommended that this document is read in conjunction with ISO 7745.

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