

BS EN ISO 6743-4:2015



BSI Standards Publication

# Lubricants, industrial oils and related products (class L) — Classification

Part 4: Family H (Hydraulic systems)

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**National foreword**

This British Standard is the UK implementation of EN ISO 6743-4:2015. It supersedes BS EN ISO 6743-4:2001 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee MCE/18/-/16, Hydraulic fluids.

A list of organizations represented on this committee can be obtained on request to its secretary.

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**Lubricants, industrial oils and related products (class L) -  
Classification - Part 4: Family H (Hydraulic systems) (ISO 6743-  
4:2015)**

Lubrifiants, huiles industrielles et produits connexes (classe  
L) - Classification - Partie 4: Famille H (Systèmes  
hydrauliques) (ISO 6743-4:2015)

Schmierstoffe, Industrieöle und verwandte Erzeugnisse  
(Klasse L) - Klassifizierung - Teil 4: Familie H (Hydraulische  
Systeme) (ISO 6743-4:2015)

This European Standard was approved by CEN on 16 April 2015.

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**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

## European foreword

This document (EN ISO 6743-4:2015) has been prepared by Technical Committee ISO/TC 28 "Petroleum products and lubricants" in collaboration Technical Committee CEN/TC 19 "Gaseous and liquid fuels, lubricants and related products of petroleum, synthetic and biological origin" the secretariat of which is held by NEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by February 2016, and conflicting national standards shall be withdrawn at the latest by February 2016.

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### Endorsement notice

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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](http://www.iso.org/directives)).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/TC 28, *Petroleum products and lubricants*, Subcommittee SC 4, *Classifications and specifications*.

This third edition cancels and replaces the second edition (ISO 6743-4:1999), which has been technically revised with the following change:

- the table of classification now includes environmentally acceptable fluids.

ISO 6743 consists of the following parts, under the general title *Lubricants, industrial oils and related products (class L) — Classification*:

- *Part 1: Family A (Total loss systems)*
- *Part 2: Family F (Spindle bearings, bearings and associated clutches)*
- *Part 3: Family D (Compressors)*
- *Part 4: Family H (Hydraulic systems)*
- *Part 5: Family T (Turbines)*
- *Part 6: Family C (Gears)*
- *Part 7: Family M (Metalworking)*
- *Part 8: Family R (Temporary protection against corrosion)*
- *Part 9: Family X (Greases)*
- *Part 10: Family Y (Miscellaneous)*
- *Part 11: Family P (Pneumatic tools)*
- *Part 12: Family Q (Heat transfer fluids)*

- *Part 13: Family G (Slideways)*
- *Part 14: Family U (Heat treatment)*
- *Part 15: Family E (Internal combustion engine oils)*
- *Part 99: General*





# Lubricants, industrial oils and related products (class L) — Classification —

## Part 4: Family H (Hydraulic systems)

### 1 Scope

This part of ISO 6743 establishes the detailed classification of fluids of Family H (Hydraulic systems) which belong to class L (Lubricants, industrial oils, and related products). It is intended to be read in conjunction with ISO 6743-99. This classification system does not include automotive brake fluids or aircraft hydraulic fluids.

### 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 3448, *Industrial liquid lubricants — ISO viscosity classification*

ISO 11158, *Lubricants, industrial oils and related products (class L) — Family H (hydraulic systems) — Specifications for categories HH, HL, HM, HV and HG*

ISO 12922, *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*

ISO 15380, *Lubricants, industrial oils and related products (class L) — Family H (Hydraulic systems) — Specifications for categories HETG, HEPG, HEES and HEPR*

### 3 Explanation of symbols used

**3.1** This detailed classification of Family H has been established by defining the categories of products required for the main applications of the family and final sub-division by reference to composition of corresponding products.

**3.2** Each category is designated by a symbol consisting of a group of letters which, together, constitute a code.

The first letter of the code (H) identifies the family of the product considered but any following letters taken separately have no significance of their own.

NOTE The designation of each category can be supplemented by the addition of viscosity grades according to ISO 3448.

**3.3** In this classification system, products are designated in a uniform manner. For example, a particular product may be designated in complete form, i.e. ISO-L-HV 32, or in an abbreviated form, i.e. L-HV 32, the number indicating the viscosity according to ISO 3448.

#### **4 Detailed classification**

The detailed classification is shown in [Table 1](#).

**Table 1 — Classification of hydraulic fluids**

Code letter	General applications	Particular applications	More specific applications	Composition and properties	Symbol ISO-L	Typical applications	Remarks	International Standard
H	<i>Hydraulic Systems</i>	Hydrostatic		Non-inhibited refined mineral oils	HH			ISO 11158
				Refined mineral oils with improved anti-rust and anti-oxidation properties	HL			ISO 11158
				Oils of HL type with improved anti-wear properties	HM	General hydraulic systems which include highly loaded components		ISO 11158
				Oils of HM type with improved viscosity/temperature properties	HV	Construction and marine equipment		ISO 11158
		Applications where environmentally acceptable fluids are requested	Triglycerides	HETG	General hydraulic systems			ISO 15380
			Polyglycols	HEPG				
			Synthetic esters	HEES				
			Polyalphaolefin and other synthetic hydrocarbons	HEPR				
		Hydraulic slideway systems		Oils of HM type with anti-stick/slip properties	HG	Machines with combined hydraulic and plain bearing way lubrication systems where vibration or intermittent sliding (stick/slip) at low speed is to be minimised	These fluids are intended to be multi-functional but they do not function successfully under all hydraulic applications	ISO 11158
		Applications where fire-resistant fluids are required	Oil in water emulsions	HFAE			Typically more than 95 % mass fraction of water.	ISO 12922
			Chemical solutions in water	HFAS			Typically more than 95 % mass fraction of water.	
			Water in oil emulsions	HFB			Typically more than 40 % mass fraction of water.	
			Water polymer solutions	HFC			Typically more than 35 % mass fraction of water.	
Synthetic fluids containing no water and consisting phosphate esters	HFDR							
Synthetic fluids containing no water and of other composition	HFDU							

## Bibliography

- [1] ISO 6743-99, *Lubricants, industrial oils and related products (class L) — Classification — Part 99: General*







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