INTERNATIONAL STANDARD

ISO 6743-4

Second edition
1999-10-15

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

Part 4:
Family H (Hydraulic systems)

Lubrifiants, huiles industrielles et produits connexes (classe L) — Classification —

Partie 4: Famille H (Systèmes hydrauliques)

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Reference number
ISO 6743-4:1999(E)

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 3.

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.

International Standard ISO 6743-4 was prepared by Technical Committee TC 28, *Petroleum products and lubricants,* Subcommittee SC 4, *Classification and specifications,* Working Group WG 3, *Classification and specifications of hydraulic fluids,* which is a joint working group with ISO/TC 131, *Fluid power systems.*

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

— *Part 0: General*

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— *Part 1: Family A (Total loss systems)*

— *Part 2: Family F (Spindle bearings, bearings and associated clutches)*

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— *Part 3A: Family D (Compressors)*

— *Part 3B: Family D (Gas and refrigeration 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)*

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— *Part 12: Family Q (Heat transfer fluids)*

— *Part 13: Family G (Slideways)*

— *Part 14: Family U (Heat treatment)*

— Part 15: Family E *(Internal combustion engines)*

This second edition cancels and replaces the first edition (ISO 6743-4:1982), of which it constitutes a technical revision in that the table of classification now includes environmentally acceptable fluids.

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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 should be read in conjunction with ISO 6743-0. This classification excludes, for the time being, automotive brake fluids and airborne fluids. However, this edition includes environmentally acceptable fluid categories, i.e.: HETG, HEPG, HEES and HEPR.

2 Normative references

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The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO 6743. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO 6743 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

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ISO 3448:1992**,** *Industrial liquid lubricants — ISO viscosity classification.*

ISO 6743-0:1981, *Lubricants, industrial oils and related products (class L) — Classification — Part 0: General.*

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 subdivision 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
H	Hydraulic systems	Hydrostatic		Non-inhibited refined mineral oils	HH		
				Refined mineral oils with improved anti-rust and anti-oxidation properties	HL		
				Oils of HL type with improved anti-wear properties	HM	General hydraulic systems which include highly loaded components	
				Oils of HL type with improved viscosity/ temperature properties	HR		
				Oils of HM type with improved viscosity/temperature properties	HV	Construction and marine equipment	
				Synthetic fluids with no specific fire resistant properties	HS		Special properties
			Applications where environmentally acceptable fluids are requested	Triglycerides	HETG	General hydraulic systems (mobile)	a
				Polyglycols	HEPG		
				Synthetic esters	HEES		
				Polyalphaolefin and related hydrocarbon products	HEPR		
			Hydraulic slide-way 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 minimized	These fluids are intended to be multifunctional but they do not function successfully under all hydraulic applications
			Applications where fire-resistant fluids are required	Oil in water emulsions	HFAE		Typically more than 80 % mass fraction of water
				Chemical solutions in water	HFAS		Typically more than 80 % mass fraction of water
				Water-in-oil emulsions	HFB		
				Water polymer solutions	HFC		Typically more than 35 % mass fraction of water [b]
				Synthetic fluids containing no water and consisting of phosphate esters	HFDR		b
				Synthetic fluids containing no water and of other composition	HFDU		
		Hydrokinetic	Automatic transmissions		HA		Classification concerning those applications has not been examined in detail and can be supplemented
			Couplers and converters		HN		

[a] The minimum content of base fluid for each category shall not be less than 70 % (m/m).

[b] Fluids of this type may also fulfil the requirements of eco-biodegradability and eco-toxicity defined in HE categories.

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