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**Road vehicles — Hydraulic braking  
systems — Non-petroleum-based  
reference fluid**

*Véhicules routiers — Systèmes de freinage hydrauliques — Liquides  
de référence à base non pétrolière*





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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)).

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](http://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](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 22 *Road vehicles*, Subcommittee SC 33 *Vehicle dynamics and chassis components*.

This third edition cancels and replaces the second edition ISO 4926:2006, which has been technically revised.

The main changes compared to the previous edition are as follows:

New chemical formulation of reference fluid

- to simplify the recipe in order to avoid blending mistakes and
- to meet the ISO 4925 requirements.

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](http://www.iso.org/members.html).

# Road vehicles — Hydraulic braking systems — Non-petroleum-based reference fluid

## 1 Scope

This document specifies the composition and characteristics of a reference fluid used for the compatibility testing of hydraulic braking systems and components mounted on road vehicles.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 4925, *Road vehicles — Specification of non-petroleum-base brake fluids for hydraulic systems*

ASTM D 1121, *Standard Test Method for Reserve Alkalinity of Engine Coolants and Antirusts*

ASTM D 6304, *Standard Test Method for Determination of Water in Petroleum Products, Lubricating Oils, and Additives by Coulometric Karl Fischer Titration*

## 3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

## 4 ISO reference fluid for compatibility testing

The composition of the reference fluid is specified in [Table 1](#). The fluid shall comply with the specifications of ISO 4925.

Table 1 — Composition of the reference fluid

Components	CAS-number	Mass fraction %	Purity
Borate of triethylene glycol monomethyl ether	30989-05-0	50	Content of boric acid 11,2 % to 11,5 %
Triethylene glycol monomethyl ether	112-35-6	27,5	>95 %
Tetraethylene glycol monomethyl ether	23783-42-8	10	>72 %
Triethylene glycol monobutyl ether	143-22-6	10	60 % - 80 %
Diisopropanolamine	110-97-4	2	>98 %
Tolyltriazole	29385-43-1	0,5	>98 %

The water content according to ASTM D 6304 of the reference fluid shall be less than or equal to 0,20 %.

The reserve alkalinity in accordance to ASTM D 1121 shall be 15,5 ml.



