TC22

INTERNATIONAL STANDARD 4113

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION•МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ•ORGANISATION INTERNATIONALE DE NORMALISATION

Road vehicles — Calibration fluid for diesel injection equipment

Véhicules routiers — Fluide d'essai pour équipement d'injection à gazole

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FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up 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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 4113 was developed by Technical Committee ISO/TC 22, *Road vehicles*, and was circulated to the member bodies in July 1977.

It has been approved by the member bodies of the following countries:

Australia	India	New Zealand
Austria	Iran	South Africa, Rep. of
Brazil	Italy	Spain
Bulgaria	Japan	Sweden
Chile	Korea, Dem. P. Rep. of	Switzerland
Czechoslovakia	Korea, Rep. of	United Kingdom
France	Mexico	U.S.S.R.
Germany, F.R.	Netherlands	Yugoslavia

No member body expressed disapproval of the document.

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Road vehicles — Calibration fluid for diesel injection equipment

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies the requirements for a calibration fluid with which diesel injection equipment may be calibrated and tested in production, in service and in laboratories.

2 REFERENCES

ISO 2049, *Petroleum products — Determination of colour.*

ISO 2160, *Petroleum products — Corrosiveness to copper — Copper strip test.*

ISO 2719, *Petroleum products — Determination of flash point — Pensky-Martens closed cup method.*

ISO 3015, *Petroleum oils — Determination of cloud point.*

ISO 3104, *Petroleum products — Transparent and opaque liquids — Determination of kinematic viscosity and calculation of dynamic viscosity.*

ISO 3405, *Petroleum products — Determination of distillation characteristics.*

ISO 3675, *Crude petroleum and liquid petroleum products — Laboratory determination of density or relative density — Hydrometer method.*

ISO 4008, *Road vehicles — Fuel injection pumps — Conditions for testing.*

ASTM-D665, *Test for rust-preventing characteristics of steam-turbine oil in the presence of water.*

ASTM-D-892, *Test for foaming characteristics of lubricating oils.*

ASTM-D-1748, *Test for rust protection by metal preservatives in the humidity cabinet.*

ASTM-D2140, *Test for carbon-type composition of insulating oils of petroleum origin.*

ASTM-D2274, *Test for stability of distillate fuel oil. (Accelerated method.)*

3 TECHNICAL REQUIREMENTS FOR CALIBRATING FLUID AS SUPPLIED

The calibration fluid shall be refined, deodorized mineral oil with anti-foaming additives and with other additives for improving the resistance to ageing and corrosion. It may also contain additives for reducing wear.

The calibration fluid shall not contain components in such a concentration that irritation of normal skin could be caused.

The calibration fluid shall also be suitable for cleaning the equipment prior to calibration.

The calibration fluid shall be such that, without cleaning of the equipment after calibration, proper functioning of the equipment after test is ensured after storage of the equipment for a period of 1 year, in normal conditions.

The calibration fluid shall have the following properties :

Density at + 15 °C

0,820 to 0,830 g/ml (ISO 3675)

Flash point

+ 75 °C min. (ISO 2719)

Kinematic viscosity at + 40 °C

2,45 to 2,75 mm^2/s* (ISO 3104)

Distillation curve

5 % volume max. at + 210 °C
95 % volume min. at + 360 °C } (ISO 3405)

Ageing test (optional)

residue 1 mg/100 ml max. after test (ASTM-D2274)

* 1 mm^2/s = 1 cSt