

SVENSK STANDARD

SS-ISO 4113:2010

Fastställt/Approved: 2010-06-10

Publicerad/Published: 2010-08-18

Utgåva/Edition: 3

Språk/Language: engelska/English

ICS: 43.180



Vägfordon – Dieselmotorer – Kalibreringsvätskor för insprutningsutrustning (ISO 4113:2010, IDT)

Road vehicles – Calibration fluids for diesel injection equipment (ISO 4113:2010, IDT)

This preview is downloaded from www.sis.se. Buy the entire standard via <https://www.sis.se/std-74375>

Standarder får världen att fungera

SIS (Swedish Standards Institute) är en fristående ideell förening med medlemmar från både privat och offentlig sektor. Vi är en del av det europeiska och globala nätverk som utarbetar internationella standarder. Standarder är dokumenterad kunskap utvecklad av framstående aktörer inom industri, näringsliv och samhälle och befrämjar handel över gränser, bidrar till att processer och produkter blir säkrare samt effektiviserar din verksamhet.

Delta och påverka

Som medlem i SIS har du möjlighet att påverka framtida standarder inom ditt område på nationell, europeisk och global nivå. Du får samtidigt tillgång till tidig information om utvecklingen inom din bransch.

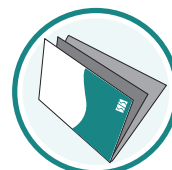
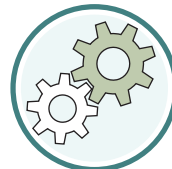
Ta del av det färdiga arbetet

Vi erbjuder våra kunder allt som rör standarder och deras tillämpning. Hos oss kan du köpa alla publikationer du behöver – allt från enskilda standarder, tekniska rapporter och standardpaket till handböcker och onlinetjänster. Genom vår webbtjänst e-nav får du tillgång till ett lättnavigerat bibliotek där alla standarder som är aktuella för ditt företag finns tillgängliga. Standarder och handböcker är källor till kunskap. Vi säljer dem.

Utveckla din kompetens och lyckas bättre i ditt arbete

Hos SIS kan du gå öppna eller företagsinterna utbildningar kring innehåll och tillämpning av standarder. Genom vår närhet till den internationella utvecklingen och ISO får du rätt kunskap i rätt tid, direkt från källan. Med vår kunskap om standarders möjligheter hjälper vi våra kunder att skapa verklig nytta och lönsamhet i sina verksamheter.

Vill du veta mer om SIS eller hur standarder kan effektivisera din verksamhet är du välkommen in på www.sis.se eller ta kontakt med oss på tel 08-555 523 00.



Standards make the world go round

SIS (Swedish Standards Institute) is an independent non-profit organisation with members from both the private and public sectors. We are part of the European and global network that draws up international standards. Standards consist of documented knowledge developed by prominent actors within the industry, business world and society. They promote cross-border trade, they help to make processes and products safer and they streamline your organisation.

Take part and have influence

As a member of SIS you will have the possibility to participate in standardization activities on national, European and global level. The membership in SIS will give you the opportunity to influence future standards and gain access to early stage information about developments within your field.

Get to know the finished work

We offer our customers everything in connection with standards and their application. You can purchase all the publications you need from us - everything from individual standards, technical reports and standard packages through to manuals and online services. Our web service e-nav gives you access to an easy-to-navigate library where all standards that are relevant to your company are available. Standards and manuals are sources of knowledge. We sell them.

Increase understanding and improve perception

With SIS you can undergo either shared or in-house training in the content and application of standards. Thanks to our proximity to international development and ISO you receive the right knowledge at the right time, direct from the source. With our knowledge about the potential of standards, we assist our customers in creating tangible benefit and profitability in their organisations.

If you want to know more about SIS, or how standards can streamline your organisation, please visit www.sis.se or contact us on phone +46 (0)8-555 523 00



Den internationella standarden ISO 4113:2010 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av ISO 4113:2010.

Denna standard ersätter SS-ISO 4113, utgåva 2.

The International Standard ISO 4113:2010 has the status of a Swedish Standard. This document contains the official English version of ISO 4113:2010.

This standard supersedes the Swedish Standard SS-ISO 4113, edition 2.

© Copyright/Upphovsrätten till denna produkt tillhör SIS, Swedish Standards Institute, Stockholm, Sverige. Användningen av denna produkt regleras av slutanvändarlicensen som återfinns i denna produkt, se standardens sista sidor.

© Copyright SIS, Swedish Standards Institute, Stockholm, Sweden. All rights reserved. The use of this product is governed by the end-user licence for this product. You will find the licence in the end of this document.

Uppllysningar om sakinnehållet i standarden lämnas av SIS, Swedish Standards Institute, telefon 08-555 520 00. Standarder kan beställas hos SIS Förlag AB som även lämnar allmänna uppllysningar om svensk och utländsk standard.

Information about the content of the standard is available from the Swedish Standards Institute (SIS), telephone +46 8 555 520 00. Standards may be ordered from SIS Förlag AB, who can also provide general information about Swedish and foreign standards.

Denna standard är framtagen av kommittén för Motorer i bilar, SIS/TK 220.

Har du synpunkter på innehållet i den här standarden, vill du delta i ett kommande revideringsarbete eller vara med och ta fram andra standarder inom området? Gå in på www.sis.se - där hittar du mer information.

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 2.

The main task of technical committees is to prepare International Standards. 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.

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.

ISO 4113 was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 7, *Injection equipment and filters for use on road vehicles*.

This third edition cancels and replaces the second edition (ISO 4113:1988), which has been technically revised.

Road vehicles — Calibration fluids for diesel injection equipment

1 Scope

This International Standard specifies the requirements for calibration fluids, i.e. a basic fluid and a closer value (CV) fluid, intended for testing and calibrating diesel fuel injection equipment in production, in service, and in laboratories. The CV calibration fluid requires a closer tolerance range for kinematic viscosity and density, and can be specified to enhance the accuracy of the calibration setting.

This International Standard also allows the specification of an anti-wear (AW) requirement in order to aid the running-in of diesel fuel injection equipment.

2 Normative references

The following referenced documents are indispensable for the application 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 2049, *Petroleum products — Determination of colour (ASTM scale)*

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

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

ISO 3015, *Petroleum products — 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 at atmospheric pressure*

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

ISO 12937, *Petroleum products — Determination of water — Coulometric Karl Fischer titration method*

ASTM D665-06, *Standard test method for rust-preventing characteristics of inhibited mineral oil in the presence of water*

ASTM D892-06, *Standard test method for foaming characteristics of lubricating oils*

ASTM D1748-02(2008), *Standard test method for rust protection by metal preservatives in the humidity cabinet*

ASTM D2140-08, *Standard practice for calculating carbon-type composition of insulating oils of petroleum origin*

ASTM D2783-03(2009), *Standard test method for measurement of extreme-pressure properties of lubricating fluids (four-ball method)*

IP 306-82, *Oxidation stability of straight mineral oil*

3 Requirements

3.1 General

The calibration fluids shall be refined and deodorized mineral oils and may contain additives to inhibit undesirable characteristics such as foaming, ageing, corrosion and wear.

The calibration fluids shall not contain components in such a concentration that adversely affects human health, e.g. causing skin irritation, etc.

The calibration fluids shall be such that, without cleaning of the fuel injection equipment after calibration, proper functioning of the equipment is ensured after storage of the equipment for a period of one year minimum, in normal conditions.

The calibration fluids shall have the properties specified in Table 1.

3.2 Anti-wear

The anti-wear property of calibration fluid defined in this International Standard refers to the ability of the fluid to form a thin chemical layer between the sliding surfaces of moving parts under the initial high loading of the residual surface peaks, formed during the machining processes, in order to prevent these asperities from welding during the running-in procedure. This property is tested by means of the modified four-ball-test device. The ASTM D2783-03(2009) test procedure shall be modified as follows:

- number of test runs: 3;
- duration of each test run: 10 s;
- rotational speed: $(1\,450 \pm 40)$ min⁻¹;
- load: 500 N.

None of the lower-ball wear-scar diameters from each of the three test runs shall exceed the maximum value given in Table 1.

NOTE The lubricity requirement of diesel fuel refers to the ability of the fluid to form a film between the moving parts in order to prevent them from wear and abrasion during normal loading conditions and lifetime operation of the fuel injection equipment. This property is tested by means of the high-frequency reciprocating rig (HFRR) defined in ISO 12156-1.

4 Designation

A calibration fluid that meets the requirements of this International Standard shall be designated by the following, in the order given:

- a) the term "Calibration Fluid";
- b) reference to this International Standard, "ISO 4113";
- c) the designation "CV" if the closer tolerances for kinematic viscosity and for density are required;
- d) the designation "AW" if the specification for wear protection is required.