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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 14832-2008

Replacing GB/T 14832-1993

**Test methods for compatibility between hydraulic fluids and
standard elastomeric materials**

标准弹性体材料与液压液体的相容性试验

(English Translation)

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3.1 Elastomer

Foreword

This revised standard adopts ISO 6072:2002 "hydraulic transmission fluid liquid with a standard elastomeric material compatibility" (in English).

This standard is based on ISO 6072:2002 re-drafted.

Because of the special needs of our industry, this standard at the time of adoption of international standards have been modified, these technical differences between a single vertical line identification They are involved in terms of margin. And ISO 6072:2002 is the main technical difference.

--- Name to "standard elastomeric material and hydraulic fluid compatibility test" to make the name more clear and concise;

--- In order to facilitate the application of domestic materials, standard test formulations elastomers also recommended domestic materials;

--- Based on the verification results, the hardness of the table 4, Table 6 elongation at break, Table 8 elongation at break control test index Slightly adjusted;

Presentation --- 5.5.3 tensile strength and elongation at break of the test procedure, the present standard formulation is more clear and feasible;

--- Chapter 2 Normative references and Chapter 3 Terms and definitions added GB/T 5576, due to the letter on behalf of the elastomeric material no. comply with GB/T 5576;

--- In order to facilitate the description and use, to increase the hardness change 5.4.4.2 formula;

--- Chapter 2 references in GB/T 1232.1-2000 and GB/T 1690-1992 correspond to the non-equivalent international standards.

For ease of use, this standard also made the following editorial changes.

--- The "this International Standard" be replaced by "this standard";

"," --- With a decimal point instead of a comma as the decimal point, "";

--- Delete international standards foreword.

This standard replaces GB/T 14832-1993 "rubber material and hydraulic fluid compatibility test." this standard and GB/T 14832-1993 compared to the main changes are as follows.

--- Name to "standard elastomeric material and hydraulic fluid compatibility test";

--- Increased directory, preface, introduction;

--- Adds a standard nitrile rubber and hydrogenated nitrile rubber formulation standard formula;

--- Remove elastomer compatibility index of terms and definitions;

--- Cancel the change in the volume index and other related content.

This standard Annex A, Annex B, Annex C is informative appendices.

The standard proposed by China Petroleum and Chemical Industry Association.

This standard by the National Rubber and rubber products sealing products Standardization Technical Committee Technical Committee (SAC/TC35/SC3) Centralized.

This standard was drafted. Northwest Rubber Plastic Research and Design Institute, Anhui Ding seals Co., Ltd.

Introduction

In hydrodynamic systems and other fluid sealing system, the elastomer used as a sealing member. The elastomeric material having a recovery after deformation Restored to the original size and shape of the ability of the material. Hydraulic fluid is water, oil or other liquids, hydraulic fluid under pressure through an orifice or A closed circuit. If, after chemical reactions and physical swelling did not occur between the liquid elastomer material and significant changes, put it They are defined as compatible.

The standard sample appropriate standard test elastomer under test conditions (see Table 11) is placed in a certain predetermined liquid immersion After measuring the volume, hardness, tensile strength and rate of change of elongation at break, which can determine the liquid elastomer compatibility index (ECI), and can be given in Chapter 5 format to represent. With ECI (should be provided by the oil suppliers), may not be able to extend the test Select the appropriate combination of liquid and the elastomeric material, and also provides sufficient information to make it without the help of a large number of screening tests, you can Completely rule out unsuitable elastomer/liquid combinations.

Representative of various elastomers standard formula used to evaluate the impact of the

hydraulic fluid formulations, and can be used with the actual provider Elastomer products for comparison. They also help additives and hydraulic fluids of different manufacturers to develop and elastomer compatibility of the hydraulic fluid.

Compatibility test standard elastomeric material and hydraulic fluid

1 Scope

This standard specifies the test methods and evaluation criteria elastomer hydraulic fluid compatibility, standard elastomers are in accordance with the provisions of recipe and work Arts manufactured for liquid basic comparison.

This standard provides five elastomer compound formulation, mixing and curing procedures.

- a) nitrile rubber (NBR1 and NBR2);
- b) Viton (FKM2);
- c) EPDM (EPDM1);
- d) hydrogenated nitrile rubber (HNBR1).

This procedure by under controlled conditions, measured before and after soaking the corresponding test the physical properties of the elastomer standard sample to evaluate the mineral group Hydraulic fluid, the hydraulic fluid of the impact of such elastomers retardant hydraulic fluids and biodegradable.

This standard does not provide an elastomeric material formulation actually used, if necessary, the actual use of the elastomer compatibility of these procedures can feed Line test.

Note: These elastomeric material used in the formulation of the liquid change sensitive, and also has a high swelling characteristics. In order to achieve a sufficient shelf life should be used Stable curing system.

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB/T 528-1998 vulcanized rubber and thermoplastic rubber tensile stress strain properties (eqv ISO 37:1994) GB/T 533-1991 vulcanized rubber - Determination of density (eqv ISO 2781. 1988) GB/T 1232.1-2000 unvulcanized rubber disc shear viscosity meter

measurement - Part 1. Determination of Mooney viscosity (Neq ISO 289-1:1994) GB/T 1690-1992 Test method for liquid-resistant vulcanized rubber (neq ISO 1817. 1985) GB/T 5576 rubber and latex nomenclature (GB/T 5576-1997, idt ISO 1629:1995) GB/T 6031-1998 Determination of vulcanized rubber or thermoplastic rubber hardness (10 ~ 100IRHD) (idt ISO 48:1994) GB/T 6038-2006 Rubber test feed ingredients, mixing and vulcanization - Equipment and procedures (ISO 2393-1994, MOD) GB/T 7631.2-2003 Lubricants, industrial oils and related products (L class) classification - Part 2. H (Hydraulic systems) (ISO 6743-4:1999, IDT) GB/T 7759-1996 vulcanized rubber, thermoplastic rubber at room temperature, high and low temperature compression set was measured (eqv ISO 815.

1991)

GB/T 17446 fluid power systems and components Terminology (GB/T 17446-1998, idt ISO 5598. 1985)

3 Terms and Definitions

GB/T 5576 and GB/T 17446 and identified the following terms and definitions apply to this standard.

Rubber-like polymer materials, such materials deformed under low stress, rapid recovery after stress cancel, close to the initial size and shape.