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

GB/T 511-2010

**Petroleum, petroleum products and additives -- Method for
determination of mechanical admixtures
(English Translation)**

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Foreword

This Standard modified and adopted the former Soviet Union standard TOCT 6370-1983 (1997) "Petroleum, petroleum products and additives - Method for determination of mechanical admixtures".

This Standard was re-drafted in accordance with TOCT 6370-1983 (1997).

This Standard modified TOCT 6370-1983 (1997) so as to make it suitable for the national conditions of China. The structural differences between this Standard and TOCT 6370-1983 (1997) are shown in Appendix A; and technical differences are shown in Appendix B. The main technical differences between this Standard and TOCT 6370-1983 (1997) are as follows.

- Added "Normative references" in this Standard;
- Made appropriate modifications to "equipment and materials" of TOCT 6370-1983 (1997) in Clause 4 "Equipment and materials", based on Chinese actual situation;

- TOCT 6370-1983 (1997) requires to use white or red card quantitative analysis filter paper, and white card filter paper is required in arbitration test; this Standard adopts quantitative filter paper of which the speed is moderate and diameter is 11 cm based on Chinese national conditions (GB/T 1914);
- Deleted 2.4 and 2.5 of TOCT 6370-1983 (1997), i.e., " Before filter paper or porous glass filter reaches to constant weight, it shall use the solvent used in the test to rinse in advance"; added 7.9 and blank test correction during calculation;
- Added notes in 7.4; made description of the processing of new porous glass filter and the cleaning after use;
- Added Appendix A "Comparison on clause number between this Standard and TOCT 6370-1983 (1997)" and Appendix B "Technical differences between this Standard and TOCT 6370-1983 (1997)".

This Standard replaces GB/T 511-1988 "Petroleum products and additives - Method for determination of mechanical admixtures (gravimetric method)" which was formulated by adopting TOCT 6370-59 "Petroleum products and additives - Method for determination of mechanical admixtures".

Compared with GB/T 511-1988, the main changes are as follows.

- The name of this Standard was modified as "Petroleum, petroleum products and additives - Method for determination of mechanical admixtures";
- The application was modified as. petroleum, liquid petroleum products and additives; not applicable to lubricating grease and asphalt;
- Modified porous glass filter specifications in this Standard based on TOCT 6370-1983 (1997);
- In reagents, benzene was replaced by toluene, and ethanol-benzene mixed solvent (1.4) was replaced by ethanol- toluene mixed solvent (1.4);

- For constant weight paper or porous glass filter, the oven temperature was modified from 105°C~110°C to 105°C±2°C; and the first drying time was modified from "not less than 1h" to "not less than 45 min";
- During preparation, this Standard deleted "when using filter paper, when using ethanol-benzene mixture or ethanol-ether mixture to continue rinsing in the test instead of distilled water, it shall use 50 mL of above-mentioned solvents to rinse the filter paper"; added the calculation of blank test correction in calculation equation;
- Dilution ratio of sampling volume and solvent in this Standard was modified based on TOCT 6370-1983 (1997);
- Solvent for rinsing in test procedures was modified based on TOCT 6370-

1983 (1997);

- During determination of mechanical admixtures in petroleum, this Standard added "use silver nitrate solution to inspect chloride in filtrate";
- Precision was modified according to TOCT 6370-1983 (1997); requirements for repeatability is stricter; added reproducibility.

Appendix A and Appendix B of this Standard are informative.

This Standard was proposed by National Standardization Technical Committee on Petroleum Products and Lubricants.

This Standard shall be under the jurisdiction of Petroleum Fuels and Lubricants Technical Committee of National Standardization Technical Committee on Petroleum Products and Lubricants.

The drafting organization of this Standard. North-China Institute of China Petrochemical Sales Co., Ltd.

Drafter of this Standard. Chen Chunhui.

This Standard replaces the following previous standards.

- GB/T 511-1965, GB/T 511-1977, GB/T 511-1988.

Petroleum, petroleum products and additives -

Method for determination of mechanical admixtures

1 Scope

This Standard specifies the method for determination of mechanical admixtures in petroleum, petroleum products and additives by using constant weight quantitative filter paper or porous glass filter to filter the sample.

This Standard is applicable to determination of mechanical admixtures in petroleum, petroleum products and additives.

This Standard is not applicable to lubricating grease and asphalt.

2 Normative references

The following standards contain the provisions which, through reference in this Standard, constitute the provisions of this Standard. For dated references, subsequent amendments (excluding corrections) or revisions do not apply to this Standard. However, the parties who enter into agreement based on this Standard are encouraged to investigate whether the latest versions of these documents are applicable. For undated reference documents, the latest versions apply to this Standard.

GB/T 1914 Chemical analytical filter paper

GB/T 6682 Water for analytical laboratory use - Specification and test methods (GB/T 6682-2008, ISO 3696.1987, MOD)

SH 0004 Solvent oil for rubber industrial use

3 Method summary

Weigh a certain amount of sample; dissolve it in the solvent used; use constant weight filter paper or porous glass filter to filter; the admixtures left on the filter paper or porous glass filter is the mechanical admixtures.

4.9 Vacuum pump or water pump. ensure the residual pressure is not greater than 1.33×10^3 Pa.