

SH

INDUSTRY STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

SH/T 0356-1996

Fuel oil
(English Translation)

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Foreword

No.1~No.6 fuel oil in this Standard are formulated by equivalently adopting ASTM D396-93 "Standard specification for fuel oils". Based on the current practical situation, it adds the high-viscosity No.7 fuel oil. The writing format of the standard is in accordance with GB/T 1.1-1993; test methods adopt, as possible, the Chinese national standards or industry standards which are the same as or corresponding to the methods of ASTM standard.

This Standard replaces the SH 0356-92, since the date of implementation.

This Standard was proposed by and shall be under the jurisdiction of Sinopec Petrochemical Science Research Institute.

Responsible drafting organization of this Standard. Sinopec Petrochemical Science Research Institute.

Main drafter of this Standard. Lu Qiping.

Fuel oil

1 Scope

This Standard specifies the technical conditions of eight kinds of fuel oils used in different operating conditions and in different burners.

This Standard can be used for specification of fuel oils in supply-purchase contract. It

can also be used as the guide when the fuel oil users select the most suitable grade-numbers they need.

2 Normative references

GB/T 260 Determination of water content in petroleum products

GB/T 261 Petroleum products - Determination of flash point - Closed cup method

GB/T 265 Petroleum products - Determination of kinematic viscosity and calculation of dynamic viscosity

GB/T 268 Petroleum products - Determination of carbon residue - Conradson method

GB/T 380 Petroleum products - Determination of sulfur content in petroleum products - Lamp method

GB/T 388 Petroleum products - Determination of sulfur content in petroleum products - Oxygen bomb method

GB/T 508 Petroleum products - Determination of ash

GB/T 511 Petroleum products and additives - Determination of mechanical impurities - Gravimetric method

GB/T 1884 Crude petroleum and liquid petroleum products - Laboratory determination of density - Hydrometer method

GB/T 1885 Petroleum measurement tables

GB/T 3535 Petroleum oils - Determination of pour point

GB/T 3536 Petroleum products - Determination of flash and fire point - Cleveland open cup method

GB/T 4756 Petroleum and its liquid products - Manual sampling

GB/T 5096 Petroleum products - Corrosiveness to copper - Copper strip test

GB/T 6531 Crude petroleum and fuel oils - Determination of precipitate - Extraction method

GB/T 6533 Crude petroleum - Determination of water and precipitate - Centrifuge method

GB/T 6536 Petroleum products - Determination of distillation

GB/T 11137 Black petroleum products - Determination of kinematic viscosity

(reverse-flow method) and calculation of dynamic viscosity

GB/T 11140 Petroleum products - Determination of sulfur - X-ray spectrometry

SH/T 0160 Petroleum products - Determination of carbon residue - Gram method

SH 0160 Rules for the packing, storage, transportation, and inspection upon delivery of petroleum products

SH/T 0172 Determination of sulfur in petroleum products - High-temperature method

3 Grade-numbers

Fuel oil can be divided into eight grade-numbers. No.1, No.2, No.4-light, No.4, No.5-light, No.5-heavy, No.6, and No.7.

No.1 and No.2 are distillate fuel oil that apply to home-use or industrial small burner.

Especially, the No.1 applies to pneumatic type burner, or it can be used at the occasion that the low pour point fuel oil is required in the storage conditions.

No.4-light and No.4 are heavy distillate fuel oil, or the fuel oil that is combined by distillate fuel oil and residual fuel oil. They apply to the industrial burners which require this viscosity range.

No.5-light, No.5-heavy, No.6, and No.7 are the residual fuel oil of which the viscosity and distillation range are incremental. They apply to industrial burners. In order to load-unload and atomize normally, the fuel oil usually needs to be preheated.

4.1 General requirements

Not more than 846 872 - - - - - GB/T 1885

Pour point, C4) Not more than -18 -6 -6 -6 - - 5) - GB/T 3535

Note:

1 If there is one index of certain grade-number of fuel oil in this Standard not complying, it still can not be

automatically changed to the next grade-number, unless it complies with all the

requirements of the next

grade-number. However, for modification of individual indicators of special operating conditions, it can be

negotiated among buyer, seller and manufacturing plant.

2 Test methods can also adopt the corresponding methods listed in Chapter 2. However, the test method

specified in Table 1 is the arbitration method.

1) The total value OF water that is determined by using the distillation method in GB/T 260 AND

precipitates that are determined by using extraction method in GB/T 6531 shall not be more than the

value shown in the table. The precipitates obtained by extraction method in No.6 fuel oil must not be

more than 0.50% (m/m). When the water and precipitates are more than 1% (v/v), the value shall be all

deducted from the total value. When the water and precipitates of No.7 fuel oil are more than 2% (v/v),

the value shall be all deducted from the total value. If there is dispute, the measuring results in GB/T

6533 shall prevail.

2) If low-sulfur fuel oil is needed, the light-viscosity fuel oil can be supplied in accordance with the

negotiation between the supplier and purchaser.

3) The limit value is to guarantee the lowest heat value, and to avoid misinformation as No.2 fuel oil and

incorrect use.

4) As long as it is needed by storage and use, the pour point can be specified to be lower and higher.

However, when the pour point is lower than -18°C, the viscosity of No.2 fuel oil shall not be less than