INTERNATIONAL STANDARD 2049

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Petroleum products — Determination of colour

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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 2049 was drawn up by Technical Committee ISO/TC 28, *Petroleum products*.

It was approved in June 1971 by the Member Bodies of the following countries:

Austria	India	South Africa, Rep. of
Belgium	Ireland	Spain
Bulgaria	Italy	Sweden
Chile	Korea, Rep. of	Switzerland
Czechoslovakia	Netherlands	Turkey
Egypt, Arab Rep. of	New Zealand	United Kingdom
France	Poland	U.S.A.
Germany	Portugal	U.S.S.R.
Greece	Romania	

No Member Body expressed disapproval of the document.

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Petroleum products — Determination of colour

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a method for the visual determination of the colour of a variety of petroleum products such as lubricating oils, heating oils, diesel fuel oils, and petroleum waxes.

2 APPARATUS

2.1 Colorimeter, consisting of a light source, glass colour standards, sample container housing with cover, and viewing piece, as described in the Annex.

2.2 Sample container, of clear colourless glass. For referee tests use the glass sample jar shown in the Figure. For routine tests, it is permissible to use a glass jar such as is used for cloud and pour-point tests, i.e. a cylindrical jar with a flat bottom of 30 to 33.5 mm internal diameter and 115 to 125 mm external height.

Dimensions in millimetres

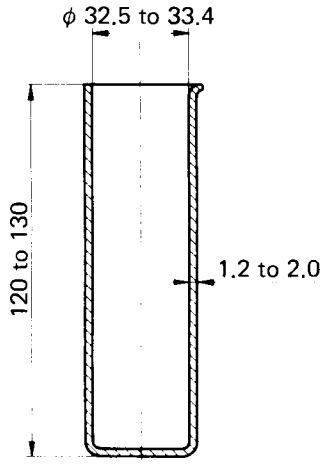

FIGURE — **Glass sample jar**

3 PREPARATION OF SAMPLE

3.1 Liquid petroleum products such as lubricating oils

Fill the sample container to a depth of 50 mm or more and observe the colour. If the sample is not clear, heat it to a temperature 6 °C above the point at which the cloud or haze disappears, and determine the colour at that temperature. If the sample is darker than 8 colour to ISO 2049 (see Table in Annex), mix 15 volumes of the sample into 85 volumes of solvent (3.3) and determine the colour of the mixture.

3.2 Petroleum waxes, including petrolatum

Heat the sample to a temperature 11 to 17 °C above the melting point of the wax. If the sample is darker than 8 colour to ISO 2049, mix 15 volumes of melted sample with 85 volumes of solvent (3.3) brought to the same temperature and determine the colour of the mixture at that temperature.

3.3 Solvent

Kerosene, used for diluting dark samples as described in 3.1 and 3.2: this solvent shall have a colour lighter than a potassium dichromate ($K_2Cr_2O_7$) solution formed by dissolving 4.8 mg of pure anhydrous potassium dichromate in 1 l of distilled water.

4 PROCEDURE

4.1 Place a sample container, filled to a depth of at least 50 mm with distilled water, in that compartment of the colorimeter through which the standard glasses will be observed. Place the sample in its container in the other compartment. Cover both containers to exclude all exterior light.

4.2 Switch on the light source of the colorimeter and compare the colour of the sample with that of the standard glasses. Determine which glass best matches the colour of the sample.

5 EXPRESSION OF RESULTS

5.1 Report as the colour of the sample, the designation of the glass producing a matching colour, for example: "7.5 colour to ISO 2049".

5.2 If the colour of the sample is intermediate between those of two standard glasses, record the designation of the darker glass preceded by the letter "L", for example: "L7.5 colour to ISO 2049". Never report the colour of a sample as being darker than a given standard except those darker than 8, for which the designation "D8 colour to ISO 2049" is to be given.

5.3 If the sample has been diluted with solvent (3.3), report the colour of the mixture followed by the abbreviation "Dil", for example: "L7.5 Dil colour to ISO 2049".

6 PRECISION

The following criteria shall be used for judging the acceptability of results (95 % confidence level):

6.1 Repeatability

Duplicate results by the same operator using the same apparatus shall not differ by more than 0.5 of a colour number.

6.2 Reproductibility

The results submitted by each of two laboratories shall not differ by more than 0.5 of a colour number.