SLOVENSKI STANDARD
SIST ISO 2908:1996

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Naftni voski - Določanje vsebnosti olja

Petroleum waxes -- Determination of oil content

Cires de pétrole -- Détermination de la teneur en huile

Ta slovenski standard je istoveten z: **ISO 2908:1974**

ICS:

75.140	Voski, bitumni in drugi naftni proizvodi	Waxes, bituminous materials and other petroleum products

SIST ISO 2908:1996 **en**

INTERNATIONAL STANDARD 2908

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Petroleum waxes — Determination of oil content

Cires de pétrole — Détermination de la teneur en huile

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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 2908 was drawn up by Technical Committee ISO/TC 28, *Petroleum products*, and circulated to the Member Bodies in March 1973.

It has been approved by the Member Bodies of the following countries :

Belgium	Iran	South Africa, Rep. of
Brazil	Israel	Sweden
Bulgaria	Mexico	Thailand
Canada	Netherlands	Turkey
Czechoslovakia	New Zealand	United Kingdom
France	Norway	U.S.A.
Germany	Poland	U.S.S.R.
Hungary	Portugal	
India	Romania	

No Member Body expressed disapproval of the document.

Printed in Switzerland

Petroleum waxes — Determination of oil content

1 SCOPE AND FIELD OF APPLICATION

1.1 This International Standard specifies a test procedure for the determination of oil in petroleum waxes having a congealing point of 30 °C or higher as determined by ISO 2207 and containing not more than 15 % of oil.

NOTE — Difficulties can arise with some waxes of oil contents greater than 5 % due to the limited solubility of oil in methyl ethyl ketone which can lead to the formation of two liquid phases. If this occurs, the method is not applicable to the material under test.

1.2 The oil content of a wax may have significant effects on several of its properties, such as strength, hardness, flexibility, scuff resistance, coefficient of friction, coefficient of expansion, melting point, and oil staining. The importance of these effects may be dependent upon the ultimate use of the wax.

2 REFERENCE

ISO 2207, *Petroleum waxes — Determination of congealing point.* [1]

3 PRINCIPLE

The sample is dissolved in methyl ethyl ketone, cooled to − 32 °C to precipitate the wax, and filtered. The oil content of the filtrate is determined by evaporating the methyl ethyl ketone and weighing the residue.

4 SOLVENT

Methyl ethyl ketone, conforming to the following specification as determined by the specified or equivalent methods :

Property	Values	Methods[3]
Relative density 20/20 °C	0,805 to 0,807	2)
Colour	water white, 1,0 max.	IP 17 (B)
Distillation range	100 % between 78 and 81 °C	ASTM D 1078
Acidity	0,003 % (*m*/*m*) max. (expressed as acetic acid)	ASTM D 1613
Water content	not more than 0,3 % (*m*/*m*)	ASTM D 1364
Residue on evaporation	residue remaining after evaporation of 4 ml shall not exceed 0,1 mg	see procedure in 7.6
Refractive index at 20 °C	1,378 ± 0,002	ASTM D 1218

Store the solvent over anhydrous calcium sulphate (5 % (*m*/*m*) of the solvent).

Filter the solvent prior to use.

1) At present at the stage of draft.

2) A suitable method that is accurate to the third decimal place may be employed.

3) Substitution of the IP and ASTM method references by cross-references to appropriate International Standards will be made as soon as such International Standards become available.

5 APPARATUS

5.1 Filter stick and assembly, consisting of a 10 mm diameter sintered glass filter stick of porosity grade P16 (10 to 15 μm pore size index) as determined by the method given in the annex, provided with an air pressure inlet tube and delivery nozzle. It is provided with a ground glass joint to fit a 25 by 170 mm test tube. The dimensions for a suitable filtration assembly are shown in figure 1.

NOTE – A metallic filter stick may be employed if desired. A filter stick made of stainless steel and having a 12,7 mm disc of porosity grade P16 (10 to 15 μm pore size index) has been found to be satisfactory. The metallic apparatus is inserted into a 25 by 150 mm test tube and held in place by means of a cork.

Dimensions in millimetres

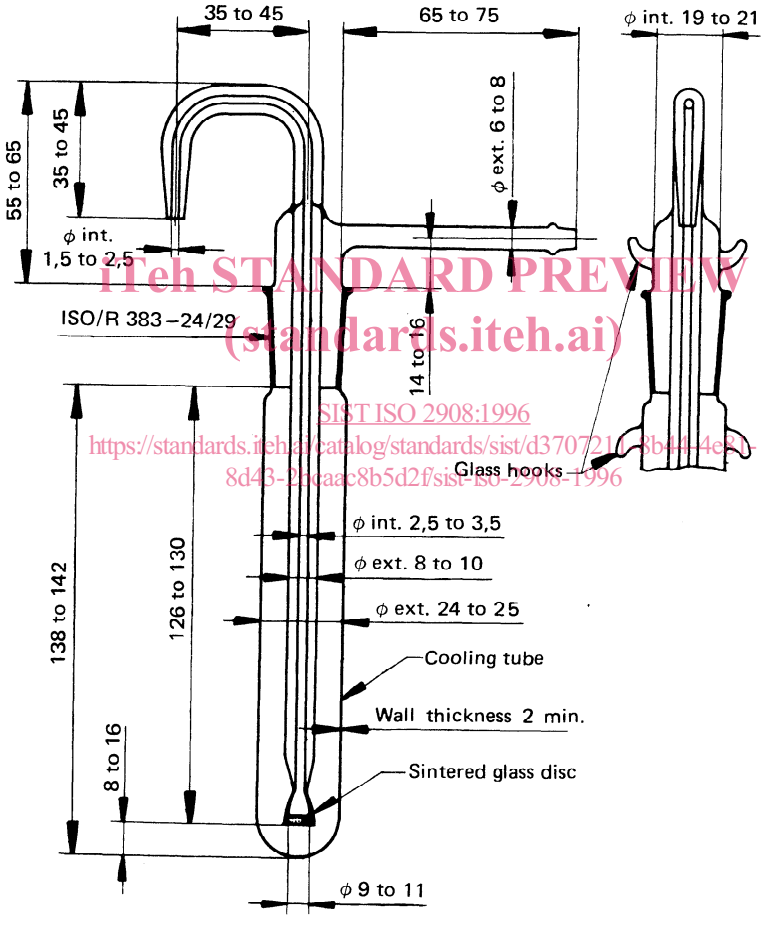


FIGURE 1 – **Filter stick**

5.2 Cooling bath, consisting of an insulated box with 25,4 mm holes in the centre to accommodate any desired number of test tubes. The bath may be filled with a suitable medium such as kerosine, and may be cooled by circulating a refrigerant through coils, or by using solid carbon dioxide. A suitable cooling bath to accommodate three test tubes is shown in figure 2.

Dimensions in millimetres

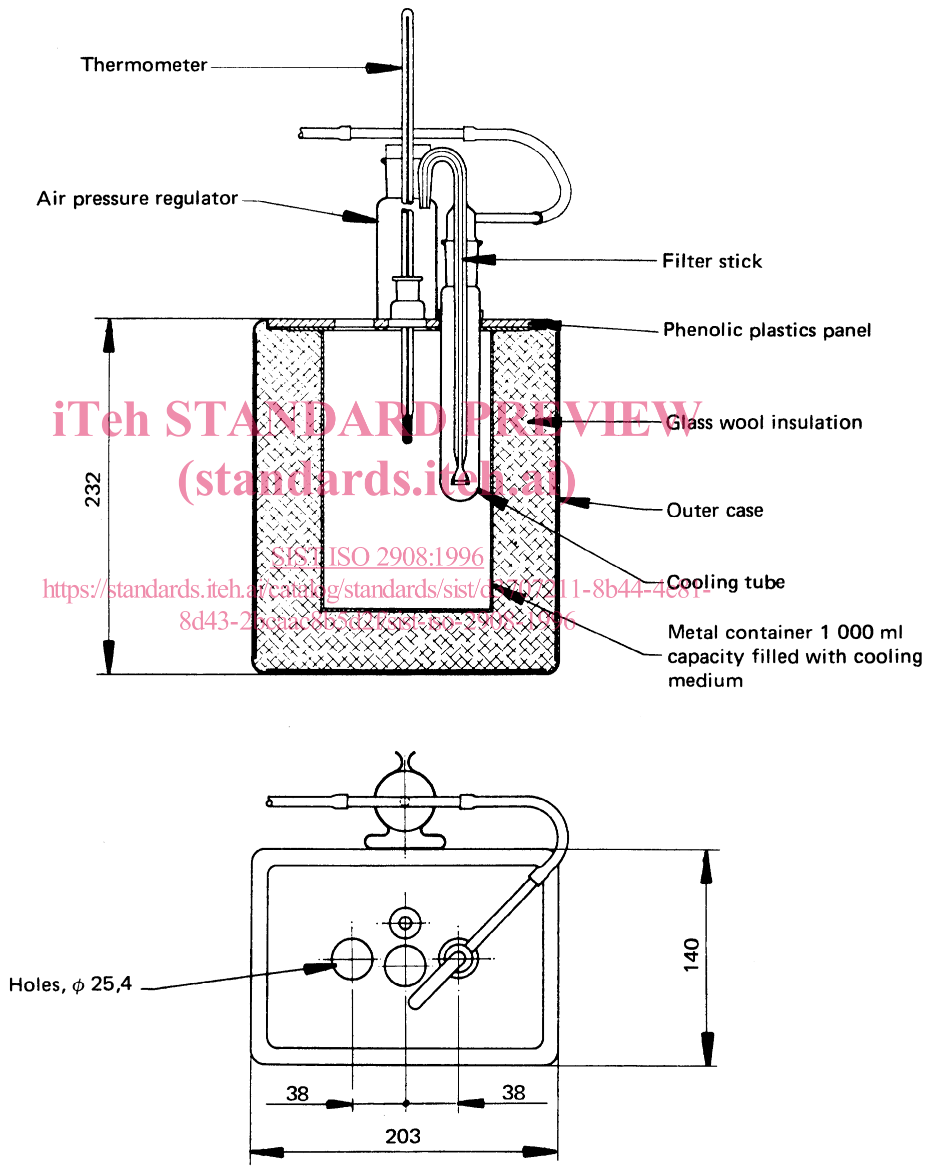


FIGURE 2 — **Cooling bath**

5.3 Dropper pipette, provided with a rubber bulb, and calibrated to deliver 1 ± 0,05 g of molten wax.

5.4 Transfer pipette, calibrated to deliver 15 ± 0,06 ml.

5.5 Air pressure regulator, designed to supply air to the filtration assembly (5.1) at the volume and pressure required to give an even flow of filtrate.

Either a conventional pressure-reducing valve or a mercury bubbler-type regulator has been found satisfactory. The latter type, illustrated in figure 3, consists of a 250 ml glass cylinder and a T-tube held in the cylinder by means of a rubber stopper grooved at the sides to permit the escape of excess air. The volume and pressure of the air supplied to the filtration assembly is regulated by the depth to which the T-tube is immersed in mercury at the bottom of the cylinder. Absorbent cotton placed in the space above the mercury prevents the loss of mercury by spattering. The air pressure regulator is connected to the filter stick and assembly by means of rubber tubing.

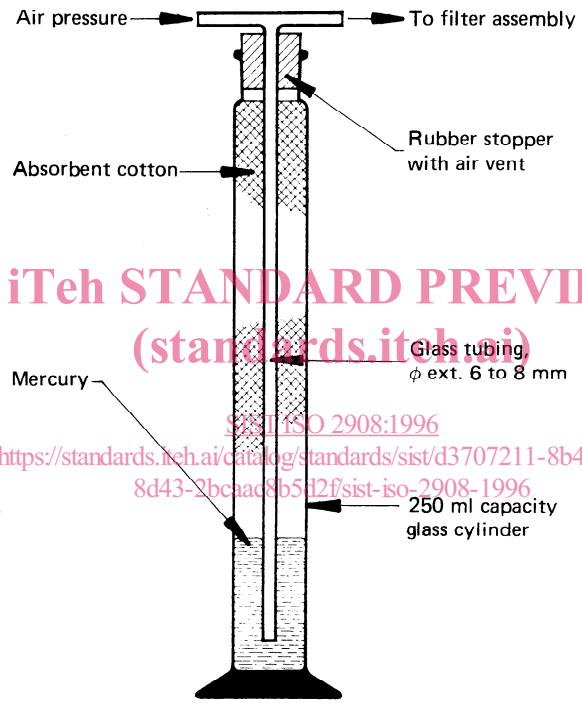


FIGURE 3 – **Air pressure regulator**

5.6 Thermometer, partial immersion type, conforming to the following specification :

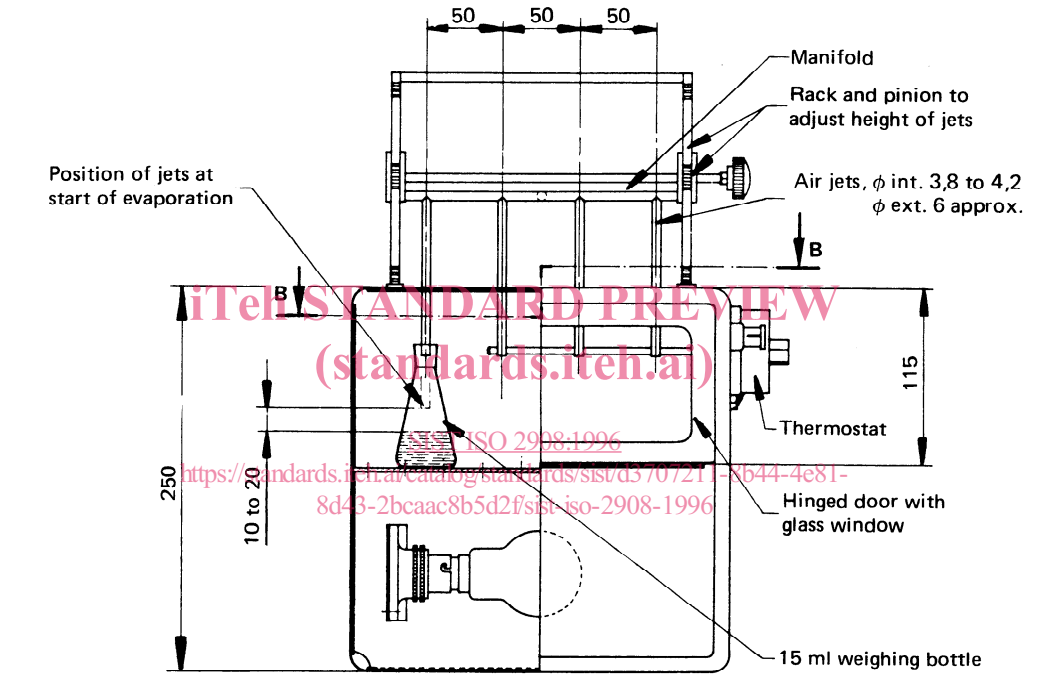
Range	− 37 to 21 °C
Immersion	76 mm
Graduation at each	0,5 °C
Longer lines at each	1 and 5 °C
Figured at each	5 °C
Scale error not to exceed	0,2 °C
Expansion chamber permitting heating to	105 °C
Overall length	350 to 355 mm
Stem diameter	7,0 to 8,0 mm
Bulb shape	cylindrical
Bulb length	15 to 20 mm
Bulb diameter	6,0 to 7,0 mm
Length of graduated portion	105 to 140 mm
Distance from bottom of bulb to − 37 °C line	170 to 185 mm
Top finish	plain
Mean temperature of medium surrounding exposed column during testing	21 °C

5.7 Weighing bottles, conical in shape and glass-stoppered, having a capacity of 15 ml.

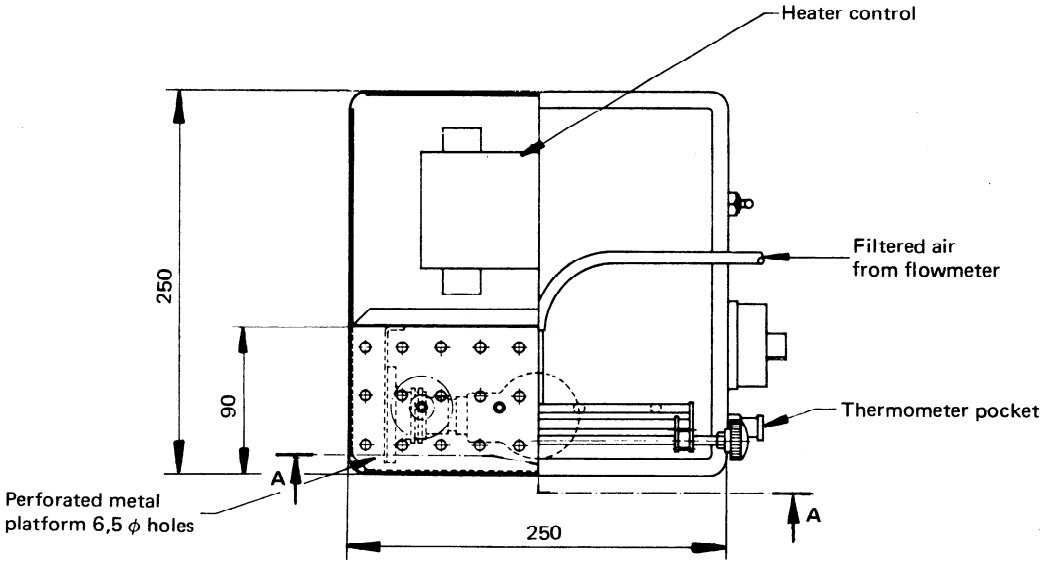
5.8 Evaporation assembly, consisting of an evaporating cabinet and connections, essentially as illustrated in figure 4, and capable of maintaining a temperature of 35 ± 1 °C around the evaporation flasks.

Construct the jets with an inside diameter of 4 ± 0,2 mm for delivering a stream of clean, dry air vertically downward into the weighing bottle. Support each jet so that the tip is 15 ± 5 mm above the surface of the liquid at the start of the evaporation. Supply air at the rate of 2 to 3 l/min per jet, purified by passage through a tube of 10 mm bore packed loosely to a height of 200 mm with absorbent cotton. Periodically check the cleanliness of the air by evaporating 4 ml of methyl ethyl ketone by the procedure specified in 7.6. When the residue does not exceed 0,1 mg, the evaporation equipment is operating satisfactorily.

Dimensions in millimetres



Half-section A-A



Half-section B-B

FIGURE 4 – **Evaporation assembly**