
INTERNATIONAL STANDARD



5272

Toluene for industrial use — Specifications

Toluène à usage industriel — Spécifications

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Descriptors : aromatic hydrocarbons, toluene, materials specifications.

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 5272 was developed by Technical Committee ISO/TC 78, *Aromatic hydrocarbons* and was circulated to the member bodies in October 1977.

It has been approved by the member bodies of the following countries :

Australia	Hungary	Portugal
Austria	India	Romania
Brazil	Korea, Rep. of	South Africa, Rep. of
Bulgaria	Mexico	Turkey
Czechoslovakia	Netherlands	United Kingdom
Egypt, Arab Rep. of	Philippines	U.S.S.R.
Germany, F.R.	Poland	

The member bodies of the following countries expressed disapproval of the document on technical grounds :

France
Italy

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WARNING — Toluene is flammable and toxic by inhalation, ingestion or skin absorption.

ISO 5275, *Aromatic hydrocarbons — Test for presence of mercaptans (thiols) — Doctor test.*

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies requirements for two grades of toluene suitable for industrial purposes.

Grade 1 (synthesis grade) is a high quality grade normally required for use only as a chemical feedstock. Grade 2 (ordinary grade) relates to commercially pure toluene and is suitable for most normal commercial uses.

This International Standard is applicable to material which consists essentially of toluene ($C_6H_5 \cdot CH_3$).

ISO 5276, *Aromatic hydrocarbons — Test for neutrality.*

ISO 5277, *Aromatic hydrocarbons — Determination of residue on evaporation.*¹⁾

ISO 5279, *Toluene for industrial use — Determination of impurities — Gaschromatographic method.*¹⁾

ISO 5281, *Aromatic hydrocarbons — Determination of density at 20 °C.*

ISO 6271, *Clear liquids — Estimation of colour by the platinum-cobalt scale.*¹⁾

2 REFERENCES

ISO 2160, *Petroleum products — Corrosiveness to copper — Copper strip test.*

ISO 2211, *Liquid chemical products — Measurement of colour in Hazen units (platinum-cobalt scale).*

ISO 4626, *Volatile organic liquids — Determination of boiling range.*

ISO 5274, *Aromatic hydrocarbons — Acid-wash test.*

3 REQUIRED CHARACTERISTICS

Grade 1 (synthesis grade) and grade 2 (ordinary grade) toluene shall conform to the appropriate requirements shown in the table.

NOTE — Until such time as the test methods have been published as International Standards, the methods used shall be the subject of agreement between the interested parties.

4 SAMPLING²⁾

Take a representative sample of not less than 1 000 ml from the bulk of the material.

1) At present at the stage of draft.

2) The sampling of toluene and other aromatic hydrocarbons will form the subject of a future International Standard.

TABLE — Required characteristics

Characteristic	Requirement for grade 1	Requirement for grade 2	Test method
Clarity	Clear and free from separated impurities	Clear and free from separated impurities	Visual inspection
Colour	Not darker than the 20 unit standard ¹⁾	Not darker than the 20 unit standard ¹⁾	ISO 2211 or ISO 6271
Density at 20 °C	Not lower than 0,864 g/ml or higher than 0,868 g/ml	Not lower than 0,864 g/ml or higher than 0,868 g/ml	ISO 5281
Undissolved water at 20 °C	Absent	Absent	Visual inspection by transmitted light
Boiling range	—	Not greater than 1,0 °C The boiling range shall include the temperature 110,6 °C	ISO 4626
Acid-wash test	Acid layer not darker in colour than the standard solution containing 0,2 g of potassium dichromate in 1 000 ml of dilute acid solution	Acid layer not darker in colour than the standard solution containing 0,2 g of potassium dichromate in 1 000 ml of dilute acid solution	ISO 5274
Total sulphur content	Not greater than 2 mg/kg	Not greater than 150 mg/kg	A suitable method of test will form the subject of a future International Standard
Neutrality	Neutral	Neutral	ISO 5276
Residue on evaporation	Not greater than 5 mg/100 ml	Not greater than 5 mg/100 ml	ISO 5277
Benzene content	Not greater than 0,10 % (m/m)	Not greater than 0,5 % (m/m)	ISO 5279 https://standards.iteh.ai/catalog/standards/sist/da0ae1a3-1968-479f/b47-5a5022589d416/iso-5272-1979
Non-aromatic hydrocarbon content	Not greater than 0,25 % (m/m)	Not greater than 0,25 % (m/m)	
C ₈ aromatic hydrocarbon content	Not greater than 0,10 % (m/m)	Not greater than 0,10 % (m/m)	
Freedom from objectionable sulphur compounds	—	Not greater than a slight tarnish equivalent to the No. 1 copper strip	ISO 2160
Mercaptans (thiols)	—	Absent	ISO 5275

1) The strongest standard matching solution required is that with a colour of 50 units. Only 1 000 ml of the standard colorimetric solution need, therefore, be prepared.