
**Plastics — Determination of xylene-
soluble matter in polypropylene**

*Plastiques — Détermination des matières présentes dans le
polypropylène solubles dans le xylène*



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established 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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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ISO 16152 was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 9, *Thermoplastic materials*.

It replaces ISO 6427:1992, Annex B, which has been technically revised. The revised method tightens the physical parameters of the test to provide improved repeatability and reproducibility.

Introduction

This International Standard specifies a method for the quantitative determination of those components of polypropylene that are soluble in xylene. This new method defines more precisely the factors that have the greatest influence on the repeatability and reproducibility of the determination. The polypropylene is dissolved in hot xylene, then cooled under controlled conditions down to 25 °C, which results in the precipitation of the insoluble fraction. The soluble matter remains in the xylene. The xylene is then evaporated and the residue weighed. The soluble content of polypropylene is important as it has a major influence on the properties of the polypropylene.

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Plastics — Determination of xylene-soluble matter in polypropylene

1 Scope

1.1 This International Standard specifies a method for determining the mass fraction of a polypropylene homopolymer or copolymer which is soluble in xylene at 25 °C.

1.2 A weighed amount of dried sample is dissolved in xylene under reflux conditions, then cooled under controlled conditions and maintained at 25 °C to ensure controlled crystallization of the insoluble fraction.

1.3 The xylene-soluble fraction is then recovered by evaporation of the xylene and determined by weighing the residue.

1.4 Other materials with solubilities similar to that of the xylene-soluble fraction, such as additives, may interfere with the determination.

2 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

2.1

xylene-soluble fraction

S_s

that percentage, by mass, of the polymer that does not precipitate out when a solution of the polymer in xylene is cooled from reflux temperature to +25 °C and held at that temperature for a specified period of time

3 Apparatus

3.1 **Reflux condenser**, length 400 mm.

3.2 **Flat-bottomed flask**, capacity 400 ml, with one or two necks, or **conical flask** or **cylindrical bottle** of similar capacity.

3.3 **Insulating disc**, made of fibreglass or mineral wool.

3.4 **Magnetic stirrer**, with temperature-controlled hotplate, thermostatted oil bath or heating block capable of maintaining 140 °C to 150 °C.

3.5 **Stirrer bar**.

3.6 **Pipette**, class A, 200 ml or equivalent.

3.7 **Pipette**, class A, 100 ml or equivalent.

3.8 **Glass-stoppered flask**, 250 ml.