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## **Methods of test for full-flow lubricating oil filters for internal combustion engines —**

### **Part 4: Initial particle retention efficiency, life and cumulative efficiency (gravimetric method)**

*Méthodes d'essai des filtres à huile de lubrification à passage intégral pour  
moteurs à combustion interne —*

*Partie 4: Efficacité initiale, capacité de rétention et efficacité cumulée  
(méthode gravimétrique)*

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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.

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.

International Standard ISO 4548-4 was prepared by Technical Committee ISO/TC 70, *International combustion engines*, subcommittee SC 7, *Tests for lubricating oil filters*.

ISO 4548 will consist of the following parts, under the general title *Method of test for full-flow lubricating oil filters for internal combustion engines*:

- *Part 1: Differential pressure/flow characteristics*
- *Part 2: Elements by-pass component characteristics*
- *Part 3: Resistance to high differential pressure and to elevated temperature*
- *Part 4: Initial particle retention efficiency, life and cumulative efficiency (gravimetric method)*
- *Part 5: Cold start simulation and hydraulic pulse durability test*
- *Part 6: Static burst pressure test*
- *Part 7: Vibration fatigue test*
- *Part 9: Inlet and outlet anti-drain valve tests*
- *Part 10: Life and cumulative efficiency in the presence of water in oil*
- *Part 11: Self-cleaning filters*
- *Part 12: Particle retention ability and contaminant holding capacity using particle counting*

Annexes A, B, C, D and E form an integral part of this part of ISO 4548. Annex F is for information only.

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## Introduction

ISO 4548 establishes standard test procedures for measuring the performance of full-flow lubricating oil filters for internal combustion engines. It has been prepared in separate parts, each part relating to a particular performance characteristic.

Together the tests provide the information necessary to assess the characteristics of a filter, but if agreed between the purchaser and the manufacturer, the tests may be conducted separately.