

# **Multicylinder Test Sequences for Evaluating Automotive Engine Oils**

**STP 315G**



**AMERICAN SOCIETY FOR TESTING AND MATERIALS**

# MULTICYLINDER TEST SEQUENCES FOR EVALUATING AUTOMOTIVE ENGINE OILS

Sponsored by  
Section I on Engine Oils  
Technical Division B on Automotive Lubricants  
ASTM Committee D-2 on Petroleum  
Products and Lubricants

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## Related ASTM Publications

Shear Stability of Multigrade Crankcase Oil, DS 49 (1973), \$7.75, 05-049000-12

Shear Stability of Multigrade Oils—IP Fleet Tests, DS 49-S1 (1974), \$4.00,  
05-049001-12

Low Temperature Pumpability Characteristics of Engine Oils in Full-Scale  
Engines, DS 57 (1975), \$16.00, 05-057000-12

Significance of Tests for Petroleum Products, STP 7C (1977), \$11.75, 04-007030-12

The Relationship Between Engine Oil Viscosity and Engine Performance, STP  
621 (1977), \$15.00, 04-621000-12

The Relationship Between Engine Oil Viscosity and Engine Performance, Part II,  
STP 621-S1 (1977), \$12.00, 04-621010-12

## FOREWORD

The test methods described in this publication have not been subjected to the ASTM Standardization Procedure. They are not standards or standard recommended practices of the American Society of Testing and Materials.

The test sequences for evaluating automotive engine oils were prepared to make available a technical language to describe quantitatively the operating conditions for determining the performance of crankcase oils and to describe the oil properties needed for satisfactory performance in modern passenger cars and light trucks.

One of the most important uses of the test sequences is the technical description of various classifications of oils according to performance and type of service (accomplished by cooperative action of committees in SAE, API, and ASTM). Details of the classifications are published in SAE Information Report "Engine Oil Performance and Engine Service Classification - SAE J183," API Publication 1509 "Engine Service Classification and Guide to Crankcase Oil Selection," and ASTM Research Report D-2:1002 "Engine Oil Performance Classifications."

The multi-cylinder test sequences were originally developed in 1956 by Section G-IV, a Special Study Group on Application of Crankcase Oils, under Technical Division B on Lubricating Oils, of ASTM Committee D-2 on Petroleum Products and Lubricants. Intended as the technical language for evaluating and defining oils for API Service MS, they have been known previously as the "G-IV Test Sequences" and as the "MS Test Sequences". Since 1971, the Sequence Tests have been used to define the performance requirements of the jointly developed ASTM, API, and SAE Oil Classification System.

A reorganization of Technical Division B resulted in the assignment of responsibility for this language to Section I on Engine Oils of Technical Division B of Committee D-2. In 1962, Section I recommended that the sequences be made available as an ASTM special technical publication (STP). The present printing represents the eighth publication in this series.

In the succeeding sections of this publication, the various sequences are presented in detail. In the expectation that they will be used, Section I requests that, as suggestions for improvement are identified, they be forwarded promptly to Section I of Technical Committee B so that the technical language can be kept up to date.

To each Reference Sequence is appended information showing the precision data and correlation of the Sequences with field and previous test experience as available at the time of this printing. As a continuing activity, Section I gathers and periodically reports new correlation and precision data. Latest reports are available on request to the chairman of Section I.

In accordance with the policy of keeping the test language timely and useful, the current publication incorporates changes resulting from experience with the tests. Many of these changes for Sequence IIC and Sequence IIIC have been published previously by General Motors in Information Letters. Purchasers of STP 315G desiring to receive Information Letters published subsequent to this printing may do so by writing to:

ASTM Engine Test Monitoring Center  
4400 Fifth Avenue  
Pittsburgh, Pennsylvania 15213  
Attention: P. A. Bennett

This eighth version was edited by Concept Engineering Services, Inc., 3704 Big Meadows, San Antonio, Texas 78230 with the help of the test developers and the ASTM Sequence IIC, IIIC, and VC Surveillance Panel Chairmen.

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