



Designation: D 6594 – 01

An American National Standard

## Standard Test Method for Evaluation of Corrosiveness of Diesel Engine Oil at 135°C<sup>1</sup>

This standard is issued under the fixed designation D 6594; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

### INTRODUCTION

Any properly equipped laboratory, without outside assistance, can use the procedure described in this test method. However, the ASTM Test Monitoring Center (TMC)<sup>2</sup> provides reference oils and an assessment of the test results obtained on those oils by the laboratory (see Annex A1). By these means, the laboratory will know whether their use of the test method gives results statistically similar to those obtained by other laboratories. Furthermore, various agencies require that a laboratory utilize the TMC services in seeking qualification of oils against specifications. For example, the U.S. Army imposes such a requirement in connection with several Army engine lubricating oil specifications.

Accordingly, this test method is written for use by laboratories that utilize the TMC services. Laboratories that choose not to use those services may simply ignore those portions of the test method that refer to the TMC.

This test method may be modified by means of information letters issued by the TMC. In addition, the TMC may issue supplementary memoranda related to the method (see Annex A1). For other information, refer to the research report of this test method<sup>3</sup>.

### 1. Scope

1.1 This test method is used to test diesel engine lubricants to determine their tendency to corrode various metals, specifically alloys of lead and copper commonly used in cam followers and bearings.

1.2 The values stated in SI units are to be regarded as the standard.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

### 2. Referenced Documents

#### 2.1 ASTM Standards:

D 130 Test Method for Detection of Copper Corrosion from

Petroleum Products by the Copper Strip Tarnish Test<sup>4</sup>  
D 5185 Test Method for Determination of Additive Elements, Wear Metals, and Contaminants in Used Lubricating Oils and Determination of Selected Elements in Base Oils by Inductively Coupled Plasma Atomic Emission Spectrometry (ICP-AES)<sup>5</sup>  
D 5844 Test Method for Evaluation of Automotive Engine Oils for Inhibition of Rusting (Sequence IID)<sup>6</sup>  
D 6557 Test Method for Evaluation of the Rust Preventive Characteristics of Automotive Engine Oils<sup>7</sup>  
E 691 Practice for Conducting an Inter-Laboratory Study to Determine the Precision of a Test Method<sup>8</sup>

### 3. Terminology

#### 3.1 Definitions:

3.1.1 *corrosion, n*—the chemical or electrochemical reaction between a material, usually a metal surface, and its environment that can produce a deterioration of the material and its properties. **D 5844**

3.1.2 *developer, n*—of an ASTM test method, the assigned ASTM group, working under the supervision of its governing

<sup>1</sup> This test method is under the jurisdiction of ASTM Committee D02 on Petroleum Products and Lubricants and is the direct responsibility of Subcommittee D02.B0 on Automotive Lubricants.

Current edition approved Nov. 10, 2001. Published January 2002. Originally published as D 6594 - 00. Last previous edition D 6594 - 00.

<sup>2</sup> The ASTM Test Monitoring Center will update changes in this test method by means of Information Letters. This edition incorporates revisions contained in all Information Letters through 01-1. Information Letters may be obtained from the ASTM Test Monitoring Center, 6555 Penn Ave., Pittsburgh, PA 15206-4489, Attention: Administrator.

<sup>3</sup> Available from ASTM International Headquarters. Request the High Temperature Corrosion Bench Test Research Report, RR:D02-1443.

<sup>4</sup> *Annual Book of ASTM Standards*, Vol 05.01.

<sup>5</sup> *Annual Book of ASTM Standards*, Vol 05.02.

<sup>6</sup> *Annual Book of ASTM Standards*, Vol 05.03.

<sup>7</sup> *Annual Book of ASTM Standards*, Vol 05.04.

<sup>8</sup> *Annual Book of ASTM Standards*, Vol 14.02.