



Standard Test Method for Corrosiveness to Copper from Petroleum Products by Copper Strip Test¹

This standard is issued under the fixed designation D130; 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.

This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope*

1.1 This test method covers the determination of the corrosiveness to copper of aviation gasoline, aviation turbine fuel, automotive gasoline, cleaners (Stoddard) solvent, kerosine, diesel fuel, distillate fuel oil, lubricating oil, and natural gasoline or other hydrocarbons having a vapor pressure no greater than 124 kPa (18 psi) at 37.8°C. (**Warning**—Some products, particularly natural gasoline, may have a much higher vapor pressure than would normally be characteristic of automotive or aviation gasolines. For this reason, exercise extreme caution to ensure that the pressure vessel used in this test method and containing natural gasoline or other products of high vapor pressure is not placed in the 100°C (212°F) bath. Samples having vapor pressures in excess of 124 kPa (18 psi) may develop sufficient pressures at 100°C to rupture the pressure vessel. For any sample having a vapor pressure above 124 kPa (18 psi), use Test Method [D1838](#).)

1.2 The values stated in SI units are to be regarded as the standard. The values in parentheses are for information only.

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 requirements prior to use.* For specific warning statements, see [1.1](#), [7.1](#), and [Annex A2](#).

2. Referenced Documents

2.1 ASTM Standards:²

[D396](#) Specification for Fuel Oils

¹ This test method is under the jurisdiction of ASTM Committee [D02](#) on Petroleum Products, Liquid Fuels, and Lubricants and is the direct responsibility of Subcommittee [D02.05](#) on Properties of Fuels, Petroleum Coke and Carbon Material.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

[D975](#) Specification for Diesel Fuel Oils

[D1655](#) Specification for Aviation Turbine Fuels

[D1838](#) Test Method for Copper Strip Corrosion by Liquefied Petroleum (LP) Gases

[D4057](#) Practice for Manual Sampling of Petroleum and Petroleum Products

[D4177](#) Practice for Automatic Sampling of Petroleum and Petroleum Products

[D6300](#) Practice for Determination of Precision and Bias Data for Use in Test Methods for Petroleum Products and Lubricants

[E1](#) Specification for ASTM Liquid-in-Glass Thermometers

2.2 ASTM Adjuncts:

ASTM Copper Strip Corrosion Standard³

3. Terminology

3.1 Acronyms:

3.1.1 *CAMI*—Coated Abrasives Manufacturers Institute

3.1.2 *FEPA*—Federation of European Producers Association

4. Summary of Test Method

4.1 A polished copper strip is immersed in a specific volume of the sample being tested and heated under conditions of temperature and time that are specific to the class of material being tested. At the end of the heating period, the copper strip is removed, washed and the color and tarnish level assessed against the ASTM Copper Strip Corrosion Standard.

5. Significance and Use

5.1 Crude petroleum contains sulfur compounds, most of which are removed during refining. However, of the sulfur compounds remaining in the petroleum product, some can have a corroding action on various metals and this corrosivity is not necessarily related directly to the total sulfur content. The effect can vary according to the chemical types of sulfur

³ Available from ASTM International Headquarters. Order Adjunct No. [ADJD0130](#). Names of suppliers in the United Kingdom can be obtained from Energy Institute, 61 New Cavendish St., London, W1G 7AR, U.K. Two master standards are held by the IP for reference.

*A Summary of Changes section appears at the end of this standard