This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.

Designation: D4175 – 22a

# Standard Terminology Relating to Petroleum Products, Liquid Fuels, and Lubricants[1]

This standard is issued under the fixed designation D4175; 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 terminology standard covers the compilation of terminology developed by Committee D02 on Petroleum Products, Liquid Fuels, and Lubricants, except that it does not include terms/definitions specific only to the standards in which they appear.

1.1.1 The terminology, mostly definitions, is unique to petroleum, petroleum products, lubricants, and certain products from biomass and chemical synthesis. Meanings of the same terms outside of applications to petroleum, petroleum products, and lubricants can be found in other compilations and in dictionaries of general usage.

1.1.2 The terms/definitions exist in two places: *(1)* in the standards in which they appear and *(2)* in this compilation.

1.2 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

## 2. Terminology

2.1 Alphabetical listing of terms with definitions for each term showing attributions as to source and subcommittee jurisdiction is in bold print following the definition. Those showing no attributes are under the jurisdiction of Subcommittee CS 95.

**1,3-butadiene—**hydrocarbon product containing more than 99 % 1,3-butadiene. **[D02.D0] D5274**

**abrasion,** *n*—wear by displacement of material caused by hard particles or hard protuberances. **[D02.96] D7684, D7690**

**abrasive wear,** *n*—wear due to hard particles or hard protuberances forced against and moving along a solid surface. **[D02.B0] D4998; [D02.L0] D5182**

DISCUSSION—Also called cutting wear in some instances such as machining swarf. **[D02.96] D7898**

**absorbance,** *n*—logarithm to the base 10 of the ratio of the reciprocal of the transmittance. **[D02.03] D7740**

**absorbance, (A),** *n*—the molecular property of a substance that determines its ability to take up radiant energy, expressed by:

$$A = \log_{10}(1 / T) = -\log_{10}(T)$$

where $T$ is the transmittance.

DISCUSSION—Absorbance expresses the excess absorption over that of a specified reference or standard. It is implied that compensation has been affected for reflectance losses, solvent absorption losses, and refractive effects, if present, and that attenuation by scattering is small compared with attenuation by absorption. **[D02.14] D7996**

**absorbance,** *A*, *n*—the molecular property of a substance that determines its ability to take up radiant power, expressed by:

$$A = \log_{10}\ (1/T) = -\log_{10}T$$

where $T$ is the transmittance.

DISCUSSION—Absorbance expresses the excess absorption over that of a specified reference or standard. It is implied that compensation has been affected for reflectance losses, solvent absorption losses, and refractive effects, if present, and that attenuation by scattering is small compared with attenuation by absorption. **[D02.04] D2008**

**absorbance (A),** *n*—the logarithm to the base 10 of the reciprocal of the transmittance, ($T$).

$$A = \log_{10}\ (1/T) = -\log_{10}T$$

DISCUSSION—Absorbance is a measure of the capacity of a substance to absorb light of a specific wavelength. **[D02.25] D8470**

**absorptivity,** *a*, *n*—the specific property of a substance to absorb radiant power per unit sample concentration and path length, expressed by:

$$a = Af/bc$$

where:

$A$ = the absorbance,
$f$ = the dilution factor,
$b$ = sample cell path length, and
$c$ = the quantity of absorbing substance contained in a volume of solvent.

**[D02.04] D2008**

[1] This terminology is under the jurisdiction of ASTM Committee D02 on Petroleum Products, Liquid Fuels, and Lubricants and is the direct responsibility of Subcommittee D02.95 on Terminology.

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

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