



SURFACE VEHICLE INFORMATION REPORT

J1498™

SEP2017

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Revised 2011-12
Stabilized 2017-09

Superseding J1498 DEC2011

Heating Value of Fuels

RATIONALE

The standard was last revised in 2011. No member of the current TC-7 Committee has expressed interest in sponsoring a review and/or revision to the standard.

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1. SCOPE

The heating value or heat of combustion is a measure of the energy available from the fuel. The fraction or percentage of the heat of combustion that is converted to useful work is a measure of the thermal efficiency of an engine. Thus, a knowledge of the heat of combustion of the fuel is basic to the engineering of automotive engines. This SAE Information Report provides information on the standardized procedures for determining the heat of combustion of fuels that may be used for automotive engines.

The changes to SAE J1498 include:

SAE Publications - Added SAE Paper 2010-01-1517

Other Publications and Sections 5, 9, and 10 - Updated ASTM alphanumeric designations and titles.

Section 10 - Added discussion of a method to calculate net heating value for gasoline-ethanol blends using ASTM D3338.

2. REFERENCES

2.1 Applicable Documents

The following publications form a part of this specification to the extent specified herein. Unless otherwise indicated, the latest issue of SAE publications shall apply.

2.1.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or 724-776-4970 (outside USA), www.sae.org.

1. Pat Geng, Robert L. Furey, and i.V. Anke Konzack, "Calculation of Heating Value for Gasoline Containing Ethanol." SAE Paper 2010-01-1517.

SAE J313 Diesel Fuels

SAE TSB 003 Rules for SAE Use of SI (Metric) Units

2.2 Other Publications

1. J. M. Sturtevant, "Calorimetry", Chapter VII, Vol. I, Part V of "Physical Methods of Chemistry", Edited by A. Weissberger and B. W. Rossiter, Wiley-Interscience, New York, NY, 1971.
2. ASTM Test Methods and Practices cited throughout the text are available in the latest volume of the Annual Book of ASTM Standards as shown as follows. These volumes are available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org

ASTM	Volume	Title
D86	05.01	Test Method for Distillation of Petroleum Products at Atmospheric Pressure
D240	05.01	Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter
D1018	05.01	Test Method for Hydrogen In Petroleum Fractions
D1405	05.01	Test Method for Estimation of Net Heat of Combustion of Aviation Fuels
D1826	05.06	Test Method for Calorific (Heating) Value of Gases in Natural Gas Range by Continuous Recording Calorimeter
D1945	05.06	Test Method for Analysis of Natural Gas by Gas Chromatography
D1946	05.06	Practice for Analysis of Reformed Gas by Gas Chromatography
D2421	05.01	Practice for Interconversion of Analysis of C5 and Lighter Hydrocarbons to Gas-Volume, Liquid-Volume, or Mass Basis
D2650	05.01	Method for Chemical Composition of Gases By Mass Spectrometry
D3338	05.01	Test Method for Estimation of Net Heat of Combustion of Aviation Fuels
D3588	05.01	Practice for Calculating Heat Value, Compressibility Factor, and Relative Density of Gaseous Fuels
D3701	05.01	Test Method for Hydrogen Content of Aviation Turbine Fuels by Low Resolution Nuclear Magnetic Resonance Spectrometry
D4529	05.02	Test Method for Estimation of Net Heat of Combustion of Aviation Fuels
D4809	05.02	Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter (Precision Method)
D4868	05.02	Test Method for Estimation of Net and Gross Heat of Combustion of Burner and Diesel Fuels
D5865	05.02	Test Method for Gross Calorific Value of Coal and Coke
SI 10	14.04	American National Standard for Metric Practice
E711	11.04	Test Method for Gross Calorific Value of Refuse-Derived Fuel by the Bomb Calorimeter