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# Fuel Specifications: What They Are, Why We Have Them, and How They Are Used

Co Editors:

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Salvatore J. Rand and Allen W. Verstuyft

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## Foreword

THIS PUBLICATION, *Fuels Specifications: What They Are, Why We Have Them, and How They Are Used*, was sponsored by ASTM Committee D02 on Petroleum Products, Liquid Fuels, and Lubricants. The co-editors are Salvatore J. Rand, consultant, North Fort Myers, Florida, and Allen W. Verstuyft, AI Verstuyft Consulting, LLC, Napa, California.

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To Agnes and Judy





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Dr. Salvatore J. Rand, an independent petroleum industry consultant, has been an ASTM International member for over thirty years. He was recently honored with ASTM's most prodigious award, the William T. Cavanaugh Memorial Award. He was recognized for his contributions to the promotion of, leadership in, and education about petroleum standards worldwide.

Rand serves on Committee D02 on Petroleum Products, Liquid Fuels, and Lubricants and several of its subcommittees. He is also a member at large of the executive subcommittee. During his tenure on D02 he has been vice chairman of the committee, the chair of Subcommittee D02.05 on Properties of Fuels, Petroleum Coke and Carbon Material, Secretary of Subcommittee D02.05.0C on Color and Reactivity, and has been particularly involved in developing standards in these areas. He has also been a member of ASTM's Committee on Technical Committee Operations (COTCO).

Rand has been recognized with the ASTM Award of Merit in 1999; a Service Award from the ASTM Committee on Technical Committee Operations in 2008; the Lowrie B. Sargent Jr Award in 2006; the George V. Dyroff Award of Honorary Committee D02 Membership in 2004; and the Committee D02 Sydney D. Andrews Scroll of Achievement in 2003. In 2010, Rand received the Charles B. Dudley Award for Manual 1, *Significance of Tests for Petroleum Products: 8th Edition*, which has become ASTM's best selling Manual.

For many years, Rand has been teaching two ASTM training courses that he developed: Gasoline: Specifications, Testing and Technology, and Fuels Technology. He has presented these courses in many cities throughout the world, and he has also made many varied presentations globally on ASTM fuels specifications and standardization procedures.

Professionally, prior to his retirement from industry and forming his consultancy, Rand directed the Fuels Test Laboratory which analyzed both liquid and gaseous fuels, at the Texaco Research and Development Center in Beacon, New York. He provided technical information and services to Texaco installations worldwide on fuel distribution, marketing and operations; as well as laboratory inspection, auditing, and personnel training both within Texaco and external to the company. He also served as an adjunct professor in the graduate school of chemistry at the University of St. Joseph.

Rand, who is the author of a number of research technical publications, is a 65-year member of the American Chemical Society, where he is a past chairman of its Mid-Hudson Section. He holds a PhD in Physical Chemistry and Physics from Rensselaer Polytechnic Institute, and a BS in Chemistry and Philosophy from Fordham University.



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Professionally, prior to his retirement from industry and forming his consultancy, Al was the Global Laboratory Coordinator at the Chevron Energy Technology Company in Richmond, CA. He provided petroleum and environmental analysis and was a chemistry consultant with expertise in turning complex chemical analysis data into information for decisions. He is experienced in solving complex sampling, analysis and quality problems for petroleum and environmental laboratories and operations. He is recognized in petroleum and environmental laboratory business for improving technical soundness and defensibility of data and operations; as well as laboratory inspection, auditing, and personnel training both within Chevron and external to the company. He also was a Visiting Research Scientist at Burner Engineering Laboratory of Sandia-Livermore National Laboratory.

Al, who is the author of a number of research technical publications, is a 46-year member of the American Chemical Society, where he is a past chairman of its California Section. He holds a Ph.D. in Inorganic/Organometallic Chemistry from the University of Nevada at Reno, and a B.S. in Chemistry in Santa Clara University, and was Postdoctoral Associate in Physical Organic Chemistry at the University of Utah.

