Recommended Practice for Chemical Analysis of Barite

API RECOMMENDED PRACTICE 13K
THIRD EDITION, MAY 2011

REAFFIRMED, MAY 2016

AMERICAN PETROLEUM INSTITUTE

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Upstream Segment

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Consult the most recent edition of the Occupational Safety and Health Administration (OSHA), U.S. Department of Labor, Occupational Safety and Health Standards for Asbestos, Tremolite, Anthophyllite, and Actinolite, 29 *Code of Federal Regulations* Section 1910.1001; the U.S. Environmental Protection Agency, National Emission Standard for Asbestos, 40 *Code of Federal Regulations* Section 61.140 through 61.156; and the U.S. Environmental Protection Agency (EPA) rule on labelling requirements and phased banning of asbestos products (Sections 763.160-170).

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1 Scope

1.1 Barite is used to increase the density of oil well drilling fluids. It is a mined product that can contain significant quantities of minerals other than barium sulfate, which is its main component.

1.2 A list of some minerals commonly associated with barite ores is given in Table 1 with the chemical formulas, mineralogical names, and the densities of the mineral grains.

1.3 The performance of barite in a drilling fluid is related in part to the percentage and type of non-barite minerals distributed in the barite ore. Some of these minerals have little or no effect on drilling fluid properties, but others can degrade these properties and even be harmful to rig personnel.

1.4 It is the objective of this publication to provide a comprehensive, detailed description of the chemical analytical procedures for quantitatively determining the mineral and chemical constituents of barite. These procedures are quite elaborate and will normally be carried out in a well-equipped laboratory.

2 Normative References

The following referenced documents are indispensable for the application of this document. For dated references, on the edition cited applies. For undated references, the latest edition of the reference document (including any amendments) applies.

API Recommended Practice 13B-1, *Recommended Practice for Field Testing Water-based Drilling Fluids*

API Recommended Practice 13I-2009, *Recommended Practice for Laboratory Testing of Drilling Fluids*

API *Manual of Petroleum Measurement Standards* (*MPMS*), Chapter 15, *Guidelines for Use of the International System of Units (SI) in the Petroleum and Allied Industries*

ISO 10416:2008 [1], *Petroleum and natural gas industries—Drilling fluids—Laboratory testing*

U.S. *29 Code of Federal Regulations* (*CFR*) [2], Section 1910.1001

U.S. *40 Code of Federal Regulations* (*CFR*), Section 61.140 through Section 61.156

U.S. *51 Federal Register* (*FR*), 3738-3759 (January 29, 1986)

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[1] International Organization for Standardization, 1, ch. de la Voie-Creuse, Case postale 56, CH-1211, Geneva 20, Switzerland, www.iso.org.

[2] The *Code of Federal Regulations* and *Federal Register* are available from the U.S. Government Printing Office, Washington, DC 20402.