

**Data documentation for size and shape characteristics of  
mountain-leather actinolite**

**Title**

Size and shape characteristics of mountain-leather actinolite

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**Data Files**

The csv version contains the same data as the corresponding xlsx file, but its structure has been modified to make a well-formed csv. The csv file is provided as a software-independent alternative to the xlsx format.

1. wylie\_actinolite\_mountain\_leather.xlsx
2. wylie\_actinolite\_mountain\_leather.csv

#### **Temporal Extent**

Sample obtained and measured ca. 1980.

#### **Spatial Extent**

Actinolite sample was obtained from Africa.

#### **Abstract**

This material was characterized by the University of Maryland in collaboration with the US Bureau of Mines as part of studies on the nature of asbestos.

The source of the asbestos is Africa. Mountain leather is described by Dana (1949)<sup>1</sup> as thin flexible sheets made of interlaced fibers. The composition of the sample is approximately 70% ferro-actinolite and 30% tremolite components. Mountain Leather is the name given to asbestos that has been transformed through long periods of weathering on Earth's surface into a matted mass of fibers that can have the look of leather.

Sample preparation included dispersal in water and deposition on 0.1µm Nucleopore filters. A portion of the filters was copper coated and examined by SEM equipped with EDXA. Measurements of width were made at 20,000X and lengths at 10,000 to 15,000. 1.099 latex spheres co-mounted on the SEM stubs were used to calibrate measurements. Particles to be measured were chosen by moving the specimen tab in increments and recording the length and width of the particle whose center fell closest to the center of the field of view. Precision is estimated as  $\pm 0.06 \mu\text{m}$ .

<sup>1</sup> Dana, E.S. 1949. A textbook of mineralogy 4<sup>th</sup> edition revised and enlarged by W.E. Ford. John Wiley and sons: New York.

#### **Instruments**

Scanning Electron Microscopy (SEM) with Energy-Dispersive X-Ray Analysis (EDXA) capability.

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<b>Variables/Parameters</b>	
length	particle length in micrometers - $\mu\text{m}$
width	particle width in micrometers - $\mu\text{m}$

<b>Keywords/Topics</b>
Amphibole group Actinolite Ferro-actinolite Mountain leather Granulometry

<b>Associated Publications</b>
Analyses of these data can be found in the following publications:  Wylie, A.G., 1988, Relationship between the growth habit of asbestos and the dimensions of asbestos fibers: <i>Mining Engineering</i> , Nov., p. 1036-1040.  Wylie, A.G., 1988, Discriminating amphibole cleavage fragments from asbestos: Rationale and methodology, <i>in</i> Proceedings of the VIIth: International Pneumoconioses Conference Part II: Pittsburg, PA., US Department of Health and Human Services (NIOSH) Publication no. 90108, p. 1065-1069. <a href="http://www.cdc.gov/niosh/docs/90-108/">http://www.cdc.gov/niosh/docs/90-108/</a>  Wylie, A.G., 1993, Modeling asbestos populations: A fractal approach: <i>Canadian Mineralogist</i> , v. 30, p. 437-446, <a href="http://www.canmin.org/content/31/2/437.full.pdf+html">http://www.canmin.org/content/31/2/437.full.pdf+html</a>  Wylie, A.G., and Schweitzer, P. 1982. The effects of sample preparation and measuring techniques on the shape and shape characterization of mineral particles: The case of wollastonite: <i>Environmental Research</i> , v. 27, p. 52-73, <a href="http://dx.doi.org/10.1016/0013-9351(82)90057-3">http://dx.doi.org/10.1016/0013-9351(82)90057-3</a>  Verkouteren, J.R., and Wylie, A.G., 2000, The tremolite-actinolite-ferro-actinolite series: Systematic relationships among cell parameters, composition, optical properties, and habit, and evidence of discontinuities: <i>American Mineralogist</i> , v. 85, p. 1239-1254, <a href="http://dx.doi.org/10.2138/am-2000-8-917">http://dx.doi.org/10.2138/am-2000-8-917</a>  Verkouteren, J.R., and Wylie, A.G., 2002, Anomalous optical properties of fibrous tremolite, actinolite and ferro-actinolite: <i>American Mineralogist</i> , v. 87, p. 1090-1095, <a href="http://dx.doi.org/10.2138/am-2002-8-905">http://dx.doi.org/10.2138/am-2002-8-905</a>

**Data Citation**

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**Data Repository**

Digital Repository at the University of Maryland (DRUM)

<http://drum.lib.umd.edu>  
drum-help@umd.edu

**Date Released**

2016

**Availability**

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