

PERSPECTIVE:

Elongate Mineral Particles (EMP)

Accuracy in Definitions and Regulations is Essential

NSSGA[®]
NATIONAL STONE, SAND
& GRAVEL ASSOCIATION

EMPs encompass a large variety of tiny particles derived from rocks and soils in the natural environment and are classified by mineral type, particle dimensions, durability, and other characteristics. **NSSGA champions efforts to distinguish harmful EMPs (such as asbestos) from ordinary rock and soil dust that is common in most environments.**

Our Recommendations:

- EPA should precisely define asbestos based on its chemical makeup, physical and morphological properties, appropriate methods and criteria for identification, and other relevant factors.
 1. This definition should be consistent with Congress's long-standing definition of asbestos in Title II of TSCA.
 2. The definition should exclude common rock fragments, some of which can have identical chemical composition as asbestos – and thus may be mistakenly identified as asbestos when improper analytical methods are applied.
 3. These rock particles, sometimes called “cleavage fragments,” are not asbestos and have not been shown to present the health hazards associated with asbestos exposure. Therefore, they should be excluded from the asbestos risk evaluation.
- EPA should interpret the term “conditions of use,” or construe its obligation to review the conditions of use for selected substances, to exclude rocks, sand and gravel that may contain or come in contact with trace amounts of naturally occurring asbestos.

Our Commitment to Safety & Health

NSSGA strongly supports science-based workplace health and safety regulations. For example:

- NSSGA has long supported the regulation of *currently non-regulated* asbestiform richterite, asbestiform winchite, erionite (an asbestiform zeolite), and other potentially harmful EMPs.

IN BRIEF:

Misclassification of elongate mineral particles (EMPs) is common and often leads to ineffective regulatory efforts. It is critical to the industry and users of aggregates that accurate and clear definitions differentiate asbestiform minerals from common rock, which may chemically identical but have a vastly different crystal structure.

Non-asbestos EMPs are common rock forming minerals and have not been shown to cause asbestos-like health effects.



- NSSGA developed and shared a *Minerals Identification & Management Guide*, which offers a reference point to those mining or disturbing areas where incidental amounts of natural occurrences of asbestos (NOA) may be present.
- NSSGA sponsored the 2017 Monticello Conference, an international gathering of scientists who study the geology, mineralogy, and health effects of various EMPs.

ABOUT NSSGA: *Aggregates are the second most utilized product in the world and are the foundation to create buildings, roads, airports and bridges. They are indispensable in developing the infrastructure needed to access clean water; deliver reliable energy; and advance environmental stewardship. The National Stone, Sand & Gravel Association (NSSGA) represents more than 90 percent of the crushed stone and 70 percent of the sand and gravel produced annually in the United States.*

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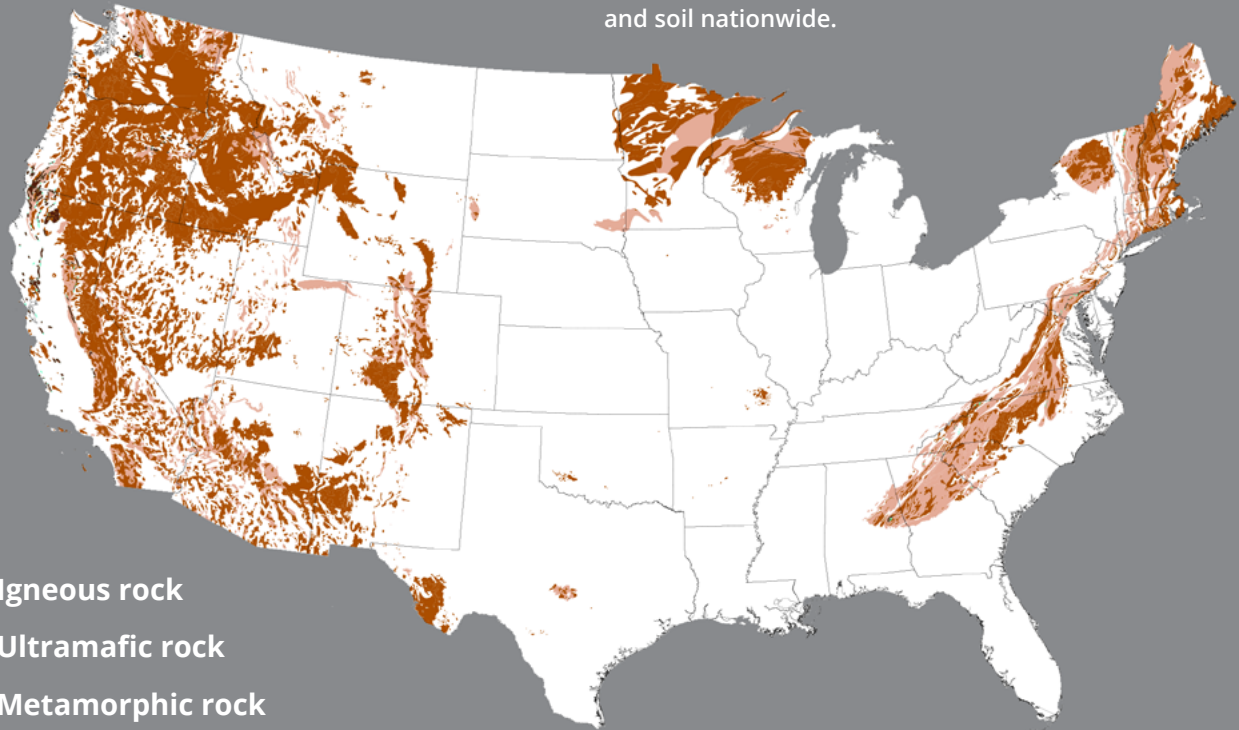
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Where EMPs Occur

SOURCE: U.S. Geological Survey

EMPs, including naturally occurring asbestos (NOA) can be found in most states but are more common in surface deposits of igneous, metamorphic and ultramafic rock. Vastly more common are the non-asbestos EMPs found in rocks and soil nationwide.



- Igneous rock
- Ultramafic rock
- Metamorphic rock

ASBESTOS vs. NON-ASBESTOS Chemically Identical, Structurally Distinct

The six commercial varieties of asbestos are shown paired with their nonasbestiform mineral analogs. Within each pair, the minerals are chemically identical but have vastly different crystal structures. The non-asbestos EMPs are common rock forming minerals and have not been shown to cause asbestos-like health effects.

ASBESTIFORM	ROCK	ASBESTIFORM	ROCK	ASBESTIFORM	ROCK
 chrysotile	 antigorite	 amosite	 cummingtonite-grunerite	 tremolite asbestos	 tremolite
 crocidolite	 riebeckite	 anthophyllite asbestos	 anthophyllite	 actinolite asbestos	 actinolite