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Information about Synthetic Gypsum in Wallboard

Synthetic gypsum has been used to make wallboard in the United States for more than 20 years:

Since 2000 alone, the U.S. gypsum wallboard manufacturing industry has produced the equivalent of 72,000,000,000 square feet of wallboard made with synthetic gypsum – enough to finish the interior of more than 7,000,000 American homes. Both synthetic gypsum and mined gypsum have the chemical composition of calcium sulfate dihydrate, $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$. Synthetic gypsum (also called “FGD gypsum”) is an environmentally-friendly product made to our specifications through a controlled process in which the emissions from coal-fired power plants are “scrubbed” to remove the sulfur dioxide by use of wet or dry scrubbers also called “flue gas desulfurization” (FGD). Today, all USG SHEETROCK® brand gypsum wallboard is manufactured using synthetic gypsum, gypsum mined in North America, or a combination of both.

The EPA’s proposed new rules on the disposal of synthetic gypsum do not apply to synthetic gypsum used for making wallboard or other beneficial uses:

On June 21, 2010, the EPA proposed national rules to ensure the safe disposal and management of coal combustion residuals from coal-fired power plants. These proposed rules would not apply to synthetic gypsum that is beneficially used. In its proposal, the EPA repeated its view that the use of FGD gypsum in making wallboard is safe and environmentally beneficial. The EPA stated that “the use of FGD gypsum in the manufacture of wallboard (drywall) decreases the need to mine natural gypsum, thereby conserving the natural resource and conserving energy that otherwise would be needed to mine natural gypsum”¹ Notably, the EPA’s own award-winning building in Arlington, Virginia is made using wallboard containing synthetic gypsum.² At present, it is unclear to what extent the proposed EPA rules, if adopted, might impact the production of synthetic gypsum or its use in making wallboard. A timetable has not been established for the adoption or rejection of the EPA’s proposed national rules.

USG ensures the safety and purity of the gypsum it uses to make its wallboard:

USG conducts acceptance testing on both the synthetic gypsum and mined gypsum it uses to ensure that the gypsum meets our established quality, purity, and production standards. USG also requires the synthetic gypsum supplier (the power plant) to conduct quality control testing of the shipments of synthetic gypsum to our plants. In addition, USG’s conducts quality control and assurance testing at our manufacturing facilities and tests both the synthetic gypsum and the mined gypsum we use for purity and the presence of contaminants. These tests are conducted both by our own research scientists as well as certified third party laboratories.

¹See <http://www.regulations.gov/search/Regs/home.html#documentDetail?R=0900006480b06eac>, at p. 35162.

²<http://www.epa.gov/epawaste/conservation/rrr/imr/pdfs/recy-bldg.pdf>.

Fly ash is not used as a substitute for synthetic gypsum: Fly ash, a residue created by the burning of coal, cannot be used as a substitute for gypsum because fly ash has a different chemical composition than gypsum. However, fly ash is used in the production of cement and has proven to increase its performance and longevity.
