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"Let's Talc!"

I. THE SCIENCE BEHIND TALC

Geology & Asbestos Contamination

Talc is derived from the Greek word meaning pure. It is a mineral composed of hydrated magnesium silicate with the chemical formulation $H_2Mg_3 (SiO_3)_4$ or $Mg_3Si_4O_{10} (OH)_2$. Talc is the softest rock on earth. It is non-porous, weighs around 9 kilograms per cubic foot, does not stain or burn, and it is not attacked by acids. Major talc deposits in the U.S. are in California, Montana, Texas, Nevada, Oregon, New York and Vermont.

As a result of the manner in which talc is mined, it may be contaminated with asbestos. In the U.S., asbestos is most commonly defined as the asbestiform variety of six naturally occurring hydrated silicate minerals, including chrysotile, crocidolite, amosite, anthophyllite, actinolite and tremolite. In the case of tremolite, actinolite, and anthophyllite, there is no separate name given, so the asbestiform varieties must be identified by using the adjective asbestiform or asbestos.

When OSHA promulgated its standard in 1972, the commercial definition of asbestos was limited to chrysotile, amosite, crocidolite, anthophyllite asbestos, tremolite asbestos and actinolite asbestos. In addition to these six minerals, there are over one hundred other minerals, not properly known as "asbestos," the fibers of which have the same general growth habit and shapes as the fibers of the six asbestos minerals. Without careful mineralogical identification, some of these minerals can easily be misidentified as one of the six asbestos minerals.

Determining whether particles in a talc deposit are asbestiform or non-asbestiform is complicated by the fact that, when crushed, amphiboles readily fracture along cleavage planes and often form acicular particles referred to as cleavage fragments. Differing interpretation of these particles has caused considerable disagreement of the asbestos content of talc deposits.

Analysts have multiple means of examining minerals, including x-ray diffraction, transmission electron microscopy, microprobe analysis, and scanning electron microscopy. These tools allow the analyst to investigate the crystal structure and the chemical content of the minerals. They also introduce a new set of confounding information which can confuse and mislead an analyst trained mainly to look for commercial asbestos minerals. According to OSHA, some tremolitic industrial talcs, such as those found in New York, present a difficult analytical problem. This group of products has cleavage fragments of non-asbestiform tremolite and anthophyllite which, while

meeting the definition used for phase contrast counting (aspect ratio longer than or equal to 3 to 1 and longer than or equal to 5 micrometers), are not covered by the OSHA definition of asbestos. Furthermore, there are fibers in the products which range in composition from nearly that of anthophyllite to talc. Except for a very few fibers occasionally found to be anthophyllite asbestos, these fibers are generally not covered by the OSHA asbestos standard.

Talc is formed by two processes: (1) hydrothermal process in which heated waters carrying magnesium and silica in solution react with and replace beds of Dolostone (dolomite or dolomitic marble) and (2) metamorphic process in which a sequence of fluids reacts with the magnesium-rich mafic minerals (igneous rocks, such as dunites and peridotites, contain abundant, heavy minerals called "mafic" which are enriched in magnesium and iron) in the host rocks, ultimately replacing the mafic minerals with talc.

The host rock composition and process of formation determines the qualities of talc, which in turn affects the industrial applications of a particular deposit. The grain size and shape, color, and purity of talc influence its uses. In addition, the talc-forming mechanisms – hydrothermal processes, contact metamorphism, or regional metamorphism – directly influence the ultimate amphibole content of the talc ore body. Within a single mineral deposit, amphibole crystals may range in habit from blocky to prismatic to acicular to asbestiform.

Talc deposits formed by hydrothermal processes – meteoric or basin brine fluids heated by buried magma bodies – consistently lack amphiboles as accessory minerals. Examples of talc-producing districts formed by hydrothermal processes include those in southwestern Montana, the Allamore district of west Texas, and the Talc City district of California. In contrast, talc ores that formed by contact or regional metamorphism are consistently intermixed with amphiboles, sometimes of the asbestiform variety. Examples of contact metamorphic deposits occur in Death Valley, California; these talc-tremolite deposits contain accessory amphibole-asbestos. Thus, talc deposits formed by contact metamorphism must be regarded as potential sites for amphibole asbestos.

The elements present, the temperature, pressure, time, and exposure all contribute to the composition and structure of the talc. In fact, it may even be possible, with adequate representative samples, to identify a particular mine from which a mineral was removed. Differences in texture, mineralogy and chemical composition influence suitability of the talcs for specific markets.

Talc-Containing Products

More than 7 million tons of talc is mined annually worldwide. Talc is used in a variety of consumer and industrial products, from plastics and rubbers to cosmetics and children's crayons. Talc was introduced as baby powder in 1894. In the United States and Europe, makeup became fashionable during the early part of the twentieth century because of the influence of ballet, theatre and movie personalities. Nevertheless, today only 5% of talc is used for cosmetics. The largest consumer of talc is the paper industry, which mixes talc with pulp. The talc acts as a filler to add whiteness, smoothness and opacity to paper. Another large user of talc is the ceramic industry in which talc is used for glazing and to give ceramic its shape and shine. The construction industry uses talc as a component in asphalt roofing and paint. The pharmaceutical industry uses talc to coat pills. The plastics industry uses talc to improve hardness, tensile strength, stiffness, impact absorption, stability, electrical insulation, and the ability to resist chemicals and heat. The automobile industry uses talc to make rubber hoses less permeable and to give tires their bounce and prevent stickiness. The textile industry uses talc for loading and bleaching certain types of cotton goods. Talc acts as an insulator and reduces energy loss from electrical devices.

Disease Process

Talc not containing asbestiform fibers is not classifiable as to its carcinogenicity to humans. On the other hand, talc containing asbestiform fibers is carcinogenic to humans. The International Agency for Research on Cancer (IARC) reports that case studies suggest an association between mesothelioma and exposure to talc containing asbestiform fibers. Furthermore, mortality studies of miners and millers of talc containing asbestiform fibers show an excess of lung cancer and nonmalignant respiratory disease. Talc containing asbestiform fibers also has been linked to ovarian and testicular cancer.

II. GOVERNMENTAL REGULATION OF TALC

Occupational Safety & Health Administration (OSHA)

OSHA has removed non-asbestiform tremolite, anthophyllite and actinolite ("ATA") from the asbestos standards for general industry and construction. Due to the fact that non-asbestiform tremolite is occasionally found in combination with other minerals, employees exposed to non-asbestiform ATA will still be protected by the Air Contaminants Standard (29 CFR 1910.1001). In sum, OSHA has found that the available evidence is insufficient to conclude that exposure to non-asbestiform ATA is linked to the development of cancer.

Food & Drug Administration (FDA)

The FDA does not review or approve cosmetic products and their ingredients, with the exception of color additives, before they go on the market. Thus, while cosmetic companies are legally responsible for ensuring their products are safe for use and are labeled properly, they are not required to share their ingredients with the FDA. Instead, the FDA monitors for safety issues but will only take action if sound scientific data is produced to show it is harmful given its intended use. Safety questions regarding the possibility of talc being contaminated by asbestos, a known carcinogen, have come up, as they are both naturally occurring minerals in the earth, though they have different crystal structures. As a result of the safety questions, the FDA conducted an exploratory survey of cosmetic-grade raw material talc as well as some cosmetic products containing talc between 2009 and 2010. The end result of the survey found no asbestos fibers or structures in any of the samples of cosmetic-grade raw material talc or cosmetic products containing talc. However, the sample tested was very limited and, therefore, the FDA continues to monitor. Should new information surface, the FDA will take appropriate action.

National Institute for Occupational Safety and Health (NIOSH)

NIOSH studied the health effects of mining and milling talc in the 1990s to see if exposures were associated with lung disease, including cancer. Based on this study, NIOSH recommends generally that exposure to talc which contains asbestos be controlled to the lowest possible concentration and should be no higher than 0.1 fiber/cc in a 400 liter air sample. NIOSH further recommends that exposure to talc not containing asbestos be no higher than 2 mg/m^3 averaged over 10 hours.

III. LITIGATION

Between 2006 and 2015, there were nine talc verdicts (six of them in 2015). Six were plaintiff verdicts, ranging from $3 million to $13 million, while there were three defense verdicts. Four of the cases involved female plaintiffs, all alleging injury from cosmetic talc. The jurisdictions were New York (2), New Jersey (3), California (2), South Dakota (1), and Delaware (1). Both cosmetic and industrial talc cases have been tried. With the exception of one case, all trials involved plaintiffs alleging mesothelioma from asbestos-contaminated talc (ovarian cancer was the other). Notably, Levy Phillips was plaintiff counsel in four of the plaintiff verdicts.

Verdicts - Defense

Fishbain (New Jersey 2015). This case was tried under the New Jersey Product's Liability Act, which allowed the defendants to present evidence of their knowledge and the state-of-the-art at the time the products at issue were manufactured.

Linda Fishbain died at age 60 from mesothelioma, several days before closing arguments. By a 7-2 margin, the jury found that Mrs. Fishbain did not prove by a preponderance of the evidence that her use of or exposure to a talc product from any of the defendants was a substantial factor in causing her

mesothelioma. The defendants proved that at the time their talc product left their control, the danger that it could cause disease was not known or knowable.

At the time of verdict, the defendants were Whittaker Clark & Daniels, Inc. ("Whittaker") and Shulton Inc ("Shulton"). Whittaker was sued as a supplier of talc to Shulton, while Shulton was sued as the manufacturer of finished talcum powder products Desert Flower, Friendship Garden and Old Spice. Each of these products was alleged to have contained asbestos. Whittaker argued that plaintiffs failed to produce sufficient evidence to prove that the talcum powder Mrs. Fishbain used was sold or distributed by Whittaker. Whittaker argued that it had no knowledge, prior to August of 1971, that cosmetic talc could be contaminated with asbestos. Once it had this knowledge, Whittaker contended that it established a protocol whereby it tested its fiber to make sure it did not contain asbestos. Whittaker also argued that it was not a designer of talcum powder but rather a supplier to a finished product manufacturer.

Verdicts - Plaintiff

Traditional asbestos cases typically involve multiple sources of alleged asbestos exposure, thus allowing each defendant to point to other sources and minimize their own involvement. However, in a case in which the plaintiff has mesothelioma and the only asbestos exposure is from talc allegedly contaminated with asbestos, defense attorneys have their work cut out for them. Juries will hear that the sympathetic plaintiff has mesothelioma, that asbestos causes mesothelioma, that the plaintiff had one or limited sources of asbestos exposure (to asbestos-contaminated talc), and that the only logical conclusion is that the talc caused the plaintiff's mesothelioma. This argument is particularly persuasive when the plaintiff is a female and the only identifiable source of potential asbestos exposure is talc powder utilized in cosmetics.

Further making it difficult for defendants is that they must contend with the allegation that the asbestos-contaminated talc at issue contains various types of asbestos, not just chrysotile, thus weakening the defense argument frequently employed in traditional asbestos cases that the exposure was to chrysotile only and that chrysotile does not cause mesothelioma. Some recent plaintiff verdicts:

Chisholm (Schenectady County, New York 2015). $10.55 million verdict. The only defendant at trial was R.T. Vanderbilt. Mr. Chisholm alleged exposure to asbestos-containing talc during a high school summer job working for an Ohio ceramics factory in the 1970s which used Vanderbilt talc from the Gouverneur mine as one of the raw materials to make ceramic products. Mr. Chisholm died at the age of 52 from mesothelioma. At trial, the plaintiffs presented evidence that Vanderbilt received information that its talc had asbestos in it before Mr. Chisholm even came into contact with it. The company owner testified that if there was a warning on the bags, he would never have used the product.

Winkel (Los Angeles, California 2015). Plaintiff counsel was Simon Greenstone Panatier Bartlett. The jury awarded Mr. and Mrs. Winkel $13 million in damages, finding for plaintiffs on design defect, manufacturing defect, failure to warn, and negligence liability theories. The parties reached a settlement following the verdict before the trial's punitive damages phase began. It was alleged that Colgate-Palmolive's Cashmere Bouquet talcum powder caused Mrs. Winkel to contract

mesothelioma and that the company knew or should have known about the dangers of asbestos since the 1930s.

Colgate-Palmolive argued that plaintiffs did not prove Mrs. Winkel personally used asbestos-contaminated Cashmere Bouquet, and that even if she did, the jury would have to speculate as to whether it was contaminated with asbestos. In fact, plaintiffs' own expert testified that some tests performed on samples of talc from the North Carolina mine used by Colgate-Palmolive revealed asbestos, but some did not. However, this theory did not persuade the judge to grant a motion for nonsuit for lack of causation, and ultimately the jury found against Colgate-Palmolive after two hours of deliberation. Notably, there were no real other sources of identified asbestos exposure.

Kaenzig (Middlesex County, New Jersey 2013, upheld 2015) – New Jersey. In March of 2015, a three-judge panel affirmed a 2013 $1.6 million award against talc supplier Whittaker Clark & Daniels ("Whittaker"), which supplied raw talc to various producers of cosmetic talcum powder products. The New Jersey court held that these products were contaminated with asbestos, and awarded damages to the son of a worker in the Shulton talc plant based on the theory that the son was exposed to the asbestos-contaminated talc his father carried home on his clothes after working at the plant. The jury awarded Mr. Kaenzig, age 47 and married with four children, $1.4 million in pain and suffering damages and $200,000 for his wife's loss of consortium claim. Notably, in 1975 the New Jersey plant at issue moved its entire talc operation to another plant in Memphis due to problems keeping the talc dust in control.

Plaintiffs were able to convince the jury that Mr. Kaenzig's take-home exposure to talc through his father was his only asbestos exposure. The jury accepted the plaintiffs' claim, that the talc supplied to the Shulton plant by Whittaker was contaminated with asbestos, and that Whittaker's own testing in the early 1970s of the talc sold to Shulton confirmed asbestos contamination. Further, tests conducted by NYU for the FDA, also in the early 1970s, found asbestos contamination in Old Spice and Desert Flower talcum powders manufactured with Whittaker's talc. Plaintiffs also argued that Whittaker failed to notify its customers of asbestos in its talc and similarly did not warn industry or consumers of the hazards of the asbestos-contaminated talc.

Whittaker argued that its talc was reasonably safe for its intended and foreseeable uses and did not contain asbestos, and, even if it did, Mr. Kaenzig's exposure to same was not sufficient to have caused his mesothelioma.

Of note is that Whittaker's expert was not allowed to testify regarding testing he had performed on purported samples of Whittaker talc from the 1970s due to chain of custody issues and lack of reliable evidence supporting the proposition that the samples were the same as the talc Whittaker sold to Shulton. Also, plaintiffs were able to preclude Whittaker from using its corporate representative to offer testimony as he had no personal knowledge of the time period in question.

Robusto (New York 2015). $7 million verdict. Mrs. Robusto alleged she suffered from mesothelioma caused by her use of cosmetic talc powder contaminated with asbestos. Defendant Whittaker Clark and Daniels allegedly supplied the talcum powder from Italy, North Carolina, and Alabama for incorporation into various consumer products (the relevant product here was Desert Flower) It was alleged that the talc from these mines was contaminated with

asbestos and it was then incorporated into finished cosmetic talcum powder by Shulton and used by Mrs. Robusto. The jury accepted the argument that the talc from Whittaker, and the subsequent finished cosmetic products, was contaminated with asbestos. Defendant argued the cause of the mesothelioma was other sources.

Note that in the Fishbain matter, the plaintiff's expert had to provide a level of exposure whereas at the Robusto trial the expert never testified as to a level, instead using words like "significant", which the court allowed. Further, in Fishbain, plaintiff was precluded from testifying about testing he had done on a vintage Shulton product, and, as a result, plaintiff did not have evidence of specific end-product contamination. Plaintiff was left with arguing that it was "likely" that the end product was contaminated.

Lessons/Strategy

Defense counsel must understand the science in order to effectively undercut the plaintiffs' experts. You have to know what studies have been performed, if any, concerning the product you are defending, as well as any studies concerning the mine(s) from which the talc was sourced. The way to undermine the plaintiff's experts is to establish that they have no basis for concluding that your product contained asbestos-contaminated talc because they are unable to ascertain precisely where the talc was mined. Another theme pushed by plaintiffs is the reptile theory, a strategy also used in asbestos cases. Defense counsel must be prepared to combat these types of arguments.

Assume opposing counsel, particularly those from the prominent national plaintiff firms, has the knowledge and expertise to pursue a talc case. Do you? Do you fully understand the underlying geology, industrial hygiene, and causation arguments? Have you retained the experts you need, and are they fully versed with respect to your product?

It is essential to develop alternate exposures, particularly with respect to female plaintiffs who have been diagnosed with mesothelioma. Juries want to compensate sympathetic plaintiffs and want to punish the party they perceive to be at fault. Strategic discovery is therefore essential to develop alternate exposures. If there is only one known source of exposure, and that source is your insured/client, you have an uphill battle. It is easy to be complacent and conduct only perfunctory depositions of the plaintiff and family members and serve only standard discovery requests you use in every asbestos case. Devote the time and effort to work up these cases in order to increase your chances of a defense verdict or reasonable settlement.