

The McKenna toxic tort practice group is pleased to provide this newsletter on recent developments in the toxic tort arena. This issue contains a feature article on nanotechnology as an alternative cause of mesothelioma, a disease which has long been blamed almost completely on asbestos exposure. Another feature article discusses developing litigation arising out of Chinese drywall imported into the U.S. You will also find an article on a favorable decision issued by the Illinois Appellate Court regarding take-home exposure to asbestos. This issue concludes with some Toxic Tidbits you may find interesting, including an update on the continuing surge in Madison County, Illinois asbestos filings. For further information, please feel free to contact the author listed for each article.

If you prefer to receive our newsletter electronically, please e-mail your request to Tom Hayes at thayes@mckenna-law.com. If there are individuals you would like us to add to our circulation list, please e-mail their mailing addresses or e-mail addresses to Tom Hayes. We would also welcome your comments on topics you would like to see addressed in our future newsletters.

Greg Cochran, 312-558-3935 or at gcochran@mckenna-law.com.

NANOTECHNOLOGY AND MESOTHELIOMA

Mesothelioma is a cancer generally linked to exposure to carcinogenic mineral fibers. Based on information available from the Surveillance, Epidemiology and End Results (SEER) Program, the incidence of mesothelioma in the United States today is 2500-3000 cases per year. Exposure to asbestos is still considered the main cause of mesothelioma in the U.S. and the Western world. Some investigators proposed that as a consequence of the regulations to prevent exposure and to forbid and/or limit the use of asbestos, the incidence of mesothelioma in the U.S. (and in some European countries) should have started to decline before or around the year 2000, and sharply decline thereafter. The steady incidence of mesothelioma, and the increasingly high percentage of occurrences with no known asbestos exposure, has led to the investigation of other possible causes of the disease.

Previous editions of this Newsletter have discussed both erionite and therapeutic radiation as alternative causes of mesothelioma in humans. Two recent studies published in the Journal of Toxicological Sciences (February 2008) and Nature Nanotechnology (May 2008) have now demonstrated that some multi-walled carbon

nanotubes (MWCNT or MWNT) can induce in mice a response similar to that induced by certain asbestos fibers in humans.

Nanotechnology is the emerging scientific field which includes the study of small, thin, carbon-based materials rolled into cylinders known as nanotubes. Discovered nearly 20 years ago, carbon nanotubes have been described as the wonder material of the 21st Century. MWCNT are cylindrical concentric tubes of carbon that have many applications, including as electrically conducting additives to plastics, where they impart mechanical strength and reduce static charge build-up, and as components of flat-panel displays. Light as plastic and stronger than steel, nanotubes are currently being used in a variety of sports equipment including baseball bats and golf clubs, bicycle frames, energy-efficient batteries, and futuristic electronics. Nanotubes are also being considered for use in the aerospace, automobile, airplane, medical, and environmental industries. Leading forecasting firms say sales of all nanotubes could reach \$2 billion annually within the next four to seven years, according to an article in the U.S. publication Chemical & Engineering News. Some predictions are that worldwide sales of goods incorporating nanotechnology may total something like \$2.6 trillion by the year 2014.

At a first glance, MWCNT and asbestos fibers have one major thing in common, their needle-like shape. Mesothelioma is believed to be caused by exposure to certain forms of asbestos and is a response to particles with a high length-to-width (aspect) ratio, that is, particles that are long and thin. Biopersistence, or the length of time the fibers remain intact in the body, is also a factor in their toxicity. Other factors such as the presence of embedded metals and the fibers' ability to splinter into many smaller fibers may be important as well. The toxic response to asbestos seems to result partly from the inability of macrophages to surround and isolate the long fibers. Macrophages are special cells that clear foreign material from the body through a process known as phagocytosis. When a macrophage is frustrated in its attempts to surround a particle, it initiates a sequence of events that results in injury to the body.

In both nanotube studies, suspensions of MWCNT were injected into the abdominal cavities of mice to directly expose the mesothelium and compared against asbestos as a positive control for mesothelioma. A positive control is a substance known to cause the effect under investigation. One group used a panel of four samples of MWCNT: two samples that contain long needle-like nanotubes and two that contain short, tangled nanotubes. Different types of asbestos were used as positive controls in each study (crocidolite or amosite) but both types are known to pose a hazard to human health. As negative controls (substances known or hypothesized not to cause the effect) one group of researchers used a commercial pigment known as Printex 90, which is a carbon-containing material that is nanostructured but not fiber-shaped. The other group used solution that did not have nanoparticles in it. Because the route of exposure was injection and not inhalation, neither study addresses the question of whether inhalation of MWCNT leads to asbestos-like health effects.

In the *Journal of Toxicological Sciences* Study, the authors tested the hypothesis that due to their fibrous shape and embedded iron content MWCNT would have carcinogenic potential similar to asbestos. A concentrated suspension of stiff fibrous MWCNT was injected into the abdominal (peritoneal) cavity of mice that have been specially bred to be susceptible to cancer. Blue asbestos (crocidolite), which is known to cause

mesothelioma, and fullerene aggregates, which were hypothesized not to cause mesothelioma, were also studied so the results could be compared. An examination of the animals between 10 days and 25 weeks after exposure revealed that the MWCNT and asbestos both resulted in the formation of cancerous lesions that are consistent with the disease mesothelioma. The mice exposed to the fullerene aggregates did not develop these lesions. The authors suggest that the aspect ratio and biopersistence of MWCNT may be important factors in understanding their effect on the body but caution that the presence of iron cannot be ruled out as a causative agent.

In the *About the Nature Nanotechnology* Study, the authors tested the hypothesis that long straight nanotubes act like long straight asbestos fibers and cause mesothelial injury. Samples consisting of suspensions of long, straight MWCNT, short tangled MWCNT, long-fiber amosite (asbestos), short-fiber amosite (asbestos) and a nonfibrous nanoparticulate carbon black material were each injected into the abdominal (peritoneal) cavity of normal mice. Twenty-four hours later, the cavity was washed out with a salt solution which was analyzed for the presence of proteins and cells consistent with inflammation. Tissue samples measured at 7 days were examined for the formation of scar-like lesions called granulomas that typify the body's response to long fibers. Only the mice exposed to the long straight fiber asbestos and the long straight MWCNT showed the presence of inflammatory proteins, cells and granulomas, leading the authors to conclude that frustrated phagocytosis was an important mechanism of injury. One mouse exposed to short tangled MWCNT had a small but non-significant granuloma. This seven-day study did not last long enough to demonstrate that mice exposed to MWCNT develop the disease mesothelioma, though the symptoms observed look very similar to those induced by the harmful versions of asbestos.

The studies do not address whether humans may be exposed to MWCNT in a way that causes disease. While more research is needed to understand the potential implications of this work for human health, the two studies taken together point to the need for a careful assessment of the potential for MWCNT to

cause injury to humans. The many outstanding questions that these papers raise include:

- How dose is measured for MWCNT and what constitutes an appropriate dose in mice to correlate with human risk;
- The role of metals within the nanotube samples. (The Nature Nanotechnology study found that metals derived from the MWCNT could not explain the different effects of exposure to long straight vs. short tangled MWCNT. The Journal of Toxicological Sciences Study did not rule out the iron contaminant within the MWCNT samples as the agent responsible for promoting the formation of the cancerous lesions.)
- Whether short, tangled MWCNT, which are non-fibrous, have a toxic effect unrelated to effects associated with exposure to fiber-like particles;
- Whether MWCNT can persist long enough in the body and migrate to the mesothelium to induce the effects seen here in mice;
- Whether humans can be exposed to MWCNT in quantities sufficient to induce the effect seen here in mice.

Despite these caveats both groups of authors believe that their findings are important for understanding the potential hazards of MWCNT and should inform industrial risk management practices so that exposure to humans is limited. As they note, without exposure there is no risk, even if the substance is very hazardous.

Dr. Andrew Maynard from the Woodrow Wilson International Centre for Scholars notes that there is no current requirement to disclose the use of nanotubes in any application. "In fact if you look at the safety guidelines for the material, most people are treating it just as graphite, the sort of stuff that you find in your pencil," he said. The remaining issue is "Whether people can breathe it in and if they do, whether these fibers can work their way to the outer edge of the lung and then cause an effect." Nanotubes used in sporting equipment, for example, are safely encapsulated. Dr Maynard says the greater risk is to people involved in manufacturing and disposing of such products.

In fact, nanoparticles have already been blamed for two deaths at a Chinese factory, in a report that claims to be the first to document human disease caused by the particles. The Song Study, published in the European Respiratory Journal in August 2009, describes seven women who fell ill after working in a printing factory in China, two of whom later died. All had symptoms indicating that their immune systems could not remove foreign objects from their lungs and had large amounts of fluid in the lung linings. The study says the women inhaled fumes generated by heating polystyrene boards covered with a plastic paste to high temperatures. Their workroom had no functioning ventilation system and they wore face masks only occasionally. Particles of around 30 nanometres in size were found in the women's lungs and also in the plastic paste and a broken ventilation shaft in the workroom. Polyacrylate, consisting of nano-particles, was confirmed in the workplace.

Ironically, nanotechnology may also be used to treat mesothelioma in the near future. As one of the most promising technologies of scientific research, nanotechnology has been shown to have huge implications on the future of medicine. In particular, nanotechnology can be used to create units of the size of ten to the power minus nine or one billionth of a meter and is comparable to the size of individual molecules. As a result, the process of medical treatment using this technology is expected to be ultra refined and delivered to the targeted site much quicker. To illustrate what this means for mesothelioma and other cancer patients, researchers from Stanford University recently developed carbon nanotubes that bypassed normal tissues and delivered chemotherapy through a nano-tech based delivery system directly into malignant cells.

As a result of these emerging concerns, the U.S. Department of Health and Human Services, through the National Institute for Occupational Safety and Health (NIOSH), published a document entitled Approaches to Safe Nanotechnology (March 2009) in order to raise awareness and make initial recommendations as to safe occupational work practices. Given the rise of mesotheliomas in individuals with no known exposure to asbestos, the emergence of alternative causes of the disease is not unexpected. As a result of new emerging causes

of disease, defendants involved in asbestos and other toxic tort litigation will need to thoroughly explore plaintiff's exposure and medical histories to properly evaluate their potential liability in a given case.

For additional information, contact Tom Hayes at (312) 558-3961, or by e-mail at thayes@mckenna-law.com.

CHINESE DRYWALL LITIGATION UPDATE

Many people have heard about litigation regarding the use and installation of Chinese drywall. There has been much written and discussed about various problems associated with this material, from health effects to significant property damage. Yet, while the litigation surrounding this material has been ongoing for over a year, many questions remain. One thing that is certain is that claims associated with the installation and use of Chinese drywall will continue for the foreseeable future, with economic losses associated with these claims now estimated as totaling \$15 billion to \$20 billion.

The problem arose due to the effect of natural disasters such as Hurricane Katrina and others on the availability of drywall used for construction of homes and offices. Once the rebuilding process began, coupled with the then existing housing construction boom, a shortage of U.S. produced drywall ensued. To make up the shortfall, over 500 million pounds of drywall were imported into the U.S. from China. Much of this drywall was used in the Southeast U.S., particularly states like Louisiana, Texas and Florida. Fortunately, it appears that this material was not used throughout the U.S. As a result, the claims arising out of its use are largely limited to less than a third of the states. But, the Consumer Products Safety Commission has received complaints from 23 states.

Beginning in June 2008, officials in Florida began to receive complaints about unusual corrosion of copper containing materials and products in relatively new construction. This started investigations by Florida state agencies which have now broadened to other states as well as the Federal Government.

In the context of resulting claims related litigation, the claims fall into two broad categories: personal injury and property damage/diminution of value. As to injury claims, the limited studies to date show minimal health effects. There have been and

will continue to be claims of the irritant variety, such as runny noses, irritated eyes, odors and the like. But to date, there is really no peer reviewed scientific health literature that identifies long term or permanent health effects of a type seen in other litigation such as asbestos or silica. In that sense, Chinese drywall does not seem to be the so called "next asbestos" that the plaintiffs' bar may have hoped for.

Instead, there do appear to be some real problems in the area of property damage and diminution of value. It is these claims which may give rise to the billions of dollars of damages that some believe are related to the use and installation of this material. Assuming some form of remediation will be needed, this would involve demolition of all or parts of homes or other structures, costing at least \$50,000 to \$100,000 per home.

While the method of drywall manufacturing is largely the same in both the U.S. and China, the cause of the problem appears to be some differences in the constituents of some of the drywall that comes from China, in particular the presence of sulphur and stonium sulfide. U.S. produced drywall contains little if any sulphur and stonium sulfide. The current belief is that these naturally occurring constituents, when combined with higher temperatures and humidity found in states like Florida and Louisiana, release gases that react with copper. Copper is ubiquitous in homes and other structures as it is present in plumbing pipes, electronics and appliances such as air conditioners and refrigerators. Over time, the gases corrode the copper materials causing the appliances, electronics and piping to fail. Often, these items are installed behind walls or are otherwise inaccessible. Significant costs are incurred due to the demolition necessitated by the need to investigate the problems, including the inspection of these hidden components let alone repair them.

Other problems abound. Many insurers are denying homeowner claims based on policy language or other defenses. As a result, insurance coverage litigation has begun. Further, in the context of litigation, it is difficult if not impossible to get the Chinese drywall suppliers into a Federal Court let alone state court. Even if properly served and defaulted, collecting a judgment against any such entity is effectively impossible for a variety of reasons. This leaves defendants such as general

contractors, installers and distributors as the likely target of any lawsuits. Many of these entities and individuals are small business owners and do not have enough insurance or assets to pay such claims.

There has been Congressional activity including a statute mandating the Consumer Products Safety Commission to investigate health effects and other issues. State agencies are also working on these issues. Further, a Federal Multidistrict litigation has been established, MDL 2047. This is venued in the U.S. District Court of the Eastern District of Louisiana located in New Orleans. A property inspection protocol has been established and inspections have begun. The court is going to begin "bellweather" trials in some property damage cases in 2010. There is also litigation pending in various state courts.

The Chinese Drywall litigation is still in its infancy. There is still much study and analysis needed and ongoing to determine whether this is a real problem; and if so, its scope and the persons and entities genuinely affected.

We will continue to monitor developments and welcome any questions or comments. Please contact Bob Pisani at 312-558-3959 or rpisani@mckenna-law.com for more information.

ILLINOIS APPELLATE COURT DETERMINES THAT NO DUTY IS OWED UNDER A PREMISES LIABILITY CLAIM FOR SECONDARY EXPOSURE TO ASBESTOS

In *Nelson v. Aurora Equipment Company*, 301 Ill.App.3d 1036, 909 N.E.2d 9312 (2nd Dist., 2009), the Second District of the Illinois Appellate Court declined to extend a duty in a claim for premises liability to a person who had no contact with the premises, but who was allegedly exposed to asbestos when laundering the clothing of her spouse and son, which was worn at the subject premises.

Plaintiffs Vernon and John Nelson, the husband and son of the decedent, Eva Nelson, were employed for various periods at Aurora Equipment Company, and claimed that they were exposed to asbestos fibers and dust while employed at the Aurora facility, and that these fibers adhered to their clothing. The decedent had never worked at the facility nor had she ever been on the premises. However, the plaintiffs asserted that their decedent was exposed to asbestos fibers and dust from the premises when she was around their

clothing and when she washed their asbestos contaminated clothing.

Plaintiff's theory of the case was that Aurora breached its common law duty of ordinary care "to provide a safe workplace for individuals who were lawfully on the premises, as well as those who could foreseeably be harmed by dangerous conditions on [Aurora's] premises." According to the plaintiffs, it was foreseeable that the conditions on Aurora's premises, which purportedly included airborne asbestos fibers and dust, created a risk of injury and death from off premises exposures. Aurora responded in a motion for summary judgment that it had no relationship with the decedent, and therefore had no duty to her. According to Aurora, foreseeability of injury was irrelevant in the absence of a relationship between the premises and the injured individual. In granting the motion for summary judgment, the trial court noted that the injury was foreseeable, but declined to impose a duty on Aurora based upon "the magnitude of the burden and the consequences" which would naturally arise from the imposition of such a duty. Specifically, the court noted that this duty would apply to anyone who came in contact with the clothing of individuals who were on the premises, and thereby created a "limitless number of potential plaintiffs."

In affirming the decision of the trial court, the appellate court noted that the existence of a duty, an element of a negligence premises liability action, focuses on the relationship of the parties. Illinois law requires that the "defendant and plaintiff [stand] in such a relationship to one another that the law impose[s] upon the defendant an obligation of reasonable conduct for the benefit of the plaintiff." No such special relationship, such as entrant to the land, invitee, trespasser, existed in this case.

Although this is a favorable decision for defendants, it is limited to the facts. The appellate court repeatedly noted that the only action asserted was a premises liability claim. The opinion was therefore limited to the duty imposed on premises owners when a cause of action for premises liability is plead, and the court did not consider whether "some other theory of liability not pleaded would dictate a different result."

Please contact Margaret Foster at 312-558-8327 or mfoster@mckenna-law.com for more information.

TOXIC TIDBITS

Madison County Update

New asbestos case filings continue to steadily increase in Madison County, Illinois. *The Madison County Record* reports that the number of new cases filed in 2009 to date has exceeded the total number filed in 2008. As of November 6th, 656 new asbestos cases have been filed in the Edwardsville courthouse, compared to 639 in 2008. That number peaked in 2003 at 953. The impact of presiding asbestos Judge Daniel Stack's retirement at the end of next year on the Madison County asbestos docket is yet to be determined.

Suit Claims Toxic Airplane Air

Southwest Airlines has been hit with a personal injury lawsuit over allegedly toxic airplane air. According to Courthouse News Service, the federal complaint was filed by twin sisters who claim that they and other passengers choked on toxic "super-heated" fumes that formed a "mist" in a Southwest airplane during flight. The issue of toxic airplane air has been a problem for the airline industry for years. Critics of the industry claim that the system used to re-circulate air in airplanes does not remove fumes or vapors from the engine. The process involves combining re-circulated existing cabin air with air bled off the engines. The air pulled into the engines is cooled and compressed before it is pumped into the cabin. If this system malfunctions, chemical contaminants can allegedly circulate through the airplane, creating a so-called fume event.

Valerie and Victoria Vaughns' lawsuit claims that that one hour into their flight from Los Angeles, passengers began having trouble breathing. The pilot announced there had been a malfunction, and as he engaged the engines for a steep ascent, "super-heated air" blew out of the ventilation system and a "mist" appeared to hang in the cabin. The plane made an emergency landing in Albuquerque, and a fire marshal escorted passengers off the plane, the complaint says.

According to Courthouse News Service, the Vaughns claim to have suffered pressure in their heads, nausea, rashes, fatigue, uncontrollable tremors, weight loss and central and peripheral nervous system damage as a result of the incident. The complaint alleges that toxic fumes emitted during the flight were bled air that was contaminated with hot engine oil when the pilot put the engines on full thrust.

Over the past several years, both passengers and crew have claimed illness following so-called "fume events" on commercial aircraft. In many instances, the claims of illness from toxic airplane air have led to claims of chronic illness. Feelings of lethargy, tremors, chronic headaches, numbness, rashes, ears ringing, vision problems and other neurological symptoms have all been claimed by people alleging exposure to toxic airplane air. While many complaints come from pilots and flight attendants who spend thousands of hours on planes, these ailments have also been claimed by passengers exposed to a single fume event. Many different types of aircraft - including McDonnell Douglas MD-80s, the Boeing 777 and the BAe146c - have been the subject of toxic air and illness allegations.

For additional information, contact Tom Hayes at 312-558-3961 or thayes@mckenna-law.com.

WELCOME

The McKenna Toxic Tort group takes pleasure in announcing that Jennifer B. Groszek has joined us as an associate. Jennifer brings several years of experience in defending asbestos, benzene and other toxic tort cases. She is a graduate of Valparaiso University School of Law and is admitted to the bars of Illinois and Missouri.

McKenna Storer has offices located at:

33 North LaSalle Street
Suite 1400
Chicago, IL 60602
(312) 558-3900

666 Russel Court
Suite 303
Woodstock, IL 60098
(815) 334-9690

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