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Deadly Dust

Reporter: Frédéric Zalac
February 7, 2003

U.S.-based W.R. Grace produced Zonolite, a popular insulating material used in thousands of Canadian homes. Zonolite is the trademarked name for a product made from the mineral vermiculite.



Zonolite Advertisement

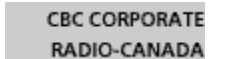
Vermiculite was called the miracle mineral... once heated, it expanded and was used for potting soil, fireproofing and home insulation. It was a very popular product from the 50's to the late 70's.

The company says there's nothing to worry about.

- [Go to the Q and A on vermiculite](#)

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Vermiculite

Even though vermiculite by itself is harmless, the deposit in Libby, Montana, just across the border from British Columbia, was naturally contaminated with tremolite... an extremely carcinogenic form of asbestos.

The Libby mine was once the most important source of vermiculite in the world. But the mine has been closed since 1990. The site has been condemned. For decades mine workers were exposed to the asbestos dust, especially in the mill, where workers say they often worked in a cloudy haze of airborne particles. The mill spat out more than two tons of asbestos every day.

The company provided dust masks but the employees didn't use them because they would clog up within minutes. Grace also installed several ventilators in response to requests from the state government.



The company's spokesman in Libby refused to answer our questions about workers' exposure to asbestos.

Toxic smoke from the old Libby mine mill

Grace headquarters in Maryland also refused to respond. But over the phone, a spokesman did say that the dangers of asbestos weren't well known before the 1970s. And yet, a confidential memo to the president of the company dated 1969 says "Tremolite asbestos is a definite health hazard". Grace had more proof that the asbestos was making their workers sick. During the 1960s the company regularly x-rayed its employees, and found that more than 90 percent of their long term employees had lung disease.



"They were warned by the Montana health department in the 60's. There were astronomical levels of asbestos. There were areas in the dry mill that had levels of asbestos fibres that you could develop asbestosis within a couple of weeks of exposure."

-lung specialist Dr. Alan Whitehouse

Perley Vatland, who worked at the mill, died from asbestosis. He had thought heart trouble was the cause of his ill health. But it wasn't until he consulted doctors outside the town of Libby that he learned the truth.



*Gayla Benefield,
daughter of Perley Vatland*

"He was full of asbestos," says his daughter Gayla, "his heart was enlarged because of the nitro he had taken and the strain on his heart but his heart was not the problem. He simply had no lungs. And he was 61 at the time. He lived until he was 62."

Even more troubling: hundreds of the victims had no contact with the mine or its employees. They became sick just living in Libby. There was asbestos dust even on the local high school track. In fact, secret tests conducted by Grace in the early 1980s found the risk of contamination was extremely high for the young athletes.

But the deadly dust from Montana did not stay south of the border: it crossed into at least six provinces in Canada.

**DOCUMENT SENT TO W.R.
GRACE FROM
VANCOUVER-BASED
GRANT INDUSTRIES
(DECEMBER 10, 1968)**

F. Hyde and Company in Montreal was processing Zonolite from Grace. In Ontario, processing plants were set up in St. Thomas, Ajax and Toronto. In the west, Grant Industries operated plants in

"There is asbestos in the ore we receive from Libby.

I'm afraid that we may still be exposing our employees to an unnecessary health hazard.

I want to urge you to put someone on this subject before we get closed down or slapped with some pretty large claims from employees or the heirs. It won't take many more biopsy reports before we get fingered."

vermiculite in Canada appeared as early as the mid-1960s. In 1964, Herbert Buchwald inspected the Zonolite plant in Calgary for the Alberta Department of Public Health. "What was noticeable of course was the amount of dust in the air, particularly during the bagging process," he says, "and the workers were not wearing any respiratory protection." His study showed seven out of nine workers had respiratory problems.

The danger isn't limited to the processing plants. There was still asbestos in the insulating end product eventually sold to consumers. And even though it hasn't been sold since 1984, Zonolite Insulation is still in the attics of thousands of Canadian homes.

The insulation was easy to use. Consumers could install it themselves... just open a bag and pour it out. But the instructions never recommended the use of face masks. And there was no indication that the product contained asbestos.

Winnipeg, Regina, Edmonton, Calgary, and Vancouver.

"This was shipped to sixty main processing plants across the U.S. and Canada," says Paul Peronard of the U.S. Environmental Protection Agency, "to a total of 240 locations that, at a minimum, you have to investigate. Is there material there? What is left behind? All of a sudden, the scope emanating from Libby is huge."

The first signs of trouble with Montana



Herbert Buchwald, former Alberta health inspector

"...no evidence of any adverse effects of our products on consumers...neither can we offer convincing evidence that they are absolutely safe."

-W.R. Grace confidential document

Documents show the Grace company decided not to alarm its customers, even though it had received a stern warning from the operator of the plants in western Canada, Grant Industries.

In a document marked Personal and Confidential in 1977 the company said there was "no evidence of any adverse effects of our products on consumers". But it goes on to say "neither can we offer convincing evidence that they are absolutely safe." Grace believed that putting labels on the product would "result in substantial sales losses", and they considered it unlikely that consumers could prove that they had been

harmled by exposure to Zonolite.

In the United States, the EPA also conducted tests. It wanted to evaluate the risk of exposure in homes. "Every time we did anything that disturbed the insulation," says Peronard, "whether it was simply storing boxes or something as aggressive as putting a ceiling fan or cutting a hole, we got all sort of airborne fibers, not only in the attic space but spread to the rest of the house."



*Paul Peronard, U.S.
Environmental Protection Agency*

"Nobody really knows for sure whether this is going to be a severe medical hazard at this point or not," says Dr. Whitehouse, "it's going to be a while before it's found out." So the risk to consumer health is not well-known. But while waiting for definitive results, the EPA recommends that homeowners be very careful.

"If there is no reason to disturb it, don't. If it is butted away, stay away from it. If you have to do something, remodeling, plumbing, rewiring work, you should treat it as asbestos containing material," says Paul Peronard from the EPA.

Health Canada doesn't think it's necessary to warn homeowners because they recommend consulting professionals before renovating. The problem is that most professionals have no idea there's asbestos in Zonolite.

In Ontario and Quebec, as in many other provinces, there's no health warning about old Zonolite insulation. A reference used both in Quebec and Manitoba is the Quebec's Worker's Compensation Board, (CSST) Toxicology Index. The entry for Zonolite now clearly mentions the risks of asbestos tremolite contamination. But this notice was added to the index only hours before our interview with a CSST official.



An electron microscope sample of Zonolite from barracks at Shilo military base in Manitoba. The sharp, needle-like fibres are asbestos

And yet, the CSST knew about the asbestos problem at Grace's Montana mine since the late 80's. The Zonolite entry that existed prior to our interview shows no mention of asbestos. It may be just an oversight but the CSST knew about the risks and failed to issue a warning for more than twelve years.

W.R. Grace is now facing a flood of lawsuits related to its products that contained asbestos. The company filed for bankruptcy protection in 2001.

Q and A

More information about vermiculite

What is vermiculite?

Vermiculite is a volcanic material compound that expands when it is heated and has the unusual property of expanding into worm-like or accordion-like pieces. They are usually the size of a nickel or dime. Vermiculite has been used in various industries for more than 80 years. It is used in the construction, agricultural, horticultural and industrial markets.



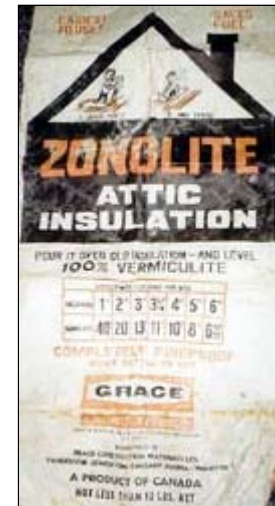
Vermiculite insulation

Where are vermiculite reserves?

Vermiculite is found throughout the world. Countries that hold commercial vermiculite mines include Australia, Brazil, Kenya, South Africa, Zimbabwe and the United States. The vermiculite commercially available today comes from deposits that are not considered harmful.

What brand of vermiculite is dangerous?

More than 70 per cent of the vermiculite ore mined in the world came from the Libby mine, which has been closed since 1990. This particular mine was unusual because the area also included a natural deposit of tremolite asbestos. As a result, much of the vermiculite from the Libby mine was contaminated with tremolite asbestos. According to experts, it's a very toxic form of asbestos, 10 times as carcinogenic as the more prevalent chrysotile asbestos. That vermiculite was sold under the brand name Zonolite Attic Insulation.



How is W.R. Grace Co. involved in this issue?

W.R. Grace bought the vermiculite mine in Libby in 1963 from the Zonolite Company. More than 1.5 billion pounds of raw contaminated ore was sent to processing plants across Canada. From a third to a half of the vermiculite from this mine was sold as attic insulation from the 1940s until 1984, when its sale by the company was discontinued.

Was Zonolite widely used?

According to documents from the U.S. Environmental Protection Agency (EPA), between 15 and 35 million U.S. homes and businesses were insulated with Zonolite. Documents show about one tenth of the production from Libby was shipped to Canada. It was even on the list of eligible materials for the federal government's Canadian Home Insulation Program (CHIP), a program that offered grants to homeowners from 1977 to the mid-1980s.

What if I have Zonolite insulation?

Stay away from it. If it's left untouched in the attic, there should be minimal or no risk at all. The asbestos fibres must be airborne to be inhaled. Each time you breathe asbestos fibres into your lungs, you

increase the chance of developing health problems.

The fibres can become trapped in the lungs and can cause lung cancer and mesothelioma, a cancer of the lungs' lining. The risk is linked to exposure. It becomes risky is when you have activities that bring you up in the attic, like storing boxes, anything that disturb the material will cause airborne fibres almost immediately.

According to the U.S. EPA, there are cases of individuals who got asbestosis from four or five significant contacts with the insulation material. Tradesman face a higher risk.

What if I'm renovating?

If you are doing work in the attic yourself, such as remodeling, plumbing or rewiring, you should treat Zonolite as asbestos-containing material. You should wear a proper respirator and change your clothes. You have to make sure the fibres won't spread it to other areas of your home. It is recommended to hire a contractor who is properly equipped to work with asbestos.

What should I do if I think I have Zonolite in my attic?

Do not let children play in the area. Do not sweep the Zonolite or use a normal vacuum cleaner. This will re-circulate the dangerous fibres, which could linger in the air for days. There are vacuum cleaners on the market that come with highly sensitive HEPA filters that will capture the fibres.

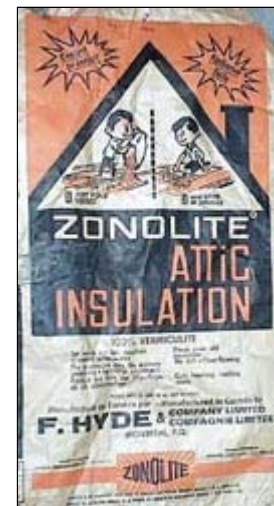
My home insulation looks like vermiculite. How do I know it's Zonolite from Libby?

It's impossible to tell just by looking at it. Often, empty Zonolite kraft paper bags were left in the attic. If the bags show that ore was processed by WR Grace Canada, Grant Industries or F. Hyde and Co, the product is probably from Libby and is likely contaminated. If you know you have vermiculite insulation in your attic or walls and you're concerned about it, it probably makes sense to test the material to see if it contains asbestos.

Can I test the material myself?

If you want to have a sample analyzed, it is suggested that you hire a trained consultant or contractor to collect the sample and get it analyzed at a laboratory. There are numerous consulting companies that perform this kind of asbestos analysis work.

According to Bruce Stewart from Pinchin Environmental in Mississauga, there should be several samples taken since asbestos concentration may vary from one vermiculite piece to another. Also, specialized consultants should be looking for traces of asbestos, even below 0.1 per cent on a weight-to-weight basis. Normally a concentration of less than 0.1 per cent is considered safe. But vermiculite is extremely friable and can release a very high number of asbestos fibres in the air when disturbed even if the



concentration of asbestos is considered very low.

If there is asbestos in the insulation, should I have it removed?

Before taking that step, homeowners should consider a number of factors. First, removing asbestos-containing materials is typically very expensive. If a significant amount of material is involved, it will probably cost thousands of dollars.



Secondly, due to the physical characteristics of vermiculite, there's a low potential the material is getting into the air. If the insulation is not exposed to the home environment (for example, it's sealed behind wallboards and floorboards or is isolated in the attic which is vented outside) the best advice would be to leave it alone.

But if you have a house that needs to be renovated or you use the attic, you expose yourself every time you go up there and risk spreading it to the rest of your house. In those circumstances you are better off removing it says the U.S. EPA. To avoid conflict of interest, have the insulation tested by one firm and removed by another. Carefully check the credentials of those you hire.

What do Canadian health authorities have to say?

Health Canada has not issued any guidelines or warnings to homeowners about this product yet. There are no official online Canadian sources about Zonolite, except for a short entry in Quebec Worker's compensation board (CSST) toxicology database.

Sources: U.S. Environmental Protection Agency, Pinchin Environmental, St. Louis Post-Dispatch, Radio-Canada