

# DANGERS IN THE DUST

Inside the Global Asbestos Trade

A global network of lobby groups has spent nearly \$100 million since the mid-1980s to preserve the market for asbestos, a carcinogen now banned or restricted in 52 countries. Scientists say asbestos may cause up to 10 million deaths by 2030, with a mounting toll in the developing world.



THE CENTER FOR  
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*Investigative Journalism in the Public Interest*

INTERNATIONAL CONSORTIUM

ICIJ

OF INVESTIGATIVE JOURNALISTS

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Go online for more about the global asbestos trade including interactive maps, supporting documents and related stories at: [www.publicintegrity.org/investigations/asbestos](http://www.publicintegrity.org/investigations/asbestos)

# About this Project

In the fall of 2009, the International Consortium of Investigative Journalists began looking into the global trade in asbestos, a cancer-causing fiber banned or restricted in much of the industrialized world but aggressively marketed in developing countries. What evolved was a nine-month investigation of an international lobby, much of it coordinated from Canada, which promotes the use of asbestos in construction materials and other products.

ICIJ joined with reporters and producers with the BBC's International News Services ([www.bbc.co.uk](http://www.bbc.co.uk)) to document the asbestos industry's activities in Brazil, Canada, China, India, Mexico, Russia, and the United States. Our investigation concluded that the industry has spent nearly \$100 million since the mid-1980s to keep asbestos in commerce. The team's reporting reveals close relationships among the industry, governments and scientists, and cites predictions from health experts that new epidemics of asbestos-related disease will emerge in the coming decades. Some experts believe that by 2030, asbestos will have taken as many as 10 million lives around the world.

*Dangers in the Dust: Inside the Global Asbestos Trade* is based on extensive research in eight countries. The team relied on thousands of pages of documents, including court filings, scientific studies, and financial records, as well as on interviews with health officials, industry representatives, scientists, victims, lawyers, and activists.

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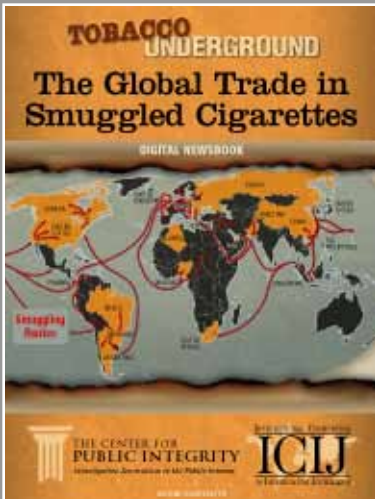
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# About ICIJ

The International Consortium of Investigative Journalists (ICIJ) was launched in 1997 as a project of the Center for Public Integrity to globally extend the Center's investigative style of journalism in the public interest. Based in 50 countries, ICIJ's global network includes 100 of the world's top investigative reporters who produce collaborative, cross-border reports on major global issues around the world.

Since its founding, ICIJ has released a series of groundbreaking reports with global impact, including stories on tobacco industry collusion with organized crime, the war profiteering of Haliburton and other contractors in Iraq and Afghanistan, the privatization of scarce water resources, and political lobbying payments by unsavory governments. More information about the ICIJ can be found at [www.icij.org](http://www.icij.org).



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The Center for Public Integrity is a nonprofit, nonpartisan, and independent digital news organization specializing in original investigative journalism and research on significant public policy issues.

Since 1990, the Washington, D.C.-based Center has released more than 475 investigative reports and 17 books to provide greater transparency and accountability of government and other institutions. It has received the prestigious George Polk Award and more than 32 other national journalism awards and 18 finalist nominations from national organizations, including PEN USA, Investigative Reporters and Editors, Society of Environmental Journalists, Overseas Press Club, and National Press Foundation.

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# Exporting an Epidemic

## HUMAN TOLL REACHES MILLIONS AS ASBESTOS INDUSTRY EXPANDS WORLDWIDE

By Jim Morris

International Consortium of Investigative Journalists

Published Online | June 28, 2010

**I**N OSASCO, BRAZIL, an industrial city on the western flank of Sao Paulo, the past is buried beneath a Wal-Mart Supercenter and a Sam's Club at the intersection of Avenida MariaCampos and Avenida dos Autonomistas. Here the Eternit asbestos cement factory was shuttered in 1993 and demolished in 1995 after 54 years of operation. Here three generations of workers — pouring asbestos into giant mixers with cement, cellulose and water, emptying bags, cleaning machinery — were immersed in fiber-rich white dust, setting themselves up for diseases that would debilitate many of them in retirement and kill some of them in excruciating fashion. Scores have died since the mid-1990s, at least 10 of mesothelioma, a rare malignancy that eats into the chest wall and dispatches its victims swiftly. Aldo Vincentin

succumbed at age 66 in July 2008, only three months after his diagnosis. “They knew about the dangers of the materials and they didn’t protect my husband,” his widow, Giselia Gomes Vincentin, says of Eternit. “I think many people will still die.”

Backed by a global network of trade groups and scientists, the multibillion-dollar asbestos industry has stayed afloat by depicting Osasco and similar tragedies as remnants of a darker time, when dust levels were high, exotic varieties of the fire-resistant mineral were used, and workers had little, if any, protection from the toxic fibers. There is evidence that dangers persist: Perilous conditions have been documented from Mexico City to Ahmedabad, India. And yet, despite waves of asbestos-related disease in North America, Europe, and Australia, bans or restrictions in 52 coun-



## Millions Face New Threat From a Deadly White Fiber

Once prized for its fire-retardant qualities, asbestos is now banned in at least 52 countries. But backed by a multinational lobbying campaign, asbestos use is growing rapidly in developing countries, prompting health experts to warn that millions will die in future epidemics of lung cancer, asbestosis, and mesothelioma. The International Labor Organization estimates that 100,000 workers die each year from asbestos-related diseases.

Sources: U.S. Geological Survey; United Nations Commodity Trade Statistics Database; United Nations Environmental Programme; International Ban Asbestos Secretariat

International Consortium of Investigative Journalists, [www.icij.org](http://www.icij.org)

Graphics by: [www.stephenrouttree.com](http://www.stephenrouttree.com)

tries, piles of incriminating studies, and predictions of up to 10 million asbestos-related cancer deaths worldwide by 2030, the asbestos trade remains alive and well.

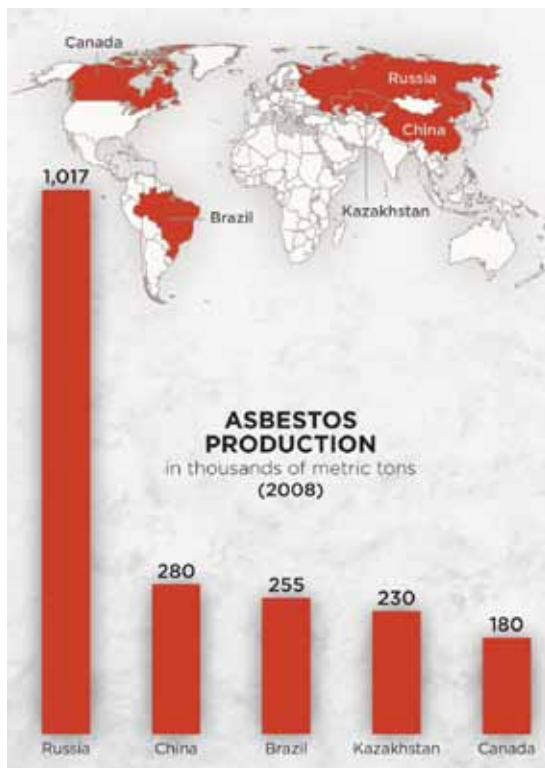
Asbestos is banned in the European Union. In the United States it

is legal but the industry has paid out \$70 billion in damages and litigation costs, and asbestos use is limited to automobile and aircraft brakes, gaskets and a few other products. The industry has found new markets in the developing world, however,



where demand for cheap building materials is brisk. More than two million metric tons of asbestos were mined worldwide in 2009 — led by Russia, China, and Brazil — mostly to be turned into asbestos cement for corrugated roofing and water pipes. More than half that amount was exported to developing countries like India and Mexico.

Health officials warn that widespread asbestos exposures, much as they did in the West, will result in epidemics of mesothelioma, lung cancer, and asbestosis in the developing world. The World Health Organization (WHO) says that 125 million people encounter asbestos in the workplace, and the International Labor Organization (ILO) estimates that 100,000 workers die each year from asbestos-related diseases. Thousands more perish from environmental exposures. Dr. James Leigh, retired director of the Centre for Occupational and Environmental Health at the Sydney School of Public Health in Australia, has fore-

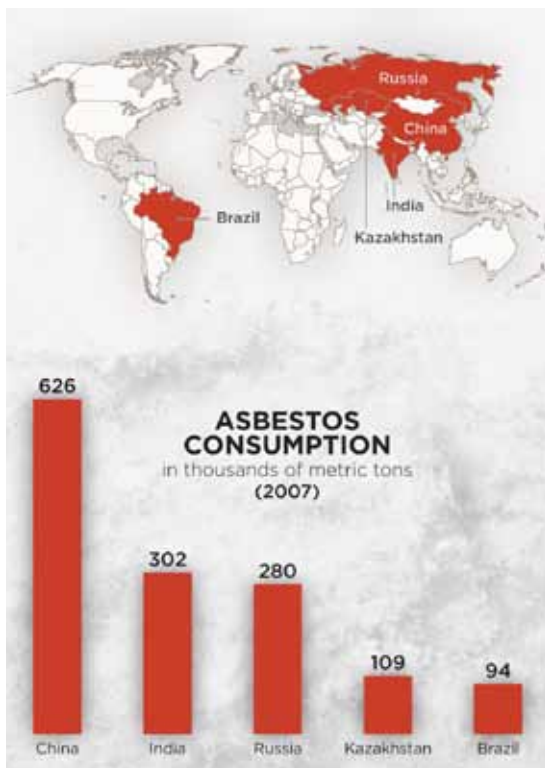


cast a total of 5 million to 10 million deaths from asbestos-related cancers by 2030. The estimate is “conservative,” Leigh says. “If exposures in developing countries lead to epidemics extending further in time, the numbers would be greater.” Leigh’s calculation does not include deaths from asbestosis, a non-cancerous, chronic lung disease. Anoth-

er study, by two researchers in New Delhi, suggests that by 2020, deaths from asbestos-related cancers could exceed 1 million in developing nations.

Behind the industry's growth is a marketing campaign involving a diverse set of companies, organized under a dozen trade associations and institutes. Backing them are interests ranging from mining companies like Brazil's SAMA to manufacturers of asbestos cement sheets like India's Visaka Industries. The largely uncharted industry campaign is coordinated, in part, by a government-backed institute in Montreal and reaches from New Delhi to Mexico City to the aptly named city of Asbest in Russia's Ural Mountains.

An analysis by the International Consortium of Investigative Journalists has tracked nearly \$100 million in public and private money spent by these groups since the mid-1980s in three countries alone — Canada, India and Brazil — to keep asbestos in commerce. Their



strategy, critics say, is one borrowed from the tobacco industry: create doubt, contest litigation, and delay regulation. "It's totally unethical," says Jukka Takala, director of the European Agency for Safety and Health at Work and a former ILO official. "It's almost criminal. Asbestos cannot be used safely. It is clearly a carcinogen. It kills people."

Industry-funded researchers have mounted a prolific response, placing into the scientific literature hundreds of articles claiming that asbestos can be used safely. Their argument is that chrysotile, or white, asbestos — the only kind sold today — is orders of magnitude less hazardous than brown or blue asbestos, which the industry stopped mining in the 1990s. “It’s an extremely valuable material,” argues Dr. J. Corbett McDonald, an emeritus professor of epidemiology at McGill University in Montreal who began studying chrysotile-exposed workers in the mid-1960s with the support of the Quebec Asbestos Mining Association. “It’s very cheap. If they try to rebuild Haiti and use no asbestos it will cost them much more. Any health effects [from chrysotile] will be trivial, if any.”

Health and labor officials recoil at such statements. “No exposure to asbestos is without risk,” the Collegium Ramazzini, an international society of scholars on occupational



and environmental health, said in a recent paper. “Asbestos cancer victims die painful, lingering deaths. These deaths are almost entirely preventable.”

Last fall, the American Public Health Association joined the Collegium, the World Federation of Public Health Organizations, the International Commission on Oc-

cupational Health, and the International Trade Union Confederation in calling for a global asbestos ban. In 2009, a panel of 27 experts convened by the WHO's International Agency for Research on Cancer reported, "Epidemiological evidence has increasingly shown an association of all forms of asbestos ... with an increased risk of lung cancer and mesothelioma." The panel also found there was new evidence that asbestos causes cancer of the larynx and the ovary.

But the asbestos industry has signaled that it will not go away quietly. Promotion of pro-industry studies is joined by campaigns of political lobbying and ad buying to ensure that asbestos is freely marketed in fast-growing countries. Consider some of the events just this year: In a March 16 letter, the head of the Asociación Colombiana de Fibras, a chrysotile trade group in Bogotá, Colombia, asked World Bank president Robert Zoellick to "soften your position" on the compound, arguing that projections of 100,000 asbestos-related deaths a year were based on "old data." (The bank announced last year that it expects borrowers to use asbestos alternatives whenever feasible.) In documents obtained in Colombia by

ICIJ, the association boasts of creating a spinoff in Ecuador to try to shape government regulations and decries the emergence of the "international prohibitionist movement" against asbestos. "We have to start a wide campaign among all the chrysotile associations in the world to counteract [the movement], sending communications to the directors of the World Health Organization and International Labor Organization," state the minutes of a 2008 board meeting.

In a Jan. 7 letter, a lawyer for India's Asbestos Cement Products Manufacturers Association scolded Dr. T.K. Joshi, an occupational medicine specialist in New Delhi, for making "baseless" allegations against chrysotile and frightening workers. The lawyer demanded that Joshi retract his "yellow reporting" or, he implied, face legal action. A few weeks earlier, the association had placed an ad in *The Times of India*, that nation's leading English daily, headlined, "Blast Those Myths About Asbestos Cement." The ad claimed, among other things, that the cancer scourge in the West had come during a "period of ignorance," when careless handling of asbestos insulation resulted in excessive exposures. Such exposures

are long gone, the ad said, noting that asbestos cement products are “strong, durable, economical, energy efficient and eco-friendly.”

## A Troubled History

Fire- and heat-resistant, strong and inexpensive, asbestos — a naturally occurring, fibrous mineral — was once seen as a construction material with near-magical properties. For decades, industrialized countries from the United States to Australia relied on it for countless products, including pipe and ceiling insulation, ship-building materials, brake shoes and pads, bricks, roofing, and flooring.

Ominous reports about the health effects of asbestos began appearing in Europe in the late 19th century. By 1918, American and Canadian insurance companies were refusing to cover asbestos workers because of rampant lung disease. In 1930, the ILO issued a warning: “All [asbestos] processes from extraction onwards unquestionably involve a considerable hazard.” In 1960, a South African pathologist confirmed a direct link between asbestos exposure and mesothelioma. And yet, uncontrolled use of asbestos only grew, peaking in the United

States in 1973. By one estimate, 100 million Americans were occupationally exposed to asbestos during the 20th century.

The first asbestos lawsuit against an asbestos insulation manufacturer in the United States was filed in 1966. Internal documents showing corporate knowledge of the mineral’s lung-ravaging properties began to surface, and by 1981 more than 200 companies and insurers had been sued. The following year, the nation’s biggest maker of asbestos products — Johns Manville Corp. — and two other defendants filed for bankruptcy protection in an effort to hold off the tide of litigation. From the 1960s through 2002, more than 730,000 people filed asbestos claims, resulting in damage payments and litigation costs of \$70 billion, according to a 2005 study by the RAND Corp. Of this, \$30 billion actually went to claimants.

As the evidence against asbestos accumulated in the 1980s, the Scandinavian countries began to impose bans. But the biggest blow for chrysotile came in 1999, when the European Commission decreed that products made of white asbestos would be outlawed as of Jan. 1, 2005. The EU’s decision to ban was replicated by Chile, Australia, Ja-

pan, and Egypt, among other countries. Most flatly forbid use of asbestos, though a few still allow it in brakes and gaskets. Fifty-two countries eventually slapped restrictions on its use, including most of the developed world. Less hazardous but generally more expensive substitutes such as polypropylene fiber cement, aluminum roof tiles, and steel-reinforced concrete pipe have gained favor.

Yet chrysotile continues to be mined and used heavily in some parts of the world; in 2008, raw fiber exports worldwide were valued by the United Nations at nearly \$400 million. Russia is the world's biggest producer, China the biggest consumer. But Canada — which uses almost no asbestos within its borders but still ships it abroad — is the primary booster, a role it assumed in the 1960s when the country's mining industry in Quebec was threatened by studies tying the mineral to cancer. The federal and provincial governments together have given C\$35 million over the past quarter-century to the Montreal-based Chrysotile Institute, a nonprofit group that promotes the “controlled” use of asbestos in construction and manufacturing.

Controlled use is elusive in de-

veloping nations. ICIJ inquiries in a half-dozen countries, including on-site visits and interviews with local health officials and worker advocates, found spotty protection measures and widespread exposure to asbestos dust. This will likely produce outbreaks of occupational disease for years to come in places like India, China, and Mexico, experts say. “Anybody who talks about controlled asbestos use is either a liar or a fool,” says Barry Castleman, an environmental consultant based near Washington, D.C., who advises the WHO on asbestos matters. “If they can't have controlled use in Sweden, they can't have controlled use in Swaziland.”

### The Chrysotile Institutes

At the center of the debate is the Canadian government-backed Chrysotile Institute. The institute's president, Clement Godbout, insists that his organization's message has been misinterpreted. “We never said that chrysotile was not dangerous,” he says. “We said that chrysotile is a product with potential risk and it has to be controlled. It's not something that you put in your coffee every morning.”

The institute is a purveyor of in-

formation, Godbout emphasizes, not an international police agency. “We don’t have the power to interfere in any countries that have their own powers, their own sovereignty,” he says. “We don’t have the resources to travel the world every day.” Godbout says he is convinced that large asbestos cement factories in Indian cities have good dust controls and medical surveillance, though he acknowledges that there might be smaller operations “where the rules are not really followed. But it’s not an accurate picture of the industry. If you have someone on a highway in the U.S. driving at 200 miles per hour, it doesn’t mean everybody’s doing it.”

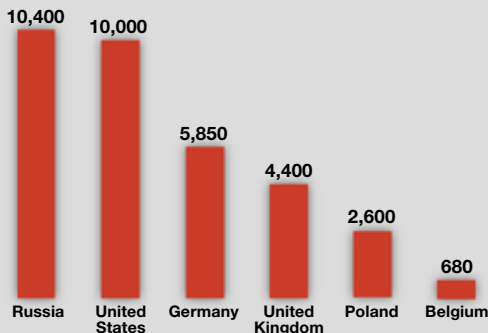
The Chrysotile Institute has received \$1 million from the asbestos industry over the past five years, according to Godbout, who says he doesn’t know how much was contributed in the previous 20, before he became chairman. Documents obtained under Canada’s Access to Information Act by Ottawa researcher Ken Rubin indicate that the industry gave more than \$18

million to the institute from 1984 through 2001, meaning its total contribution to Godbout’s group is probably around \$20 million.

The institute offers what it describes as “technical and financial aid” to a dozen sister organizations around the world. These organizations, in turn, seek to influence science and policy in their own countries and regions. Consider the situation in Mexico, which in 2007 used 10 times as much asbestos as

## A Striking Toll

**ANNUAL ASBESTOS-RELATED  
CANCER DEATHS**  
2005 (est.)



Sources: International Labor Organization, Centers for Disease Control and Prevention (U.S. only)

International Consortium of Investigative Journalists,  
[www.icij.org](http://www.icij.org)

Graphic by: [www.stephenroutree.com](http://www.stephenroutree.com)

its neighbor, the United States. Promoting chrysotile use is Luis Cejudo Alva, who has overseen the Instituto Mexicano de Fibro Industrias (IMFI) for 40 years. Cejudo says he is in regular contact with the Chrysotile Institute and related groups in Russia and Brazil, and gives presentations inside and outside of Mexico on the prudent handling of chrysotile. “If I knew that our industry kills people, that our products affect the population, I wouldn’t be here talking to you,” Cejudo says. “I am here because I have realized that many asbestos detractors exist, especially in Europe.” In the 1990s, he notes, IMFI members, along with their Canadian and American counterparts, agreed to stop selling asbestos to factories without adequate safety measures; this led to some plant closures. “We work hard with the government Health and Labor ministry representatives to create the regulations and to make constant visits to prove that the factories are following these regulations,” Cejudo says.

A more skeptical perspective comes from Dr. Guadalupe Aguilar Madrid, a physician and researcher at the Mexican Social Security Institute, which oversees public health under the federal Secretariat of Health. Aguilar maintains that the

IMFI exists not to promote safety but to preserve the chrysotile market in Mexico. It has insinuated itself into both the Labor and Health secretariats, she said, and has had a “very big” influence over workplace and environmental rules. “When asbestos was banned in industrialized countries and [producers] started to lose money, they came to the developing countries to recover their investments,” Aguilar says. “After some South American countries banned asbestos, they focused on Mexico as their main manufacturer.”

Mexico ramped up imports of Canadian chrysotile in the 1970s, and its weak worker-protection laws have allowed dangerous conditions to proliferate, Aguilar says. About 70 factories in and around Mexico City manufacture asbestos cement, and an indeterminate number make asbestos brakes, boilers, and other products, according to Aguilar. All told, she estimates that 10,000 Mexicans work with asbestos at any one time, many without proper protection. As a result, Mexico can expect an epidemic of mesothelioma in coming years, Aguilar says. Her research shows that the number of deaths is rising steadily, as would be expected given the 30- to 40-year latency period commonly



associated with the disease. Including mesothelioma and lung cancer, “we could be talking about 3,000 to 5,000 deaths from diseases related to asbestos every year,” the doctor says. She calls Canada’s chrysotile exports “deplorable.”

Another sister organization is the Brazilian Chrysotile Institute, based in the state of Goiás, site of the country’s only asbestos mine. A prosecutor in the state is seeking dissolution of the institute, a self-described public interest group with tax-exempt status. The prosecutor charges in a court pleading that the institute is a poorly disguised shell for the Brazilian asbestos industry, which provides virtually all its budget. Among other things, the group helped the Brazilian government fund studies rigged to benefit the industry, the prosecutor alleges. Having inflicted “social damage stemming from [its] illegal practices,” the institute should pay one million reais (about \$550,000) in damages and a fine of 5,000 reais (\$2,800) for every day it remains open, the pleading says. In a statement to ICLJ, a spokesman for the institute denied the allegations, saying the group “ensures the health and security of workers and users, protection of the environment and [provides] information to society.”

Public records show that the institute has taken in more than \$8 million from asbestos companies since 2006.

That a Brazilian prosecutor is even attempting to shut down the institute is unusual. Most if not all of the pro-chrysotile groups have friendly relationships with their host governments and appear to easily overpower public health advocates. In Russia, which produced one million metric tons of chrysotile in 2008, more than any country by far, Prime Minister Vladimir Putin pledged to assist the industry after a plea for help from a trade union chief. Putin “promised to support Russian producers of chrysotile, especially in situations where we find ourselves under political pressure at the international level,” Andrei Kholzakov, chairman of the union that represents workers at one of the country’s largest asbestos companies, Uralasbest, said in an April 2009 press release.

Perhaps nowhere is the industry as strong as in India, the world’s second-largest consumer of asbestos, after China. There are more than 400 asbestos cement factories in the Indian state of Gujarat alone, concentrated in the city of Ahmedabad, and the national market is

growing at the rate of 30 percent a year, due mainly to construction in poor, rural areas, where asbestos sheet is standard cover for homes. The Asbestos Cement Products Manufacturers Association enjoys a “tight relationship” with federal and state politicians, says activist Madhumita Dutta. The state in which she lives, Tamil Nadu, owns an asbestos roofing materials plant, Dutta says, and there are similar arrangements in other states. “Things are a bit bleak,” she wrote in an e-mail to ICIJ. “The industry has grown and is expanding, their political clout getting stronger, their direct interventions in the government decision-making more apparent (through funding government studies), their propaganda more aggressive.” Government sources told ICIJ that the manufacturers’ association has received about \$50 million from the industry since 1985, with annual allotments rising as anti-asbestos sentiment escalated. One of the group’s specialties is “advertorials” — faux news articles that extol the safety and value of asbestos products. The association’s annual budget now ranges from \$17 million to \$25 million, according to one member.

The ACPMA says on its website that the use of chrysotile in manu-

facturing “is safe for the workers, environment and the general public.” Earlier this year, however, authorities brought four criminal cases against owners of a 48-year-old asbestos cement factory in Ahmedabad, Gujarat Composite Ltd., alleging egregious health violations. At least 75 employees of the company have developed lung cancer over the past decade.

Though there are many uncertainties, researchers say that China appears poised for an explosion of asbestos-related illness in the not-too-distant future. Based on a formula developed by Antti Tossavainen with the Finnish Institute of Occupational Health — that one mesothelioma case occurs for every 170 tons of asbestos produced and consumed — at least 3,700 cases of the disease can be expected each year, not to mention thousands of cases of lung cancer, asbestosis, and stomach cancer. China has yet to see the level of disease experienced in Europe, the U.S. and other industrialized parts of the world, experts say, because per capita consumption of asbestos remained low into the 1970s. That’s no longer true, as China is now the world’s biggest user of the mineral. Takala, director of the European Agency for Safety

and Health at Work, estimates that 10,000 to 15,000 Chinese will die of asbestos-related ailments each year by 2035. The country has about 1,000 asbestos mines and production facilities, one million asbestos workers, and annual consumption of more than 600,000 metric tons of chrysotile.

### Canada's Controversial Role

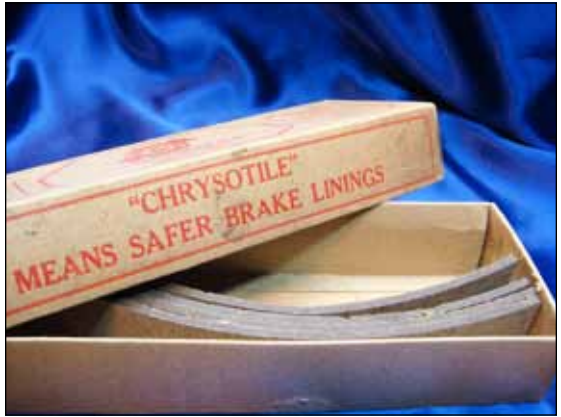
No country has defended chrysotile as vigorously, and for as long, as Canada. When the U.S. Environmental Protection Agency issued a rule banning asbestos in 1989, the government of Canada participated in an industry lawsuit that overturned the rule. When France banned asbestos a decade later, Canada teamed up with Brazil in an unsuccessful World Trade Organization challenge. And when a United Nations chemical review committee recommended in 2008 that chrysotile be listed under Annex III of the Rotterdam Convention — a treaty that requires exporters of hazardous substances to use clear labeling and warn importers of any restrictions or bans — Canada, India, and a few other nations kept the recommendation from winning the unanimous support it needed to pass.

It was the fourth time since 2004 that chrysotile had come up for consideration and the fourth time it had failed to make Annex III. It probably won't come up again until 2011 at the earliest. "We knew it was not going to go through smoothly and unopposed," says Sheila Logan with the United Nations Environment Programme, who was in the thick of negotiations on chrysotile in 2006. Annex III, Logan explains, is a "semi-blacklist, though there are many substances on there that many countries will continue to import. The fear [among exporters and users] is that countries will just take a blanket approach and say, 'No, I'm not importing anything that's included in the convention.'" Logan says she believes that chrysotile should be listed, even if — as some scientists claim — it is less carcinogenic than blue or brown asbestos, both of which belong to a family known as amphiboles. She draws an analogy: "An X-ray may be less dangerous than a gamma-ray burst, but I'm not going to stand in front of either of them. That's my personal choice."

Canada today is the world's fifth largest producer of asbestos and its fourth largest exporter, shipping \$97 million of raw fiber overseas in 2008. All this comes from just two

mines, both located in Quebec. The Chrysotile Institute says the industry accounts for about 700 direct and 2,000 indirect jobs — hardly an economic juggernaut. But it survives despite mounting criticism: Both the federal and provincial governments have been besieged by letters from prominent academics, physicians, and others protesting Canada's export of chrysotile. In a statement to ICIJ, the Quebec Ministry of Natural Resources made its case: "There are no valid reasons to halt chrysotile export since it can be used safely. [D]eveloping

countries are in great need of this kind of material (as we were some years ago) to build good infrastructures. Furthermore, substitutes to chrysotile have not yet been proven to be safer." In addition to funding the Chrysotile Institute, the ministry has given C\$748,000 since 2004 to the Société Nationale de l'Amiante, an asbestos research group. No longer active, the group relocated its office to the ministry, which is in the process of settling its "past commit-



**Hundreds of former mechanics exposed to chrysotile, or white, asbestos dust from brake linings have sued auto and parts manufacturers, alleging the toxic fibers gave them mesothelioma, a virulent form of cancer.** (Credit: Flickr user Asbestorama)

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ments and responsibilities," a government spokesman said.

Christian Paradis, natural resources minister in Canada's conservative government, is similarly supportive of the industry. Anative of the town of Thetford Mines, Quebec, Paradis once served as president of the Asbestos Chamber of Commerce and Industry. "Since 1979, the Government of Canada has promoted the safe and controlled use of chrysotile, [and] our

position remains the same,” Paradis said in a statement to ICIJ. “Banning chrysotile is neither necessary nor appropriate. ... All recent scientific studies show that chrysotile fibers, the only asbestos fiber that is produced and exported from Canada, can be used safely under controlled conditions.”

Fine for export, perhaps, but not for domestic use. In 2009, Canada sent nearly 153,000 metric tons of chrysotile abroad. More than half went to India; the rest went to Indonesia, Thailand, Mexico, Sri Lanka, Pakistan, and the United Arab Emirates. At home it was a different story: Canada used only 6,000 tons domestically in 2006, the last year for which data are available. Canadian officials seem determined to boost production: The Quebec Ministry of Economic Development, Innovation and Export Trade is considering a C\$58 million loan guarantee to save the floundering Jeffrey Mine. The mine’s owner has announced plans to ship 200,000 tons of chrysotile per year to Asia if the money comes through.

Amir Attaran, an associate professor of law and medicine at the University of Ottawa, says he is ashamed of the nation’s stance. “It’s absolutely clear that [Prime Minis-

ter] Stephen Harper and his government have accepted the reality that the present course of action kills people, and they find that tolerable,” Attaran says. “Canada’s certainly aware that countries which purchase chrysotile do so in the absence of correct regulation.”

## The Scientists

On March 10, David Bernstein stepped up to the podium at the Society of Toxicology’s annual meeting in Salt Lake City, Utah, and announced the results of his latest study. An American-born toxicologist based in Geneva, Bernstein began researching chrysotile in the late 1990s at the behest of a mine operator in Brazil. He was now reporting that rats exposed to chrysotile asbestos for five days, six hours a day, had shown no ill effects whatsoever. Rats exposed to brown amosite, a type of amphibole, hadn’t fared so well. The chrysotile fibers were cleared quickly from the animals’ lungs and caused “no pathological response at any point,” even though the exposure level was 50 percent higher than that for amosite, Bernstein said. The fibers have very different appearances under magnification. Chrysotile fibers look like ultrathin,

rolled sheets; amosite and other amphiboles look like solid rods.

The sponsor of the as-yet unpublished study was Georgia-Pacific Corp. of Atlanta, which once made a ready-mix joint compound — a goopy white substance used to seal joints between sheets of drywall — that contained 5 percent chrysotile. Georgia-Pacific has been sued in the United States by a number of mesothelioma victims who claim they were exposed to asbestos while sanding the dried compound. Bernstein's latest study, done in conjunction with Georgia-Pacific's chief toxicologist, Stewart Holm, could be good news for the company.

Bernstein is the most active of a dozen or so industry-backed scientists who have helped fuel the asbestos trade by producing papers, lecturing, and testifying on the relative safety of chrysotile. The industry has spent tens of millions of dollars funding their studies, which have been cited some 5,000 times in the medical literature as well as by lobby groups from India to Canada. Bernstein's work alone has been cited 460 times. He has been quoted or mentioned in Zimbabwe's Financial Gazette, Hong Kong's South China Morning Post and other publications around the world. His curricu-

lum vitae suggests that he's been a one-man road show for chrysotile, giving talks in 19 countries since 1999. Among his stops: Brazil, China, Colombia, India, Indonesia, Korea, Mexico, Russia, South Africa, Thailand, and Vietnam. The industry paid for all of his travel, Bernstein told ICIJ in an interview.

Indeed, all of Bernstein's work on asbestos has been underwritten by the industry, and he has become its principal defender at scientific meetings and in other venues. Bernstein says he has no idea how much all his studies have cost and emphasizes that, in any case, most of the money goes to the laboratory in Basel, Switzerland, where the animal experiments are performed. Court documents show that one sponsor, Union Carbide, paid \$400,623 for work by Bernstein in 2003 and 2005.

In an interview in his hotel lobby the day before his presentation in Salt Lake City, Bernstein said that Georgia-Pacific in no way influenced his chrysotile research, nor have any of his other corporate sponsors. "I would work for any group," Bernstein explained. "I have no limitations. Unfortunately, the groups that don't like this work don't ask me." He decried the hyperbole surrounding chrysotile — "It's a hysterical

thing; it doesn't come from science" — and said he doesn't believe the fragile white fibers cause mesothelioma. They could cause lung cancer, he said, if exposures were extremely high.

The relevance of Bernstein's rat experiments to humans is contested by fellow researchers. For example, an expert panel assembled by the U.S. Agency for Toxic Substances and Disease Registry concluded that rodents clear short asbestos fibers from their lungs about 10 times faster than do people. Bernstein's animals, moreover, were exposed over a relatively brief period of time. Many workers inhale asbestos over months or years, not days. "Not everyone exposed, even heavily, will necessarily develop disease, but data in the scientific literature show that as little as one day of exposure in man and animals can lead to mesothelioma, and a month or less of exposure in man doubles the risk of lung cancer," says Dr. Arthur Frank, a physician and professor at the Drexel University School of Public Health in Philadelphia.

If Bernstein is chrysotile's scientific ambassador, then 92-year-old J. Corbett McDonald is its longest-tenured champion. He is the author of three dozen scientific papers

on chrysotile, and his work has been cited in the medical literature nearly 1,500 times. In a telephone interview, McDonald said he was approached by the Canadian government in 1964 to study asbestos miners and millers in Quebec; he, in turn, appealed to the Quebec Asbestos Mining Association for funding, which it agreed to provide. The impetus for the research, McDonald said, was a paper by Dr. Irving Selikoff of New York's Mount Sinai School of Medicine reporting that insulation workers with relatively light exposures to asbestos were dying of mesothelioma and other cancers at strikingly high rates.

### **A Lesson from Tobacco?**

Minutes of the mining association's November 1965 meeting, obtained by lawyers for asbestos victims, suggest that the group saw the tobacco industry as a paradigm: "The consensus of opinion seemed to point out that the QAMA should take into its hands the ways and means to conduct the necessary research instead of doing it through universities or letting it fall in the hands of the Government. As an example, it was recalled that the tobacco industry launched its own program and it

now knows where it stands. Industry is always well advised to look after its own problems.”

Forty-five years later, McDonald remains resolute in his defense of asbestos. He says there is “very strong evidence” that contaminants in chrysotile, and not the chrysotile itself, caused excesses of mesothelioma among the Quebec workers. The toxic agent, he suspects, was tremolite, a type of amphibole. McDonald insists that his work was never influenced by the asbestos industry. Indeed, he wasn’t sure how much its leaders even cared about his work. “It used to worry us a bit that they took so little interest in the results,” he says.

McDonald’s tremolite theory — rebutted by studies of textile workers exposed to almost pure chrysotile, and just this year, a study of workers at a brake-lining factory — follows a pattern that Dr. David Egilman, a physician and clinical associate professor at Brown University in Providence, Rhode Island, calls ABC: anything but chrysotile. In fact, some researchers and defense lawyers have argued that mesothelioma could be triggered by a polio vaccine contaminated with a monkey virus. “Like the tobacco industry, they’ve been successful at

manipulating scientific theories to confuse the public about the real risks of using asbestos,” says Egilman, who, like Frank and Castleman, testifies on behalf of plaintiffs in asbestos lawsuits.

Bernstein’s and McDonald’s studies have proved helpful to an industry under growing pressure to disband. Amphiboles such as the virulent blue crocidolite, which killed miners in South Africa for nearly two centuries before the nation imposed a ban in 2008, are virtually never encountered today. There are obvious economic incentives, skeptics say, to blame most of the asbestos disease in the past 50 years on obscure types of the mineral and imply that chrysotile, which accounts for 95 percent of all the asbestos ever used, is relatively benign.

“Is there a legitimate scientific question as to whether white asbestos is less dangerous [than blue or brown]? Yes,” Frank says. “But is it safe? No.”

Several key criticisms have been leveled at the researchers who defend chrysotile. They tend, for example, to focus on mesothelioma — the disease that comes up most often in litigation because it is considered a marker of asbestos exposure — and ignore lung cancer, which oc-



curs more frequently. "Chrysotile is just as potent [as amphiboles] in terms of lung cancer, and it might even be more potent," says Peter Infante, former director of the Office of Standards Review at the U.S. Occupational Safety and Health Administration. They fixate on the amount of time chrysotile fibers spend in the lungs, failing to acknowledge that the fibers can do a figurative hit-and-run on cells, damaging DNA and precipitating cancer. And they buy into what WHO consultant Castleman calls the fallacy of controlled use — the idea that employers in the developing world are serious about dust suppression and ventilation.

Castleman has been researching asbestos cement substitutes — roofing and pipes made with cellulose fibers, ductile iron and fiberglass, for example — for the WHO and has determined that, at most, they cost 10 to 15 percent more to produce. By his reckoning, asbestos is not much of a bargain. "Obviously, the cost of death and disease and the eventual cost of even halfway properly managing asbestos cement structures wipes out any short-term savings of 10 to 15 percent," Castleman says. As for another industry claim — that substitute products may be more dangerous than chrysotile —

he notes, "They do not release carcinogenic dust whenever they are sawed, drilled, and demolished."

Despite the reassuring studies and the million-dollar marketing efforts, the asbestos industry faces stiffening headwinds. The number of countries imposing bans or restrictions continues to climb, and groups of health and labor activists have sprung up in China, Brazil, India, and other high-use countries. The government of Canada, long considered a leader on environmental and health matters, has come under withering attack for pushing exports.

For his part, scientist Bernstein contends that his conclusion is the correct one: White asbestos can be used safely around the world. That the WHO, the European Union, and dozens of national governments disagree doesn't bother him. "It's not in my interest whether it's the minority view or not," Bernstein says. "I've always felt that science will prevail at the end." ■

*Ana Avila in Mexico City, Dan Etinger in Washington, D.C., Murali Krishnan in New Delhi, Roman Shleykov in Moscow, and Marcelo Soares in Sao Paulo contributed to this report.*

# A Toxic Embrace

## INDIA'S WIDE USE OF ASBESTOS BRINGS DIRE WARNINGS

By Murali Krishnan and Shantanu Guha Ray

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**N**EW DELHI — Every day, the swirling waters of the Arabian Sea bring misery to Alang, the world's largest ship-breaking yard in western India's Gujarat state. An estimated 55,000 workers, unmindful of the lethal effects of asbestos-laden material in the vessels, slave for long hours and, in the process, are exposed to deadly fibers. The Indian government is aware of the risks but loath to interfere: The men need jobs, and the Indian economy, among the world's fastest-growing, needs secondary steel from the beached vessels. "Reclamation and recycling," says Pravin Nagarsheth, president of the Iron Steel Scrap and Ship Breakers Association of India (IS-SAI), "is a highly lucrative business."

One hundred-twenty miles (two hundred kilometers) north of Alang, workers at hundreds of dusty asbestos factories in the city of



**An Indian worker with a bag of asbestos at a milling unit in Udaipur, Rajasthan. Health officials say many such workers are poorly protected from the lung-ravaging fibers.**

(Credit: Sonumadhavan)



**Banned or restricted in 52 countries, asbestos use is growing quickly in developing countries like India.** (Credit: Sonumadhavan)

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Ahmedabad face similar hazards in the name of economic development: lung cancer, asbestosis, and a rapacious malignancy, usually found in the chest cavity, called mesothelioma. In this case the end product is asbestos sheet, widely used in construction.

The two locales are centers of an emerging epidemic of asbestos-related disease in India.

Valued for its heat and fire resistance, asbestos was once wide-

ly used worldwide, but it is now banned or restricted by 52 countries. Use of the mineral is banned entirely in the European Union. In the United States — where it is blamed for some 200,000 deaths and cost the industry \$70 billion in damages and litigation costs — asbestos use is limited to a handful of products, such as automobile brakes and gaskets.

But in India, asbestos use is booming.

The country is now the world's second largest asbestos market, behind only China, consuming nearly 350,000 metric tons in 2008. The industry generates more than \$850 million a year in revenue, and directly employs 300,000 people; indirectly, it supports as many as 3 million more. Backed by a powerful lobby, asbestos use in India has risen by 83 percent since 2004, according to government figures. Given evidence of poor workplace safety and weak regulations, such widespread use could prove disastrous, say health experts. One study by two New Delhi researchers suggests that by 2020 deaths from asbestos-related cancers could reach 1 million in developing nations. "The industry is using its economic and political power in a way that's allowing it totally unrestrained growth," says Barry Castleman, a U.S. environmental consultant who advises the World Health Organization on asbestos. "We can only expect untold numbers of preventable deaths to occur as a result."

According to recent estimates by the Asbestos Cement Products Manufacturers' Association (ACPMA), a New Delhi-based industry organization, the Indian asbestos market grew by more than 30 per-

cent just in the past year, primarily because of demands in the country's rural sector. "The asbestos market — despite being a health hazard — has grown because it serves the market for poor," says Gopal Krishna of the Ban Asbestos Network of India (BANI). "And that market is growing at a tremendous pace. So, nobody has the time for complaints."

### A Potent Lobby

In India, asbestos products carry no health warning labels and trade unions have no mandate to prevent asbestos-related disease at workplaces. Although researchers around the world have linked lung cancer and other diseases with exposure to the widely used white, or chrysotile, asbestos, the powerful ACPMA — funded by 12 asbestos companies as well as by the Canada-based Chrysotile Institute — concedes nothing.

"That lung cancer deaths have been caused by inhaling asbestos fiber has not been conclusively proved in India," argues John Nicodemus, the ACPMA's executive director. "This is the handiwork of groups like BANI. The government's stand on asbestos is very



**Workers at an asbestos mine in Udaipur, India, toil under dangerous conditions.** (Credit: Sonumadhavan)

clear. It has yet to receive proof of the product being a health hazard.” The ACPMA and others contend that chrysotile asbestos is less toxic than blue or brown forms of the mineral that are no longer used. Nonetheless, many health experts say chrysotile can be deadly.

Nicodemus refused to divulge details on the ACPMA’s funding. But senior government sources say it has received \$50 million since its

founding in 1985. A. Modi, president of an asbestos manufacturing company affiliated with the association, told ICLJ that ACPMA member companies contribute 2 to 3 percent of their revenue to the lobby group for “promotional activities in India that revolve around advertising promotions to counter baseless allegations by Ban Asbestos Network India [and] legal and promotional activities that [are] mostly in rural

India.” This means that at current exchange rates, the ACPMA receives the equivalent of \$8 million to \$13 million per year.

The group spends some of this money on advertorials, costing up to \$34,000 apiece, in mass-circulation Indian dailies, ostensibly to counter what it terms disinformation about the effects of asbestos. Sources say it also spends significant amounts on lobbying and training — mostly in Canada and Russia — for its staffers. Its already sizable budget is expected to increase as industry output grows — possibly to 600,000 metric tons a year — to meet demand for asbestos-sheet roofing in India’s villages.

The ACPMA’s lobbying activities were part of a detailed discussion on hazardous minerals during a spirited meeting at the Ministry of Mines in April, when demands for increased use of asbestos were opposed by a host of scientific and public interest groups.

At the meeting, officials told ICIJ, representatives of BANI and the National Institute of Miners Health argued for an asbestos ban. Representatives of asbestos companies, in turn, demanded proof that asbestos causes lung diseases and dismissed the idea of a ban.

When public health advocates produced global figures to argue their case, the industry officials replied that such figures reflected deaths in other countries and not India, where they say chrysotile use under “controlled conditions” poses little risk. But controlled use is nearly impossible to achieve in developing nations, where workplace and environmental standards are weak, experts say.

Most of the asbestos used in India comes from Russia or Canada. Despite the rapid increase in usage across India, little mention is made of the potential health effects of these imports. For example, a newly released Environmental Impact Assessment (EIA) guidance manual for asbestos-based industries — with a foreword by Indian Environment Minister Jairam Ramesh — has no details about the alarming rise in asbestos-related diseases worldwide or countries that have banned the product.

Those following the industry are not surprised. The first official records on the dangers of asbestos became public in India only in 2008 when BANI’s Krishna, then a young, unknown activist, demanded documents under the Right to Information Act — India’s freedom

of information law. But for the Indian public, reporting on asbestos remains scarce. Experts say this is primarily because both the states and union territories have no mechanism to prove that lung cancer deaths and other skin diseases are being caused by asbestos exposures. As a result, the Indian asbestos industry is insulated from the movement to ban asbestos globally.

### The Case of Gujarat Composite

The lack of official attention has dire consequences for tens of thousands of workers likely to succumb to asbestos-related diseases, health experts warn. At just one company in Ahmedabad — Gujarat Composite Ltd. — at least 75 workers have been diagnosed with lung cancer in the past 10 years, out of a workforce of about 1,000, according to NGO activists in Ahmedabad working on asbestos-related diseases. At least 20 of those have died, they say. “No one listened to our repeated complaints of breathing troubles and skin irritation,” says Rues Muthuswami Munian, who has suffered from the disease for nearly a decade. He and other sick workers say they were fired by the company and offered virtually no compensa-

tion, prompting them to file a complaint with the local police over conditions at the company. Shorn of funds, they are dependent on monthly handouts by a few NGOs.

Representatives of Gujarat Composite are the target of four criminal complaints brought by the state Labour and Employment Department in March this year. The complaints accuse the company of a lack of safety records, failure to conduct medical exams of workers, and refusal to provide inspectors with a registry of its workers. “There were no records kept of the fibers floating in the atmosphere,” reads one complaint. Gujarat Composite officials declined repeated requests by ICIJ for an interview.

U.S.-based Johns Manville held a stake in the 48-year-old factory when it was called Shree Digvijay Cement Co. and expressed dismay about its hygiene decades ago, according to documents obtained by ICIJ. In a confidential 1977 memorandum, for example, a Johns Manville official wrote, “The Indian Government Environmental Division has been recently tightening dust emissions and Shree has been told to either shape up or close down with their management liable for jail sentences. Their present op-

eration is just indescribably poor. The wet end of the pipe machines is like ‘London fog’ with fiber floating all over from the fiber bins.” Johns Manville held 10 percent of Shree Digvijay’s stock until at least 1983.

In 1997, about a year after it acquired the factory, Gujarat Composite began subcontracting with two privately owned companies. “The saddest part of the story is this: the state government knows what is happening, yet no action has been taken on these two companies,” says Raghunath Manwar of the Ahmedabad-based Occupational Health and Safety Association (OHSA), which advocates for asbestos victims.

“The environment is lethal,” says Dheemant Badia, an OHSA trustee. “These workers work in a death zone because there is no practice of measurement of airborne asbestos-fiber dust.” Gujarat’s Directorate of Industrial Safety and Health has routinely received complaints about Gujarat Composite but, say critics, has turned a blind eye.

## Nascent Debate

Efforts to ban asbestos at the national level have gone nowhere. The White Asbestos (Ban on Use and

Import) Bill of 2009 — introduced in the Upper House of Parliament (Rajya Sabha) by Vijay Jawaharlal Darda, a member from India’s western Maharashtra state — drew flak from influential Congress Member of Parliament T. Subbarami Reddy, an industrialist and chairman of the Parliamentary Standing Committee on Science and Technology, Environment, and Forests.

“I will object to the ban,” Subbarami said. “For the last four decades, white asbestos is being used in several parts of the country.” His objection was overruled by the vice-chairman of the Rajya Sabha, P. J. Kurien. The bill is pending in the Upper House, but observers give it little chance of passage.

At least one Indian state has taken matters into its own hands. In January 2009, the Kerala State Human Rights Commission prohibited the use of asbestos-sheet roofing for school buildings. But in the majority of Indian states and territories, asbestos is considered an essential ingredient of growth. In India’s southern Andhra Pradesh state, a pro-asbestos agenda is being pushed by one of its MPs, Gaddam Vivekanand, who reportedly controls 25 percent of India’s asbestos production through his



ownership of seven factories across the country. An eighth will open this year in eastern Orissa state.

The ubiquitous nature of the fiber is best demonstrated in western Maharashtra state, filled with asbestos factories in places such as Mumbai, Pune, and Kolhapur. The Maharashtra Pollution Control Board acknowledges in its annual reports the mounting number of lung diseases in the state. But it has taken no action to make the state asbestos-free.

Beneath the growing debate, note some experts, lies the fact that India remains a country where an estimated 450 million people live below a government-stipulated poverty line. In such an environment, the chances of factories maintaining proper safety and health standards may be dim indeed. Castleman, the environmental consultant, says it is reasonable to expect hundreds of thousands of asbestos-



**An asbestos mine worker in Andhra Pradesh, India. Use of the toxic mineral in construction materials is increasing rapidly.** (Credit: Sonumadhavan)

related deaths before India reacts. “I’m hard-pressed to point to any sign of success that activists and public health people have had over there,” he says.

Asha Gupta, a lawyer who represents asbestos victims in Gujarat state, says that companies at least need to provide safety gear to those working in such hazardous conditions. “Otherwise, workers will continue to fall sick and, eventually, die a slow, painful death.” ■

*Abhishek Upadhyay contributed to this report.*

# The Brockovich of Brazil

## FERNANDA GIANNASI FIGHTS A POTENT ASBESTOS INDUSTRY

By Jim Morris

International Consortium of Investigative Journalists

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**S**ÃO PAULO — Inching along at rush hour in her battered black Chevrolet Corsa, Fernanda Giannasi joked about the pariah status she's attained with the Brazilian asbestos industry. "I have no name," she said. "I'm just 'That woman.'"

No wonder. Giannasi, an inspector with the federal Ministry of Labor and Employment, has been trying to shut down the industry for the past quarter-century. She says that white asbestos — mined in the central Brazilian state of Goiás, turned into cement and other domestic products and increasingly sent abroad — has taken countless lives and will take countless more unless it is banned nationwide. The idea that it can be used safely, she says, is "a fiction."

The 52-year-old Giannasi has



**During an inspection in Sao Paulo, Fernanda Giannasi tells a business owner that she must dispose of illegal asbestos products.** (Credit: Felipe Lima)

many admirers in the global public health community. One local doctor calls her the "Brockovich of Brazil," a nod to Erin Brockovich, the California file clerk who blew the whistle on water pollution by

Pacific Gas & Electric and inspired a feature film. Giannasi's true constituency, however, lies in places like Osasco, a graffiti-scarred, blue-collar city west of São Paulo and home to Brazil's most notorious asbestos cement factory for 54 years.

The factory, owned by a company called Eternit, opened in 1939 and was, for most of its existence, thick with asbestos fibers, former workers say. Eliezer João de Souza, 68, worked there from 1968 to 1981, cutting asbestos sheets and corrugated tiles into various sizes. "It was full of dust everywhere," de Souza says. "You could see it through the sunlight." Workers had no respiratory protection until 1977, when they were given cheap paper masks, says de Souza, who had small tumors removed from his pleura — the thin membrane that covers the lungs and lines the chest cavity — in 2000. At one point "they called the workers in and took X-rays, but they never showed us the results," he says. "It was always a game of lies."

João Batista Momi, 81, spent 32 years at the plant — "It was dirty the whole time," he says — and developed asbestosis. He sued his former employer in 1998 and won but, because of a company appeal languishing in the Brazilian Supreme Court,

has yet to receive any compensation. José Antonio Domingues, 71, had his cancerous right lung removed in 2008, 17 years after he left the plant. He had worked there for 15 years. "It was black inside," he says. "I'm happy I'm still alive."

## A Top User and Exporter

The three men belong to the Associação Brasileira dos Expostos ao Amianto (ABREA) — the Brazilian Association of People Exposed to Asbestos. It is one of more than 70 victims' groups that have formed around the world, mostly in the past two decades, as the use of asbestos has spread to fast-growing countries and its dangers have become better known. Once widely used in the U.S. and Europe for construction materials and insulation, asbestos is now banned in the European Union and limited to a handful of products, such as automobile brake linings, in the United States. Fifty-two countries have banned or sharply restricted use of the fibrous mineral, long valued for its heat and fire resistance.

Fueled by an aggressive industry campaign, however, the use of chrysotile, or white, asbestos use has grown markedly in the developing world, led by such countries as

China, India, and Brazil. With the mineral's new life in emerging markets, the cumulative death toll from asbestos may reach 10 million by 2030, experts say.

Thousands of those deaths are expected in Brazil, now the world's third-biggest producer of asbestos. Brazil is also the world's third largest exporter — shipping mainly to Asia as well as to countries like Colombia and Mexico. And it is the world's fifth largest user, consuming 94,000 metric tons in 2007 — more than 50 times the amount used in the United States that year. The Brazilian asbestos industry claims to generate 2.5 billion reais — about \$1.3 billion — for the nation's economy each year. The 11 companies that mine asbestos and make asbestos-containing products in Brazil directly employ 3,500 but say they account for 200,000 jobs when one includes construction workers, dealers, and others.

At the heart of the industry is the Brazilian Chrysotile Institute. Public records show that the institute, based in Goiás, has taken in more than \$8

million from the industry since 2006, funding used to promote asbestos use across Brazil. A prosecutor in the state is seeking dissolution of the institute, a self-described public interest group with tax-exempt status. The prosecutor charges in a court pleading that the institute is a poorly disguised shell for the Brazilian



**Asbestos gaskets at a small Sao Paulo business. The label reads: “Caution! This product contains asbestos. Do not breathe asbestos dust. The danger is highest for smokers.”** (Credit: Felipe Lima)

asbestos industry, which provides virtually all of its budget. Having inflicted “social damage stemming from [its] illegal practices,” the institute should pay 1 million reais (about US\$550,000) in damages and a fine of 5,000 reais (US\$2,800) for every day

it remains open, the pleading says. In a statement to the International Consortium of Investigative Journalists, a spokesman for the institute denied the allegations, saying the group “ensures the health and security of workers and users, protection of the environment and [providing of] information to society.”

### **Eternit and “The Bill Gates of Switzerland”**

When ABREA was formed in 1995, it had about 470 members, mostly from the Eternit plant in Osasco. “At least 30 percent have died in the last 14 years,” says its president, de Souza. At least 10 have died of mesothelioma, a rare cancer that often starts in the pleura and is virtually always tied to asbestos exposure. The factory relied mainly on white asbestos, Giannasi says, though it also may have used “very small amounts” of blue into the mid-1960s. Industry representatives and some scientists maintain that blue and brown asbestos — no longer mined or used — are more lethal than white, a position disputed by many health experts.

Fuming about what they believe to have been gross corporate misconduct, de Souza and his fellow retirees are following a criminal tri-

al in Turin, Italy, where two former shareholders in the Swiss Eternit Group — including onetime chairman Stephan Schmidheiny, a philanthropist dubbed “The Bill Gates of Switzerland” by Forbes magazine for his billion-dollar commitment to poor entrepreneurs in Latin America — stand accused of precipitating an environmental disaster. The charges stem from conditions at an Eternit asbestos cement factory in the Italian town of Casale Monferrato; some 2,000 people who worked in or lived near the plant have died of asbestos-related diseases. “Considering that hazardous exposures experienced in Italy were replicated elsewhere, there must be hundreds of thousands of people who have died from their exposures to this company’s asbestos products,” says Laurie Kazan-Allen, coordinator of the International Ban Asbestos Secretariat in London.

In an e-mail, spokesman Peter Schuermann wrote that Schmidheiny “cannot understand why he should be made responsible for the entire 80-year history of the Italian Eternit as one of the main defendants.” The Swiss Eternit Group was the biggest shareholder in the Italian plant for only its last 10 years, Schuermann wrote, and implemented “workplace safety mea-

tures which were in accordance with the highest standards.” According to Schuermann, the Swiss group sold its shares in the Osasco plant more than 25 years ago. He declined to comment on the ex-workers’ allegations but noted that “Stephan Schmidheiny himself worked as a trainee in the Brazilian Eternit under the same working conditions as the other employees.”

Giannasi has little sympathy for Schmidheiny, who claims on his own website that he was “dangerously exposed to asbestos fibers during my training period in Brazil.” Her disgust with the running of the Osasco plant motivated her to co-found ABREA. She continues to attend its monthly meetings, keeping the ailing members and their families apprised of developments in the asbestos wars. They seem to relish her stories: She’s held up asbestos shipments at ports and on highways and barged into businesses suspected of illegally selling asbestos products. She’s received death threats and been sued by the asbestos industry. For a time she was exiled to a tiny office at the Labor Ministry with no computer, no telephone and no responsibilities. She routinely defies her bosses, who view her as a headline-seeking provocateur; they’ve

restricted her inspection activities to São Paulo state even though she is a federal official. “Every day is a problem,” Giannasi says.

The Brazilian asbestos industry has proved to be a fierce opponent. SAMA, which operates the Cana Brava mine in Goiás, and Eternit S.A., which operates four plants that make asbestos and non-asbestos roof sheets and other products, collectively gave more than 2 million reais (US\$1.1 million) to federal, state, and local candidates from 2002 to 2008, records show. “They have many tentacles, like an octopus,” Giannasi says. Only four of Brazil’s 26 states, including São Paulo, have enacted asbestos bans. Asked about Giannasi’s campaign, a SAMA official addressed only the company’s own processes, saying fiber levels at the mine are “20 times lower than what the law requires” and that “workers have no physical contact with the mineral.” A spokeswoman for Eternit S.A., which has no connection to the Swiss Eternit Group, declined to comment.

### **Giannasi vs. Asbestos, Inc.**

Raised during Brazil’s right-wing military dictatorship in the 1960s, Giannasi recalls hearing the

screams of accused subversives being tortured at the army headquarters across from her family's house in northeastern São Paulo state. The repression that defined that era and the progressive leanings of her parents, both public school teachers, steered Giannasi to her eventual role as an advocate for workers with asbestos-related diseases, whom she compares to genocide victims. She made her first visit to the Eternit plant in Osasco in 1986, judging its hygiene to be poor and its medical records inadequate. By 1991 she had inspected hundreds of other dusty plants and concluded that controlled use of asbestos was impossible. She was transferred from São Paulo to Osasco — “a place for troublemakers” — where she promptly made trouble for Eternit, halting the demolition of its factory in 1995 until a plan was in place to contain decades of asbestos waste. By 1998 she was a nationally known activist, referring to the asbestos industry as a “mafia” and accusing it of “blackmailing” sick workers



**Fernanda Giannasi, second from left, and anti-asbestos activist Laurie Kazan-Allen, third from left, lead retired workers from the now-demolished Eternit asbestos cement plant in Osasco, Brazil, in a moment of silence for those who have died.** (Credit: Felipe Lima)

with paltry settlement offers. Eternit sued her for defamation, but a judge threw the case out.

The years since have been marked by sporadic conflicts with the industry and her own ministry, and disappointment with the administration of President Luiz Inácio Lula da Silva, a former union leader. Asbestos production in Brazil fell during the early 1990s and then gradually increased until 2002, when Lula was elected. In the years since, production has accelerated. Giannasi made her displeasure known and in early

2004 was stripped of her inspection duties for 45 days. Her authority was restored only after she went to the press, she says. Giannasi today seems close to exhaustion, her frenetic pace unsustainable. Her ultimate aim — a federal ban on asbestos — appears out of reach.

Still, “the situation here would be far worse if she wasn’t working on it,” says Dr. Eduardo Algranti, chief of the division of medicine at Fundacentro, a São Paulo foundation that helps sick workers. “She’s very tough, very consistent in her actions. She’s absolutely committed.”

### “A Mesothelioma Time Bomb”

Dr. Ubiratan de Paula Santos, a pulmonologist at the University of São Paulo Medical School, says he sees about 20 cases of mesothelioma a year, a number that has been slowly climbing. Most, but not all, of his patients were asbestos workers; one woman developed mesothelioma after sanding and painting her asbestos tile roof for Christmas over a period of years. “It’s not important how intense the exposure is,” de Paula Santos says. “Some people were exposed only for one month.” On average, victims survive 12 to 16 months after diagnosis, enduring extreme

pain and the terrible knowledge that their condition is incurable. “They know they have their necks in the guillotine,” the doctor says.

It’s for these people that Giannasi forges ahead. Last fall she allowed an ICIJ reporter to accompany her and a colleague, Antonio Carlos Rodrigues Pimentel, on surprise inspections of two gasket shops in São Paulo alleged to be selling asbestos products in violation of state law. At the first shop, on the northern fringe of the city, she and Pimentel were met by a scowling, pot-bellied man who tried to deny them entry. Giannasi held up her government badge and demanded to be buzzed in. Once admitted, she and Pimentel quickly found asbestos gaskets scattered among the shop’s inventory. Defiant at first, the shop’s owner grew deferential when Giannasi threatened to close the place unless every shred of the toxic mineral was thrown out. The owner promised to comply and ordered her workers to begin rounding up the prohibited items. “They all follow the same script: ‘We don’t use asbestos, we disposed of it.’” Giannasi says. “You always find something.”

Four days earlier, Giannasi had traveled in an unofficial capac-



ity with Pimentel and Kazan-Allen, the anti-asbestos activist, to Poços de Caldas, a city in the mountains about 150 miles north of São Paulo. The American aluminum giant Alcoa, which has operated a plant there since 1970, had just been hit with its first mesothelioma lawsuit in Brazil, filed by a 58-year-old former employee.

**“Brazil is at the beginning of a very big curve. A mesothelioma time bomb is about to go off.”**

The case had caused something of a scandal in the company town, but Giannasi saw it as an opportunity to take her message to a new audience in Minas

Gerais, a state in which she is forbidden to inspect. Having contacted the local media, she appeared at the town hall on a Friday afternoon and gave her standard presentation with evangelical fervor, showing slides of dying cancer victims, handing out brochures on the dangers of asbestos, and conducting an impromptu hallway news conference. Kazan-Allen stepped up to the microphone and warned that “Brazil is at the beginning of a very big curve. A mesothelioma time bomb is about to go off.”

That evening, Giannasi visited the former Alcoa worker, Dante Untura, at his home. Untura had performed maintenance at the factory, which makes aluminum powder, ingots and other items, from 1970 to 1987. He had cut and drilled sheets of Marinite insulation, which likely contained brown asbestos and was made in the United States by Johns Manville Corp. “We had no masks,” Untura said. He was diagnosed with mesothelioma in August 2009; after this, he said, “Everything changed. I lost track of life. There’s no more color. It’s all gray.”

On this warm night in mid-November, Untura did not look especially ill or seem to be in pain. His house was decorated for Christmas. His partner and stepdaughter served coffee and cake and tried hard to pretend that nothing was wrong. Untura became emotional only when discussing his family; it was for them, he said, that he had sued Alcoa in Brazil and was planning to sue in an American court.

The U.S. case was filed on Jan. 20. Seventeen days later, Untura was dead. Alcoa declined to comment on his lawsuit. ■

*Marcelo Soares in Sao Paulo contributed to this report.*

# America's Asbestos Age

## A TOXIC LEGACY MAY LEAVE BEHIND A HALF-MILLION DEATHS

By Jim Morris

International Consortium of Investigative Journalists

Published Online | June 28, 2010

**W**ASHINGTON, D.C. — The first sign of trouble came as Bill Rogers was mowing his lawn one morning in January 2007. “As I would go back and forth with the mower, I would run out of air,” says Rogers, 67, of Palm Bay, Fla.

Rogers went to the doctor and learned that his right lung was full of fluid. Three days later he was diagnosed with mesothelioma, a lethal tumor that occurs in the lining of the chest or the abdomen and is almost always associated with asbestos exposure. “I’d heard of it, but I didn’t really know what it was,” he says. “They told me it’s not a good cancer to get.”

That Rogers is alive more than



**“As I would go back and forth with the mower, I would run out of air.”**

**— Bill Rogers**

three years after his diagnosis is something of a miracle. To him, the source of his illness is clear: He worked on or around asbestos-containing automobile brakes, mostly at General Motors dealerships, for 44 years. He and his co-workers had used compressed-air hoses to clean out brake drums, where debris from worn asbestos brake shoes would collect, and had filed and sanded the shoes when installing new brakes. Although he routinely wore a respirator

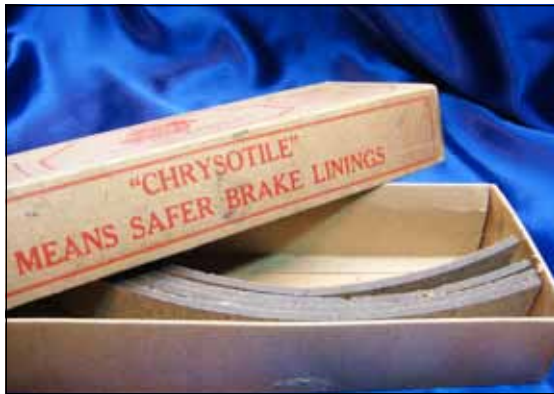
while sanding plastic filler during body work, he says, no one ever told him he needed one for brake work.

Rogers sued GM, Ford, Chrysler, and seven manufacturers and suppliers of brakes and clutches in 2008

and settled with the last of them in 2009. He is among hundreds of former mechanics and body shop employees known to have developed mesothelioma after working on brakes, clutches and gaskets, which contained the most common form of the mineral — chrysotile, or white, asbestos — well into the 1990s. Many have sued auto manufacturers and parts makers, litigation that reflects the unceasing burden of asbestos disease in the United States.

Asbestos has decimated the ranks of miners, millers, factory workers, insulators and shipyard workers, some of whom began filing workers' compensation claims as far back as the 1930s. The modern era of asbestos lawsuits began the 1970s with claims from these same groups of workers. Many took in massive doses of fiber and died of diseases such as asbestosis, which can develop within a decade of initial exposure. Some of the cases involved mixtures of amosite, or brown, asbestos, which is no longer used, and chrysotile.

In court now, aside from a few heavily exposed workers, are mechanics, teachers from asbestos-filled schools, and wives and children of workers who brought home asbestos on their clothing. Most of these people had relatively light



**Hundreds of former mechanics exposed to chrysotile, or white, asbestos dust from brake linings have sued auto and parts manufacturers, alleging the toxic fibers gave them mesothelioma, a virulent form of cancer.** (Credit: Flickr user Asbestorama)

exposures and developed mesothelioma, a disease that can take 30, 40 or even 50 years to appear.

Although asbestos use in the U.S. plummeted from a peak of 803,000 metric tons in 1973 to just 1,460 met-

ric tons in 2008, the nation's epidemic is far from over. As many as 10,000 Americans still die of asbestos-related diseases each year; one expert estimates that 300,000 or so will die within the next three decades.

## A Mounting Toll

Once broadly utilized by U.S. industry — not only in brakes but also in construction, insulation and shipbuilding — asbestos was heralded for its remarkable resistance to fire and heat. Strong and inexpensive, the naturally occurring, fibrous mineral acquired a darker reputation in the 1960s as its health effects became widely known. Internal documents showing corporate knowledge of the mineral's carcinogenic properties began to surface, and by 1981 more than 200 companies and insurers had been sued. The following year, the nation's biggest maker of asbestos products — Johns Manville Corp. — filed for bankruptcy protection in an effort to hold off the tide of litigation. From the early 1970s through 2002, more than 730,000 people filed asbestos claims, resulting in costs to the industry of about \$70 billion, according to a 2005 study by the RAND Corp. Of this amount, about \$49 billion went to victims and their

lawyers, and \$21 billion went toward other legal costs.

Asbestos use has largely moved overseas, fueled by an aggressive industry campaign that has pushed up chrysotile consumption in fast-growing countries like China, Brazil, and India. Banned or restricted in 52 countries, asbestos products can still be sold in the U.S. but are largely limited to auto and aircraft brakes and gaskets. China, the world's leading consumer, used 626,000 metric tons of asbestos in 2007 — 350 times the amount used in America that year.

The decline in usage in the U.S., however, has done little for those already exposed — and for those who continue to be at risk. Long latency periods for mesothelioma and lung cancer ensure that there will be victims for years to come, health experts say. Last year, the Centers for Disease Control and Prevention reported that 18,068 Americans died of mesothelioma from 1999 through 2005, with the annual toll edging toward 3,000. Another 1,500 or so die

**Long latency periods for mesothelioma and lung cancer ensure that there will be victims for years to come.**

each year of asbestosis, a rate that has “apparently plateaued,” according to the CDC. The number of asbestos-related lung cancer deaths is harder to pin down given the ubiquity of smoking, but could be as high as 8,000 per year. Dr. Richard Lemen, a former assistant U.S. surgeon general who consults for plaintiffs in asbestos cases, has cited estimates of 189,000 to 231,000 worker deaths from all asbestos-related diseases from 1980 to 2007. “Another 270,000 to 330,000 deaths are expected to occur over the next 30 years,” he told a Senate committee in 2007.

If Lemen’s figures are correct, that would put the death toll from America’s asbestos age at a half-million people. In its 2005 study, RAND similarly projected 432,465 asbestos-related cancer deaths from 1965 through 2029; this number excludes fatal cases of asbestosis.

The U.S. Environmental Protection Agency tried to ban asbestos in 1989 but was stopped by an industry lawsuit. Legislation to impose a ban has failed to pass since Sen. Patty Murray, D-Wash, introduced it in 2002. Murray has pointed out that imported asbestos brakes are still being sold for older vehicles, putting both professional mechanics

and weekend tinkerers at risk, and that asbestos can be found in a variety of items. Laboratory tests commissioned by the Asbestos Disease Awareness Organization (ADAO), a victims’ advocacy group, have revealed the presence of asbestos in products as diverse as window glazing made in the U.S. and a toy fingerprinting kit made in China. ADAO’s CEO, Linda Reinstein, says she is hopeful that proposed revisions to the notoriously weak Toxic Substances Control Act of 1976 would close loopholes that allowed the 1989 ban to be overturned.

Experts say that the current U.S. workplace standard for asbestos — 0.1 fibers per cubic centimeter of air, adopted by the Occupational Safety and Health Administration (OSHA) in 1994 — still allows a worker to inhale more than 1 million fibers over the course of a day. The National Institute for Occupational Safety and Health (NIOSH) estimates that exposures at this level will produce five lung cancer deaths and two asbestosis deaths for every 1,000 workers exposed over a lifetime. Federal officials believe that 1.3 million workers in general industry and construction and 45,000 miners are still exposed to asbestos.

## \$43 Million of Pro-Industry Science

Mindful of their potential liability on brake linings, GM, Ford and Chrysler have fought the current round of mesothelioma lawsuits with vigor. Court records show that the three have paid nearly \$43 million since 2001 to scientific experts at two consulting firms — ChemRisk and Exponent — who have testified that the amounts of chrysotile fibers released from the handling of brake shoes (used in older drum brakes) and pads (used in newer disc brakes) were either harmless or in insufficient quantities to cause disease.

Several of these experts — most notably Dennis Paustenbach, president of ChemRisk and former vice president of Exponent — have published papers in peer-reviewed journals concluding that brake mechanics are not at increased risk of developing mesothelioma or lung cancer. The papers are offered as evidence by defendants seeking to avoid financial blows like the \$15

million verdict returned against Ford by a Baltimore jury on April 28. In that case, Joan Dixon, a 68-year-old grandmother, died of mesothelioma after washing her husband's asbestos-coated work clothes for 14 years. Her husband, Bernard, had done part-time brake



**Dennis Paustenbach**

work in a garage that specialized in Ford vehicles. A ChemRisk toxicologist, Brent Finley, was a defense expert in the case. A Ford spokeswoman declined to comment on the verdict.

In a separate amicus brief filed with the Michigan Supreme Court in 2007, more than 50 physicians and

scientists took aim at industry consultants retained in the brake litigation. “It is in no way surprising that the experts and papers financed by these manufacturers conclude that asbestos in brakes can never cause mesothelioma,” the brief says.

The brief contends that Paustenbach's work on asbestos follows a “business model” under which he publishes exculpatory papers on compounds — such as hexavalent chromium, the groundwater pol-

lutant at the center of the Erin Brockovich case in California — that are the subject of lawsuits. Paustenbach strongly denies the charge. Records show that his firm, ChemRisk, was paid almost \$12 million by the three automakers from 2001 to 2009.

In an e-mailed statement, Paustenbach maintained that he is an impartial scientist and pointed to a pair of studies on radiation and an industrial chemical in which he delivered bad news to his funders. “Our thorough and independent research and analysis stand on their own merits,” he wrote of his work on asbestos, “and there has been no specific credible challenge to the conclusions we drew.”

A scientist with Exponent, which received \$31 million from the automakers, agreed with Paustenbach. Epidemiological studies “have shown quite convincingly that neither lung cancer nor mesothelioma risks are increased among workers engaged in automotive, including brake, repair,”



**Johns Manville Corp., once the largest U.S. asbestos manufacturer, filed for bankruptcy in 1982 to shield itself from looming lawsuits.** (Credit: Flickr user smaedli)

Dr. Suresh Moolgavkar wrote in a statement.

Ford said in a statement that the “vast majority of money” it has spent on consultants like ChemRisk “is directly related to expert costs incurred in defending the Company against meritless lawsuits ...

and is not related to the funding of scientific studies.” A spokesman for Chrysler declined to comment; a GM spokesman did not respond to requests for comment.

## Sixty Years of Warnings

Government warnings about asbestos in brakes go back decades and remain in effect. As long ago as 1948, a National Safety Council newsletter cautioned, “Asbestos used in the formulation of brake lining is a potentially harmful compound.” A bulletin issued by NIOSH in 1975 warned that brake work could produce “significant exposures” to asbestos and recommended that employers put dust-control measures in place; nearly one million workers were at risk, the institute said. NIOSH held meetings on the subject in 1975 and 1976; among those present were representatives of Ford, GM and Johns Manville, then the nation’s biggest manufacturer of asbestos products.

The message never filtered down to people like Bill Rogers. “There were no warning labels on the [brake shoe] boxes that said it was harmful to you,” he says. “Nobody ever seemed to talk about it.” Gary DiMuzio, a lawyer who has represent-

ed about 200 mesothelioma victims, says that the automakers and brake lining manufacturers did not give mechanics and vehicle owners “a realistic appraisal of the risks they were facing and how to minimize those risks.” Techniques to limit asbestos exposure — ventilation, the use of water to curb dust — were “widely discussed in the 1930s,” DiMuzio says. “It wasn’t rocket science. This was basic engineering and they just didn’t want to do it.” No warnings appeared on brake products until well into the 1970s, he adds, “and those warnings were inadequate.”

As a mesothelioma sufferer, Rogers is doing well. The tumor appears to be contained. Still, he says, “The thought of having cancer and knowing there’s no cure for it works on your mind.”

Mesothelioma “sort of creeps and crawls,” creating a sense of gradual suffocation, says Dr. Alice Boylan, a critical care specialist at the Medical University of South Carolina. The average life expectancy for a victim after diagnosis is nine months to year, a sobering statistic for someone conditioned to save lives. “It’s really wrenching,” Boylan says. “You can help people die to some degree, but not to save one person is pretty hard.” ■



# The World's Asbestos Behemoth

VAST AMOUNTS SHIPPED OVERSEAS, USED AT HOME

By Roman Shleynov

International Consortium of Investigative Journalists

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**M**OSCOW — In the aptly named city of Asbest, in the Ural Mountains 900 miles (1500 km) northeast of Moscow, the dominance of Russia's asbestos industry — the world's largest — is on clear display. Just east of the city is the massive open-pit Ural-asbest mine. At seven miles (11 km) long and 1½ miles (2.5 km) wide, it is nearly half the size of Manhattan — and more than a thousand feet (300 meters) deep. Nearly half a million metric tons of asbestos are gouged from the mine each year.

Seventy thousand people live in Asbest, once known as “the dying city” for its extraordinary rates of lung cancer and other asbestos-related diseases. But Uralasbest does not appear to have suffered any loss of status. It and other Russian asbestos producers operate with the swagger

that comes from unwavering government support. Controversy bypasses them, perhaps in no small measure because Prime Minister Vladimir Putin is their ally. Nothing, it seems, is allowed to interfere with an industry that employs 400,000 people and, along with its counterpart in neighboring Kazakhstan, generates at least \$800 million a year.

“We feel the absolute support of the state,” Denis Nikitin, a spokesman for Russia's asbestos lobby group, the Chrysotile Association, told the International Consortium of Investigative Journalists. “The only way to remove our cheap and available product from the market is to ban it.”

Ban or restrict asbestos is, in fact, what 52 countries have already done. Once widely valued for its heat and fire resistance, asbestos can no

longer be sold in the European Union. In the United States — where the mineral already has taken an estimated 200,000 lives and the industry has paid out \$70 billion in damages and litigation costs — asbestos use is limited to a handful of products, such as automobile brakes and gaskets. Fueled by an aggressive industry campaign, however, asbestos use has grown markedly elsewhere in the world, led by

such countries as China, India, and Russia. With its new life in emerging markets, the cumulative death toll from asbestos may reach 10 million by 2030, according to Dr. James Leigh, director of the Centre for Occupational and Environmental Health at the Sydney School of Public Health in Australia.

In Russia alone, the annual death toll is estimated at 10,400, according to the Geneva-based International Labor Organization. But that hasn't influenced production.



**The 19th Century beginnings of a massive open pit asbestos mine near what would become the Russian city of Asbest. The mine would grow to become nearly half the size of Manhattan.**

(Credit: History Museum, City of Asbest)

In 2008, Russian mines yielded more than 1 million tons of asbestos — nearly half the world supply and more than three times that of the next largest producer, China. Russia is also, by far, the world's largest exporter of the toxic mineral, shipping two-thirds of its supply overseas — pouring into world markets more asbestos than the next four top exporting countries combined. Its leading customers: Thailand, China, and India, followed by Indonesia, Vietnam, and Iran.

Unlike another major exporter, Canada, which uses relatively little asbestos at home but ships huge quantities abroad, the Russians remain heavy users. Indeed, Russia is the world's third largest consumer, behind only China and India, using asbestos widely in roofing, automobile brakes, and insulation. Nearly 60,000 miles (95,000 km) of the country's water pipes are lined with asbestos cement. All told, some 3,000 asbestos-containing products have been deemed safe by the Chief Sanitary Officer of Russia, Nikitin says.

In April 2009, Prime Minister Putin met with a group of labor leaders, including Andrei Kholzakov, chairman of the Uralasbest union and the International Trade Unions Alliance for Chrysotile (named after chrysotile, the form of asbestos widely used today). Kholzakov shared his growing concern about a growing global anti-asbestos movement and asked for Putin's help. The prime minister was receptive. "He promised to support Russian producers of chrysotile, especially in situations where we find ourselves under political pressure at the international level," Kholzakov said afterward in a press release. "If we behave irresponsibly our opponents will certainly use the situation," Pu-

tin is quoted as saying. "It goes without saying."

### Little Opposition

In Russia, anti-asbestos sentiment is muted at best. The few opposition groups are outmuscled by the Chrysotile Association, which boasts of backing from an alliance of workers — "For Chrysotile" — that claims 12 million members in more than a dozen countries, including Russia, China, India, Brazil, and Canada. The alliance, according to the Chrysotile Association's website, "represents the interests of its members in government agencies at all levels and in international associations, and informs the public and mass-media about scientific research on chrysotile asbestos."

The Chrysotile Association is part of an international network of industry groups that promotes the "controlled" use of asbestos despite strong evidence of the fibrous mineral's toxicity. The network's message, as voiced by Nikitin, is consistent: chrysotile, or white, asbestos, is less dangerous than other forms and may be even safer than some substitute materials.

Olga Speranskaya, a leader of the Russian environmental group Eco-

Accord, believes that controlled use is “a myth.” Says Speranskaya: “If it is safe, why do you need to control it?” In 2008, Eco-Accord and other non-governmental organizations released a survey of the chrysotile industry in Russia, Ukraine, and Kazakhstan, concluding that all forms of asbestos are dangerous and condemning industry officials for keeping the compound from being listed under Annex III of the Rotterdam Convention, a treaty that requires exporters of hazardous substances to use clear labeling and warn importers of any restrictions or bans. The survey also decried the lack of research into asbestos-related diseases in Russia.

“I think it is useless to continue arguing,” Speranskaya wrote in an e-mail to ICLJ. “The important thing to do is to give people the opportunity to examine the situation themselves.”

### A Murky Business

Ownership of the biggest asbestos producers in Russia — Orenburg Minerals — and in neighboring Kazakhstan — Kostanai Minerals — is difficult to determine. Orenburg Minerals is now Russia’s biggest producer (followed by Uralasbest), scraping more than a half-million tons of chrysotile a year from the

Kiembraevskoe deposit, near the Kazakhstan border. Mined since 1979, the deposit holds about 25 million tons of asbestos, enough for at least 50 years of production.

Kostanai Minerals produced 230,000 tons of chrysotile in 2007. It has tapped the world’s fifth-largest asbestos deposit, Djetygarinskoe, since 1965. The deposit, in northern Kazakhstan, holds 37 million tons of chrysotile.

Both producers were managed by a British firm, United Minerals Group Limited, starting in 2003, according to a Kostanai Minerals investors report. The firm’s name changed to Eurasia FM Consulting Ltd. in 2005, but it is unclear whether Eurasia still manages the two operations. In 2004, United Minerals controlled 30 percent of the world chrysotile market.

A Cyprus-based company, UniCredit Securities International Ltd. — part of UniCredit, one of the world’s largest banking groups, with 10,000 branches in 50 countries — holds stakes in both Orenburg Minerals and Kostanai Minerals “on behalf of undisclosed clients,” UniCredit spokesman Andrea Morawski told ICLJ in an e-mail. Morawski emphasized, however, “We don’t exert any control over [Orenburg Minerals or Kostanai Min-

erals] nor are we beneficiaries of the stakes held. As far as we are reasonably aware, we have not been beneficiaries of any fee/profit deriving from asbestos activities.”

Online profiles of one former and one active executive of Eurasia, available on LinkedIn, say the company is an “investment subsidiary” of Kazakhstan’s BTA Bank, which is at the center of a political scandal. The government of Kazakhstan took control of the bank in February 2009; the following month, a criminal investigation was opened against its former owner, Mukhtar Ablyazov, who was accused of embezzlement. Ablyazov, who had been an official in the Kazakhstan government, fled to London. He told *Vedomosti*, a Russian business newspaper, that the criminal case was politically motivated. Before the investigation began, he said, Kazakhstan President Nursultan Nazarbayev demanded that half the ownership in the bank be transferred to his trustee. Nazarbayev’s press secretary declined to comment on the situation.

Kostanai Minerals has received backing from state-controlled banks in both Russia and Kazakhstan. In March 2008, the Russian Sberbank gave the company a \$3.6 million loan. In 2007, Kostanai Minerals re-

ceived a \$2.9 million loan from the Development Bank of Kazakhstan.

Officials with Orenburg Minerals and Kostanai Minerals did not respond to ICIJ interview requests. A spokesman for BTA Bank called Eurasia a “client” of the bank and declined further comment.

Registered in the English city of Leeds, Eurasia lists only one shareholder — PL Company Nominees Ltd. Eurasia and PL Company share the same address in Leeds. The founder of PL Company, British businessman Peter Michael Levine, also headed and founded Imperial Energy Corporation, an oil and natural gas exploration company with major interests in Siberia and Kostanai, Kazakhstan, which itself was sold for \$2.1 billion in 2009.

Levine could not be reached for comment. A representative of PLLG Group, which includes PL Company, said in an e-mail to ICIJ that Levine has not been associated with the firm for a substantial period of time. PLLG Group, the representative wrote, is a “professional services organization [that] maintains an appropriate policy of confidentiality.”

Financial records of Kostanai Minerals show transactions with at least nine U.S.-based companies, registered in Delaware, Colorado,

New York, and Oregon. At least three are listed as chrysotile dealers. The biggest was Asters Investments LLC, a now-defunct firm based in Eugene, Ore., which bought more than 48,000 tons of asbestos from Kostanai Minerals in 2004. In 2006, Asters did more than \$1 million in business with a Ukrainian asbestos dealer that had partnerships with both Orenburg Minerals and Kostanai Minerals, according to an April 2006 investors report.

The biggest British dealer for Kostanai Minerals, United Minerals Global Trading, was registered in London in 2002; that year it bought 152,000 tons of chrysotile, according to the Kostanai investors report. The company's name was changed to Minerals Global Trading in 2004, when it acquired more than five percent of the asbestos produced by Kostanai Minerals. The asbestos was sent to India, China, Iran, Turkey, and Vietnam.

Kostanai Minerals and Minerals Global Trading did millions of dollars in business in 2008 and 2009, according to Kostanai Minerals reports. ICIJ could not discern the owners, directors or shareholders of Minerals Global Trading. Dozens of firms are registered at the same address in London. A BBC report-

er was told nobody at the address could help identify or forward a message to the company.

Compared to Orenburg Minerals and Kostanai Minerals, ownership of Uralasbest is quite transparent. Top managers control 38 percent of the company, according to a March 2010 company report. The board includes the owners of Uralasbest and representatives of two groups with offices in South Africa, which banned asbestos in 2008. The C. J. Petrow Group, headquartered in Johannesburg, owned about 14 percent of Uralasbest until 2003 and supplied chrysotile to developing countries. The Marvol Group — established in Germany, with offices in Cape Town, Amman, and Moscow — controlled about seven percent of Uralasbest until 2006. The company was founded by Mark Voloshin in the mid-1980s. Voloshin is a former dentist who reportedly was involved in sales of Russian military equipment to South Africa in the 1990s.

Representatives of Uralasbest and Voloshin did not respond to interview requests. In a 2004 report to investors, Kostanai Minerals said that United Minerals had a constructive relationship with Uralasbest, its main competitor. "The risks of competition are minimal," the report said. ■

# A Growing Death Toll

## ASBESTOS CASUALTIES MOUNT AMID WEAK ENFORCEMENT AND A POWERFUL LOBBY

By Ana Avila

International Consortium of Investigative Journalists

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**M**EXICO CITY — The American Roll factory is not a welcoming place.

Situated among homes and schools in Barrio de San Lucas, a working-class neighborhood in the Mexico City suburb of Iztapalapa, the fortress-like brick building emits a pungent, scorched-rubber odor that makes the eyes water and the head throb. It's impossible to see inside. A maker of asbestos brake linings, American Roll SA de CV has been at odds with its neighbors since 2001. Anxious residents say that their complaints about pollution from the factory go unanswered and suspect that the company has co-opted environmental regulators. They worry that they will meet the same fate as Jaime Carbajal.

Born and raised in the neigh-



**Children gather at a food cart across the street from the American Roll asbestos brake factory (right). Residents of the Mexico City suburb of Iztapalapa have complained repeatedly about emissions from the plant but say they've gotten little help from regulators. (Credit: Jose Coreia)**

borhood, Carbajal lived a mere 150 meters from the factory. On March 4, 2008, he arrived at the emergency room in Hospital General de Iztapalapa with sharp back pain and breathing difficulties. The doctor speculated that Carbajal had been

**“After all our claims were rejected, and finding myself sitting there alone, I just quit. They took advantage of our fatigue and they won.”**

exposed to asbestos, even though he had never worked with the material, and noted the proximity of his house to the factory. A month later, a specialist at the National Institute of Respiratory Diseases in Mexico City wrote that tomography had detected “dense spots” in Carbajal’s lungs suggestive of asbestos exposure. Again, the location of the patient’s house was highlighted.

On May 11, 2008, Carbajal died at 58 of mesothelioma, a rare cancer triggered in almost all cases by the inhalation of asbestos fibers. For Berenice Martínez, another resident of Barrio de San Lucas, his death was confirmation that American Roll poses a threat to the neighborhood — in particular, to its 300 or so children. Martínez and a few oth-

ers, including some teachers, had pressured authorities to close the factory for years, succeeding only once, in January 2004. It quickly reopened and its opponents gave up, one by one. “After all our claims were rejected, and finding myself sitting there alone, I just quit,” Martínez says. “They took advantage of our fatigue and they won.”

American Roll refused to admit a reporter when she asked to enter the plant in March. In an e-mailed statement weeks later, the company said its emissions are always far below Mexican federal limits and it bears no blame for residents’ illnesses. “If this were the case, we don’t think that any authority could let that situation continue,” Maria de la Luz Martínez Ávila, American Roll’s legal representative, said in the statement.

### **3,000 Deaths per Year**

American Roll is one of nearly 2,000 Mexican companies that use asbestos in an array of products — including brakes, boilers, roofing, pipes and wires — sold throughout the hemisphere. Valued for its heat and fire resistance, asbestos was once widely used worldwide but is now banned or restricted by 52 coun-





**Dr. Guadalupe Aguilar Madrid, a physician shown in her office at the Mexican Social Security Institute, predicts an epidemic of asbestos-related disease in Mexico because of uncontrolled use of the fibrous mineral.** (Credit: Jose Corea)

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tries, including Argentina, Chile, and Uruguay. Its use is forbidden in the European Union and limited in the United States to a handful of products, such as automobile brakes and gaskets. Fueled by an aggressive industry campaign, however, asbestos use has grown markedly in the developing world, led by such countries as China, India, and Mexico. With its new life in emerging mar-

kets, the cumulative death toll from asbestos may reach 10 million by 2030, according to Dr. James Leigh, the retired director of the Centre for Occupational and Environmental Health at the Sydney School of Public Health in Australia.

Thousands of those deaths are expected in Mexico, which used 17,000 metric tons of asbestos in 2007 — ten times the amount used

in the United States that year. Mexico ramped up imports of asbestos in the 1970s, largely from Canada; today its manufacturers buy most of their supplies from Canada and Brazil. According to the country's Economy Secretariat, 1,881 companies use raw asbestos. These companies employ 8,000 people, the National Workers Confederation says.

Dr. Guadalupe Aguilar Madrid, a physician and researcher with the Mexican Social Security Institute, which oversees public health under the federal Secretariat of Health, says that the country's weak worker protection laws have allowed dangerous conditions to proliferate and the human costs are going to rise sharply. "The epidemic can grow like it grew in the countries that started to work with asbestos after the Second World War," says Aguilar. She predicts that the annual death toll from mesothelioma, asbestosis, and asbestos-related lung cancer could reach 3,000 to 5,000, up from the current 1,500, and stresses that the epidemic won't stop until the country bans asbestos.

### **Mexico's Asbestos Lobby**

Aguilar's nemesis is Luis Cejudo Alva, founder and president of the Instituto Mexicano de Fibro Indus-

trias (IMFI), an asbestos trade group that enjoys a warm relationship with the government. A tall, thin man in his 70s, he insists that the IMFI has collaborated with regulators to improve workplace conditions. "We are close to the government authorities," he says. "It has been arduous and constant work. We held meetings with them, we have participated in creating the regulations, and invited them to the factories."

A passionate defender of asbestos in Latin America, Cejudo insists the mineral can be used safely. He points out that IMFI members have agreed to stop selling asbestos to factories without adequate safety measures and that this has led to some plant closures. Cejudo travels frequently, his bills paid by the Montreal-based Chrysotile Institute (named after chryostile, or white asbestos, the only form used today). "This doesn't mean they pay all my expenses, or that they give me a salary," he explains. He seems to relish his role as an asbestos evangelist. In a speech at a 2006 scientific conference sponsored by the Chrysotile Institute, he described how his organization worked with its counterparts to ring up victories: Peru had been expected to follow Chile's lead and ban asbestos and would have

done so but for the “quick actions” of the Canadian-led lobby. Colombia was “under siege” by anti-asbestos forces but the combined efforts of four groups, including his own, had held them off. In Brazil, “Attacks are there, but with the help of the Brazilian Chrysotile Institute, [asbestos producers] keep on going forward as the river flows.”



**Luis Cejudo Alva**

The Chilean ban still stings, Cejudo says. “I was there, but nothing could be done.” The “asbestos detractors” were simply too strong.

Aguilar dismisses Cejudo’s characterization of the IMFI as a benign, safety-oriented group. It has paid for employees of the Mexican Labor Secretariat to tour asbestos operations in Quebec, she says. “They return to Mexico with the impression that it is possible to work safely with the fiber.” It also lobbies regulators: “When we have meetings to create the regulations, they attend,” Aguilar says. Indeed, it

sometimes writes the rules, she says, displaying a rule on workplace asbestos exposures that she and Cejudo agree was influenced by the IMFI.

The IMFI, Aguilar says, bears much of the blame for the looming public health disaster in Mexico. “They have dared to say that asbestos can be eaten with bread and butter,” she says, “despite all the scientific work that has been done.”

Cejudo says angrily that Aguilar is lying about his organization and the hazards of asbestos. “Why does this lady say that the dust that comes from the [asbestos] sheets kills people?” he asks. “It is only dust .... These sheets are an answer for people’s needs.”

### Schools, Protests, and Pollution

For nearly 30 years, the brake factory in Barrio de San Lucas was owned by ITAPSA, a firm that operates a number of asbestos plants around Mexico City. ITAPSA moved to another location in the late 1990s and used the building as a warehouse. The factory reopened under the American Roll name in 2001.

The plant has 22 employees, divided into two shifts. It generally runs 15 hours a day, five days a week, though neighbors say its

schedule is adjusted on occasion. “When they sense tension in the neighborhood, they work at night or on Sunday,” says Claudia Fuentes, who lives about a mile away.

At the request of Mexico City Congresswoman Alicia Téllez, the factory

**“Who is taking care of these communities? Who is going to take responsibility for the deaths?”**

he acknowledged that he was taking the company’s word when it said it properly disposes of asbestos and other hazardous waste. Téllez is dubious.

“I was in Barrio de San Lucas,” she says. “I saw the people. I talked to them, and there is a general feeling that something is wrong ... If there is nothing wrong, why wasn’t I allowed to take a look at the factory?”

Barrio de San Lucas is home to seven elementary schools, two high schools, and five preschools. On Jan. 29, 2003, Berenice Martinez, mother of three children, led other parents in a protest outside American Roll, demanding that the plant be shut down.

was toured in April by José Luis Cortés, director of surveillance for the city’s Environment Secretariat. Cortés declared everything to be in order, though

The parents met afterward with officials from the Education Secretariat, who pressured them to end the action and avoid talking to a television reporter at the scene, Martinez says. “Their intimidation was veiled, but we feared it,” she says. A Secretariat spokesman did not respond to information requests from ICIJ.

The protest had been prompted by incidents like one that occurred also in January 2003 at the Año de Juárez elementary school. A stench permeated the school’s classrooms, causing the children’s eyes and throats to burn. The Mexico City environment minister inspected the factory at the request of the undersecretary of educational services but found nothing out of the ordinary.

An employee at Año de Juárez, who asked not to be identified, says that teachers who were sympathetic to the protest were threatened with sanctions if they persisted with their complaints. “We were told we could lose our jobs,” the employee says.

Aguilar, the physician, says she sympathizes with the people of Barrio de San Lucas and the American Roll workers.

“Who is taking care of these communities?” she asks. “Who is going to take responsibility for the deaths?” ■

# A Ravenous Appetite For Asbestos

## TOP USER CHINA FACES EPIDEMIC OF CANCER

By Jim Morris and Te-Ping Chen

International Consortium of Investigative Journalists

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**F**OR CHINA, it seems, the worst is yet to come.

Asbestos wasn't used extensively in the country until Deng Xiaoping's reforms in the late 1970s triggered a surge of development. Given the lag time between exposure to asbestos fibers and the onset of disease, health experts say, the country's prodigious appetite for the mineral will have lethal consequences into the middle of this century.

Jukka Takala, director of the European Agency for Safety and Health at Work, says that the annual death toll from mesothelioma, lung cancer, and other asbestos-related



**An asbestos mine in Qinghai Province, China. The country is now by far the world's largest consumer of the toxic mineral.**

(Credit: Flickr user kevincure)

diseases in China may reach 15,000 by 2035. It's the price the nation will pay for being the world's top asbestos consumer and for failing until recently to address health risks as-

sociated with asbestos mining and manufacture. In 2007, China used 626,000 metric tons of raw fiber — more than twice that of the next largest consumer, India. It is also the world's second-largest producer, mining some 280,000 metric tons of the mineral in 2008.

“In the future, China will face a public health crisis triggered by the use of asbestos,” says Li Qiang, executive director of China Labor Watch, which monitors workplace violations. “The guidelines that China’s government has put forward to protect workers do in fact offer workers protection. But the challenge is Chinese officials don’t have any way to effectively implement them. Factories flagrantly fail to respect Chinese law.”

To be sure, workers in China face a multitude of threats, from toxic chemicals to dangerous industrial machines. They die at a higher per capita rate than workers in any other country, according to the International Labor Organization. But asbestos, a known carcinogen, is particularly lethal, scientists say, and China’s broad embrace of the mineral appears likely to produce an epidemic of occupational disease.

Valued for its heat and fire resistance, asbestos was once widely used

worldwide, but it is now banned or restricted by at least 52 countries, including Japan, Singapore, and South Korea. Use of the mineral is banned entirely in the European Union. In the United States — where it is blamed for taking some 200,000 lives

**“The guidelines that China’s government has put forward to protect workers do in fact offer workers protection. But the challenge is Chinese officials don’t have any way to effectively implement them.”**

and the industry has paid out \$70 billion in damages and litigation costs — asbestos use is limited to a handful of products, such as automobile brakes and gaskets.

But in China, asbestos use is booming. More than 400 factories turn out 300 million square meters of asbestos sheeting for roofs and walls each year; other factories make asbestos brake pads, gaskets, and cloth. The industry’s main lobby group, the China Non-Metallic Minerals Industry Association, insists that chrysotile, or white, asbestos, the most widely used form of the mineral, can be handled safely and



**The Chinese village of Shimiankuang (literally, Asbestos Mine), in the northwest province of Qinghai.** (Credit: Flickr user watchsmart)

links from its website to materials from Canada's Chrysotile Institute and Russia's Chrysotile Association. The Chinese group denounces what it calls "exaggerations" of the fiber's deleterious effects and says that those who use phrases such as "time bomb" to warn of looming disease outbreaks are biased. The group failed to respond to multiple interview requests.

The first asbestos mine in China was opened by occupying Japanese forces in the 1940s. Today, virtually all of the asbestos mined in, and imported to, China is of the white, or chrysotile, variety. An estimated 1,000 enterprises employing more than a million people are involved in the production and processing of asbestos, and up to 90 million tons of chrysotile are thought to

be lodged beneath the soil in 15 provinces, mostly in the western part of the country. The Aksai Kazakh Autonomous County of Gansu Province alone accounts for half of these reserves and boasts an average annual output of 170,000 tons.

While China has tightened its exposure limit for asbestos over the years, unhealthful conditions in many factories are believed to persist. In 2008, for example, officials in the city of Yuyao, in Zhejiang province, gave unsatisfactory evaluations to most of the 100 or so small asbestos workshops they inspected. That same year, a local journalist visited one of the workshops and found extremely dusty conditions and employees wearing disposable masks, which offer little protection against the tiny, airborne asbestos fibers. Of eight workers who had just had chest X-rays, five showed lung abnormalities.

China has taken steps to try to mitigate the looming health crisis. Brown and blue asbestos — believed by some scientists to be more hazardous than white — have been banned, as has the use of all forms of asbestos in automobile brake linings and other friction products. In Beijing, no asbestos-containing materials may be used in construction,

but their use is widespread in new buildings across the rest of China. And in both Hong Kong and on the mainland, the government has committed to pay medical and rehabilitation costs for victims of pneumoconiosis, a class of lung diseases that includes asbestosis.

But for many workers, it's too late. In a glimpse of what may be the mainland's future, researchers at the Chinese University of Hong Kong reported in March that the number of mesothelioma cases in the city was still climbing and might not peak until 2014. This doesn't bode well for the rest of the country considering that asbestos use in Hong Kong, according to the researchers, reached its zenith in the early 1960s and mesothelioma can take 40 or more years to develop.

Unlike some Western nations, China has been slow to embrace asbestos substitutes such as cellulose fiber-reinforced cement. Still, concern over unbridled asbestos use may be building in the region. Last year, Hong Kong hosted a meeting of anti-asbestos activists from around the world. The meeting gave rise to a declaration calling for a ban on all forms of asbestos in Asia. Whether that message was heard in Beijing remains to be seen. ■



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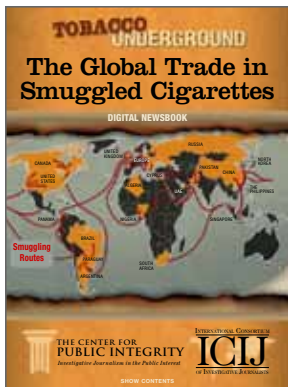


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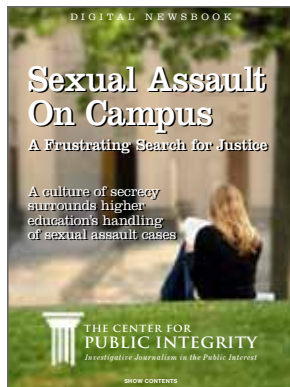
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