Docket ID Number: EPA-HQ-OPPT-2016-0736

Comments to the U.S. Environmental Protection Agency (EPA) on the Scope of its Risk Evaluation for the TSCA Work Plan Chemical:

ASBESTOS
CAS Reg. No. 1332-21-4

Submitted on March 15, 2017 by

Safer Chemicals, Healthy Families
Environmental Health Strategy Center
Healthy Building Network

I. INTRODUCTION

The Toxic Substances Control Act (TSCA), as amended in June 2016, requires the U.S. Environmental Protection Agency (EPA) to determine whether existing chemical substances pose an unreasonable risk to human health and the environment, both generally and for vulnerable subpopulations, without consideration of costs or other non-risk factors. When unreasonable risk is found, EPA must enact restrictions on the production (including both domestic manufacture and import), processing, distribution in commerce, use and/or disposal of that chemical, and/or materials and articles that contain that chemical, that are sufficient to extinguish such unreasonable risk.

Congress directed EPA to launch the risk evaluation process expeditiously. Accordingly, in section 6(b)(2)(A) of TSCA, it directed EPA to assure that evaluations are initiated within six months of the law's enactment on 10 substances drawn from the 2014 TSCA Work Plan list. EPA designated these 10 substances on December 19, 2016, and is now developing scoping documents for its evaluations. EPA's initial risk evaluations will provide an early test of the effectiveness of new law. It is therefore critical that they reflect the best information available on hazard and exposure, are based on a comprehensive understanding of the chemicals' conditions of use, and employ sound, precautionary methodologies that fully capture the risks they pose to human health and the environment.

Toward those ultimate environmental public health objectives, these comments provide information and recommendations to EPA on the scope its risk evaluation for one of the first ten Work Plan chemicals subject to the new TSCA requirements. These comments are jointly submitted as a collaborative work product by three not-for-profit organizations:

Safer Chemicals, Healthy Families (SCHF), a coalition of 450 national, state and local organizations committed to ensuring the safety of chemicals used in our homes,

workplaces and in the many products to which our families and children are exposed each day.

Environmental Health Strategy Center works at the state and national levels to ensure that all people are healthy and thriving in a healthy economy, through affordable access to safer food, water, and products; and investments that create and retain good, green jobs; and

Healthy Building Network transforms the market for building materials to advance the best environmental, health and social outcomes, including reduced use of hazardous chemicals in building products as a means of improving human health and the environment.

SCHF and its partners took a leadership role during the legislative process that led to the passage into law of the Frank R. Lautenberg Chemical Safety for the 21st Century Act, advocating the most health protective and effective policy on toxic chemicals in use today;

Our comments consists of three parts:

1. **Summary Comment** – This overview provides general comments on the scope of EPA's risk evaluation, summarizes key findings from our attached technical report, and makes recommendations to EPA for related actions needed to meet TSCA requirements;

2. **Technical Appendix** – This technical report provides information on the production, trade, use, recycling, and disposal of this chemical, citing authoritative sources (with web links), emphasizing information not included in EPA's chemical use profile; and

3. **Consumer Appendix** – This document profiles specific consumer product uses of the chemical as reported by retailers, distributors, and/or product manufacturers.

II. GENERAL COMMENTS

As discussed in detail in our separate submission, "General Comments of Safer Chemicals Healthy Families on Risk Evaluation Scoping Efforts for Ten Chemical Substances under the Toxic Substances Control Act," in order to properly scope its risk evaluation to determine whether this chemical poses an unreasonable risk to human health and the environment:

- EPA must evaluate the complete life cycle of the chemical, including production and imports, *all* uses, and its fate at the end of its useful life;

- EPA must evaluate exposure to *all* vulnerable groups, including communities of

color and low-income people who may be disproportionately exposed;

- If EPA finds that data on any chemical use, hazard or exposure are insufficient to support risk evaluation, EPA must require industry to produce such data;

- EPA must assess the aggregate exposure to the most vulnerable groups and the general population for this chemical;

- EPA should assess cumulative exposure and risk, whenever practicable, for this chemical in combination with other risk factors;

- EPA should abandon its presumed safety threshold model for non-cancer effects, as recommended in the expert "Science and Decisions" report.

III. METHODS and SOURCES

We accessed and analyzed several sources of information in an effort to identify manufacturers, importers, and uses of HBCD that were not included or not fully characterized in EPA's recent chemical use profile.[1] These sources included:

- Panjiva – the trade data authority. Panjiva offers an extensive database of U.S. imports and exports of goods, including chemicals, and materials or articles containing chemicals. EPA should access these data for a modest subscription fee;
- European, United Nations and other non-domestic agency sources;
- Chemical industry sources – from web sites, trade reports and other documentation;
- U.S. EPA data sources – the Toxics Release Inventory (TRI) database, Chemical Data Reporting (CDR) submissions (including 2016 submissions obtained through a Freedom of Information Act request), and other EPA sources.
- Pharos Chemical and Material Library – a user-friendly hazard database available free for a 14-day trial.

IV. SPECIFIC COMMENTS

The findings below, and recommendations that follow, are specific to Asbestos, CASRN 1332-21-4. The specific comments below provide an executive summary of our technical analysis. Please refer to the attached Technical Appendix for details, methods, additional information, and citations to authoritative sources that provide the comments' factual basis.

[1] U.S. EPA, Preliminary Information on Manufacturing, Processing, Distribution, Use and Disposal: Asbestos, Support document for Docket EPA-HQ-OPPT-2016-0736, February 2017. https://www.regulations.gov/document?D=EPA-HQ-OPPT-2016-0736-0005

A. Chemical Production and Trade

FINDING 1: ***Three U.S. chemical companies imported more than 4 million pounds of asbestos in the last 4 years for their use in 15 chlor-alkali plants***

See Table 1 on page 4 and the discussion on pp. 9-10 of the Technical Appendix.

FINDING 2: ***Asbestos miners in Brazil are literally dying to prop up the U.S. chemical industry's reliance on the outdated asbestos diaphragm technology for producing chlorine and caustic soda at 15 chlor-alkali plants.***

See the discussion on pages 1-6 of the Technical Appendix, including the figures.

FINDING 3: ***Occidental Chemical imported 900,000 pounds of asbestos from Oct. 2013 through 2015, but apparently failed to report those imports to the EPA in violation of the Chemical Data Reporting rule as required under TSCA***

See the discussion on 9-10 of the Technical Appendix. Asbestos imports were accessed from shipping records in the Paniva trade database. The 2016 CDR submissions were obtained from EPA through a Freedom of Information Act request. Occidental Chemical reported production of other chemicals in its CDR submission covering the 2012-2015 reporting period, but not for asbestos.

FINDING 4: ***Asbestos imports by Occidental Chemical and Olin Corporation more than doubled from 2015 to 2016, perhaps indicating a stockpiling of asbestos in anticipation of further restrictions on mining in Brazil or U.S. use;***

See Table 1 on page 4 of the Technical Appendix, and the discussion on page 3.

FINDING 5: ***Asbestos imports from Russia supplied Dow Chemical (2014) and Olin, who now owns Dow's assets, in 2016; if the mine in Brazil closes, the U.S. chlor-alkali industry's back-up plan is the massive mine in Asbest, Russia***

See Table 1 on page 4, and the discussion and figures on pp. 6-7 of the Technical Appendix.

FINDING 6: ***More than 650 million pounds of talc, which is often contaminated with asbestos, was imported into U.S. annually over the last five years, with 32% from Pakistan which obtains asbestos-tainted talc from Afghanistan***

See the discussion of talc, talc-containing products, and asbestos on pages 7-8 and 10-11.

B. Chemical Use

FINDING 7: The U.S. chlor-alkali industry consumed 88% of asbestos imports in 2014, rising to 100% of asbestos imports supplying this one industry in 2016.

According to the U.S. Geological Survey. See discussion on page 2 of the Technical Appendix.

FINDING 8: Talc is still used in some baby and body powders, cosmetics, and as a filler in crayons, for which asbestos contamination has been documented

See the discussion on pages 10-11 of the Technical Appendix.

FINDING 9: Remaining uses of asbestos in consumer products includes window glazing and roofing products, such as mastic - the black tarry construction adhesive that contaminates asphalt shingles with asbestos

See pages 11-12 of the Technical Appendix, and additional products containing asbestos that are profiled in the Consumer Appendix.

C. Chemical Recycling and Disposal

FINDING 10: About 12 million tons of recycled asphalt shingles are generated yearly; One study found that of 27,000 asphalt shingles collected from around the country, about 1.5% contained more than 1% asbestos

See the discussion on pages 12-14 of the Technical Appendix.

V. RECOMMENDATIONS

Based on our research and findings above, we urge EPA to take the following actions in parallel during the scoping and conduct of the risk evaluation for asbestos.

A. EPA should include all uses and exposures within the scope of risk evaluation

The scope of the risk evaluation should include, but not necessarily be limited to:

1. The complete life cycle of asbestos use in the chlor-alkali industry, including mining, bagging, shipping, distribution, processing, diaphragm manufacture, use & disposal;

2. All uses of talc and talc-containing products contaminated with asbestos; and

3. The use and disposal of all consumer & commercial products that contain asbestos.

B. EPA should assess *all* potentially exposed or susceptible subpopulations

1. Workers in Brazil and Russia who mine and bag asbestos to supply the U.S. chlor-alkali industry that still relies on outdated asbestos diaphragm technology;

2. Fenceline communities and occupational bystanders adjacent to asbestos mining operations, chlor-alkali plants, and facilities that handle asbestos;

3. Workers that transfer asbestos everywhere from mines to ships to unloading and distribution hubs to chlor-alkali plants and landfills that receive asbestos or asbestos-bearing materials;

4. Infants and children exposed to asbestos from baby powder, body powder, from playing with products like crayons, which are contaminated with asbestos;

5. Consumers and workers who install asbestos-contaminated building products such as window glazing and roofing products;

6. Workers at recycled asphalt shingle grinding operations and at asphalt ready mix plants that use ground shingles.

7. A determination as to whether any communities of color, or people of lower socioeconomic status, and their local community environments, are disproportionately exposed to HBCD and thus constitute a "potentially exposed or susceptible subpopulation", based on Census Bureau data, geocoded locations of industrial facilities and disposal sites, and modeled or measured exposures.

C. EPA should require industry to develop new information to close data gaps

In parallel to the scoping and conduct of the risk evaluation, EPA should require chemical manufacturers and processors to fill data gaps whenever information is insufficient to support a determination of unreasonable risk. If so determined by EPA, candidates for additional data gathering under TSCA include but are not limited to the following:

1. Asbestos releases and exposures across the lifecycle of asbestos diaphragm-based chlor-alkali production, from mining through final disposal;

2. The presence of asbestos in imported talc and talc-containing products using the most sensitive detection limit possible, and associated exposures; and

3. The presence of asbestos in recycled asphalt shingles, and associated releases and exposure during removal, recycling, processing and reuse on roads.

D. EPA should require notification of *all* new uses, including in imported articles

In order to ensure the completeness of the risk evaluation to support an unreasonable risk determination, EPA needs to establish with some certainty which uses in the United States are truly historic or never took place in this country, and also ensure that such uses are not encouraged or take place again in the future without EPA's knowledge. Therefore:

1. EPA should propose a Significant New Use Rule (SNUR) for asbestos, and for all imported articles that contain asbestos;

By proposing a SNUR soon, i.e. during the risk evaluation of asbestos, EPA would allow industry to step forward and assert with clear evidence whether any such uses are in fact *existing* uses that continue rather than historic uses that would trigger notification if later reintroduced as new uses. This mechanism would provide EPA with more complete information on which to base its risk evaluation and unreasonable risk determination.

VI. CONCLUSION

Asbestos has long been recognized as a killer, with some 10,000 American dying every year from diseases associated with historic high-volume use of asbestos. Now it's time to finish the job of protecting human health from this notoriously deadly fiber.

We urge EPA to use its full authority under TSCA to support an expansive scope for the risk evaluation of asbestos, as recommended above. The chlor-alkali industry can readily convert to the modern membrane technology, which does *not* require asbestos to manufacture chlorine and caustic soda.

The U.S. Environmental Protection Agency should find that asbestos poses an unreasonable risk to human health, and join the international campaign to phase out all remaining mining and uses of asbestos, including in outdated chlor-alkali production technology.

Technical Appendix

Asbestos

Technical Report on production, imports, use, end of life, exposure scenarios, and associated environmental and human health hazards.

Healthy Building Network

in collaboration with Safer Chemicals Healthy Families and Environmental Health Strategy Center

March 15, 2017

Outline

Technical Report: Asbestos

1. Identifying Information

CAS No.: 1332-21-4
UN Shipping Code: UN 2122
Harmonized Tariff Schedule Number: HTS No. 29033020
TSCA Docket: EPA-HQ-OPPT-2016-0736, https://www.regulations.gov/docket?D=EPA-HQ-OPPT-2016-0736

2. Research Methods

In collaboration with Safer Chemicals Healthy Families and Environmental Health Strategy Center, the Healthy Building Network research team reviewed the Chemical Data Reporting forms submitted for asbestos and the EPA Preliminary Information on Manufacturing, Processing, Distribution, Use, and Disposal (released in February 2017). It cross-referenced this data with the EPA Toxics Release Inventory and a variety of national, European, and United Nations reports, chemical industry literature, and a shipping database (Panjiva) with the goal of identifying potentially missing producers, importers, and uses of, and pathways for exposure to, asbestos. Chemical hazard information is drawn from the Pharos Chemical and Material Library, available to any user for 14 days, after which a subscription is required.

Findings that are not included in the EPA Preliminary Information document, or might not have been reported in CDRs, are highlighted in yellow.

3. Production/Trade

"There are 16 chlor-alkali plants operating in 9 States that rely on this [asbestos diaphragm] technology, that is Louisiana, Alabama, Indiana, Kansas, Nevada, New York, Texas, West Virginia and Wisconsin. But it really goes well beyond that in terms of impact, because this provides critical benefits to society and the economy. Today, over 60 percent of U.S. chlorine production uses this technology. About 93 percent of pharmaceuticals sold in the United States rely on chlorine chemistry. So this has a major, major impact on society and the economy."

- US Sen. David Vitter (R-La.), 2007

There has been no intentional asbestos production in the United States since 2002, but the country remains a significant consumer. One industry in particular stands in the way of asbestos' demise: the chlor-alkali industry, which produces chlorine and caustic soda. The industry is importing asbestos from Brazil at an accelerating rate to feed its aging equipment, especially at plants run by Occidental and Olin.

In its 2015 annual report for asbestos, the U.S. Geological Survey notes: "The United States is dependent on imports to meet manufacturing needs." It estimated that the industry accounted for an estimated 88% of U.S. consumption in 2014.[1] Its share of consumption continued to rise through the CDR reporting period. The USGS said in January 2017 that the chloralkali industry "likely accounted for 100% of asbestos consumption during 2016."[2]

Arguing against restrictions, Sen. David Vitter (R-La.) laid out the industry's case at a 2007 U.S. Senate hearing:

> *" . . . the chlor-alkali industry relies on technology that safely uses asbestos diaphragms. That is really for two reasons. One is the use of asbestos there is confined in asbestos diaphragms and produced in a continuous wet environment that remains in a closed process, so there is minimal to no release of asbestos and absolutely no worker exposure. So I think again, two things are significant: wet environment and completely closed process.*
> "*There are 16 chlor-alkali plants operating in 9 States that rely on this [asbestos diaphragm] technology, that is Louisiana, Alabama, Indiana, Kansas, Nevada, New York, Texas, West Virginia and Wisconsin. But it really goes well beyond that in terms of impact, because this provides critical benefits to society and the economy. Today, over 60 percent of U.S. chlorine production uses this technology. About 93 percent of pharmaceuticals sold in the United States rely on chlorine chemistry. So this has a major, major impact on society and the economy.*
> *"Now, **if this were harming people or potentially killing people, that would be the end of the argument, we should outlaw it.** But there is no known case of asbestos-related disease from the chlor-alkali industry using this technology."* (emphasis added)[3]

Sen. Barbara Boxer (D-Calif.) retorted, "My understanding is that there is a danger if bags rip and you have to clean up the asbestos, so it is not as clean as one would think."[4]

[1] https://minerals.usgs.gov/minerals/pubs/commodity/asbestos/mcs-2015-asbes.pdf
[2] https://minerals.usgs.gov/minerals/pubs/commodity/asbestos/mcs-2017-asbes.pdf
[3] https://www.gpo.gov/fdsys/pkg/CHRG-110shrg61969/html/CHRG-110shrg61969.htm
[4] https://www.gpo.gov/fdsys/pkg/CHRG-110shrg61969/html/CHRG-110shrg61969.htm

Unfortunately, there is no shortage of cases that support Sen. Vitter's suggestion that "if this were harming people… we should outlaw it," especially in the mining communities of Brazil and Russia that produce the chloralkali industry's asbestos.

As the bell tolls for the global asbestos trade and its trail of mesothelioma, operators of chlorine plants appear to be stockpiling the mineral. This may be in anticipation of potential U.S. or Brazilian regulations to stop the trade.

For the past several years, Olin, Occidental, and a possible third company imported asbestos at a combined rate of over a million pounds per year. According to shipping records in Panjiva, asbestos imports surged 91% from 2015 to 2016 (from 884,229 pounds to 1,696,920 pounds). Olin's imports rose 166%, Occidental's 170%.

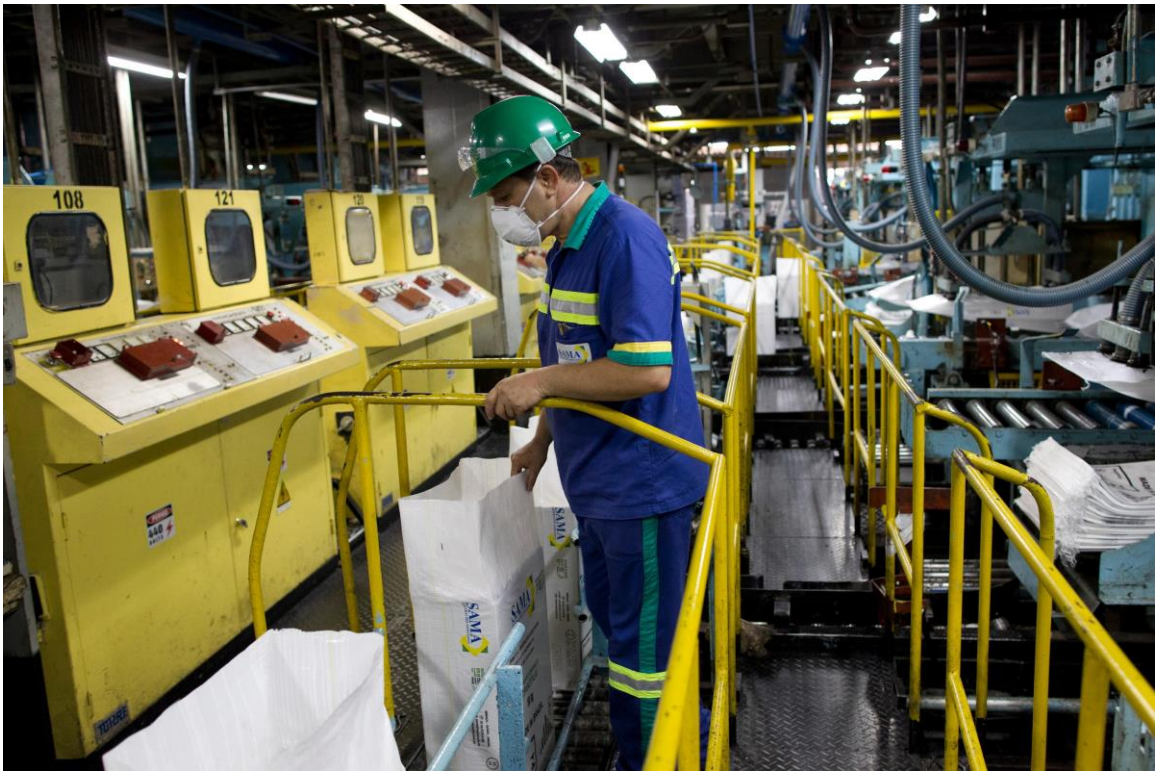
Also of note: talc and talc-bearing products are also significant imported sources of asbestos. Testing of products that contain talc, from crayons to caulk, often reveals asbestos in some of these items. This issue is explored further below.

Minaçu, Brazil, asbestos mine. Google Earth image.

Table 1. Asbestos Imports, October 2013 to February 2017, pounds

U.S. Importer	Oct-Dec 2013	2014	2015	2016	Jan-Feb 2017	AVERAGE (annual)	% of Whole
Occidental Chemical	231,397	376,020	289,246	780,965	57,849	507,944	43.3%
Olin/Dow	125,928	587,840	294,581	785,971	0	525,167	44.7%
Unknown	22,487	28,925	300,402	129,984	0	141,014	12%
Total	***379,812***	***992,785***	***884,229***	***1,696,920***	***57,849***	***1,174,125***	
Asbestos Exporter	**Oct-Dec 2013**	**2014**	**2015**	**2016**	**Jan-Feb 2017**	**AVERAGE (annual)**	**% of Whole**
Brazil	379,812	971,620	884,229	1,662,019	57,849	1,157,716	99%
Russia	0	21,164	0	34,901	0	16,409	1%

SOURCE: Healthy Building Network synthesis of records in the Panjiva shipping database.



A worker bags chrysotile, or white asbestos, at the Cana Brava mine and processing plant, owned and operated by SAMA S.A., part of the Brazilian Eternit Group, in Minaçu, northern Goias State, January 18, 2013. Cana Brava is the only mine producing chrysotile in Latin America. Picture taken January 18, 2013. REUTERS/Ueslei Marcelino

- **Imports from Brazil**

Our review of Panjiva shipping records reveals that U.S. chlorine companies imported about 1.2 million pounds of asbestos from Brazil annually between 2014 and 2016.

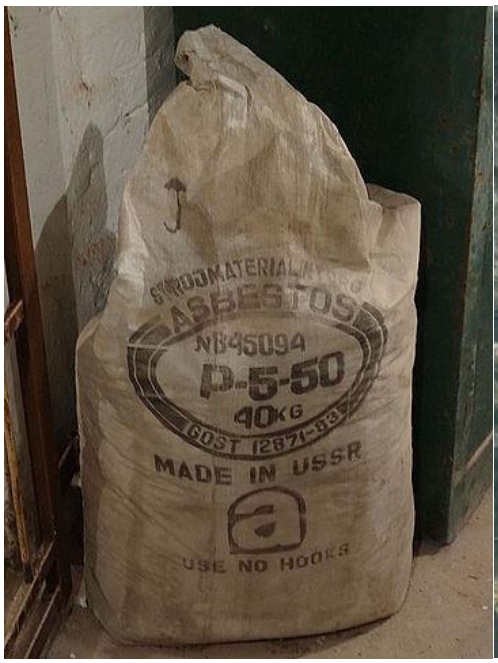
All of these shipments come from the last operating asbestos mine in the Western Hemisphere, in Minaçu. Investigative reporter Steve Carpentier calls it the "city that breathes asbestos." The asbestos arrives in the U.S. on ships, in bags stacked on pallets. Here's a typical description of the cargo in shipping records in the Panjiva database: 16 PALLETS OF 20 BAGS PER PALLET, 40 KG/BAG. NET WEIGHT PER PALLET = 1764 LB/PALLET. At 40 kilograms (or 88.1849 pounds) per bag, *the U.S. chlorine industry is importing over 13,000 bags of asbestos per year from Brazil.*[5]

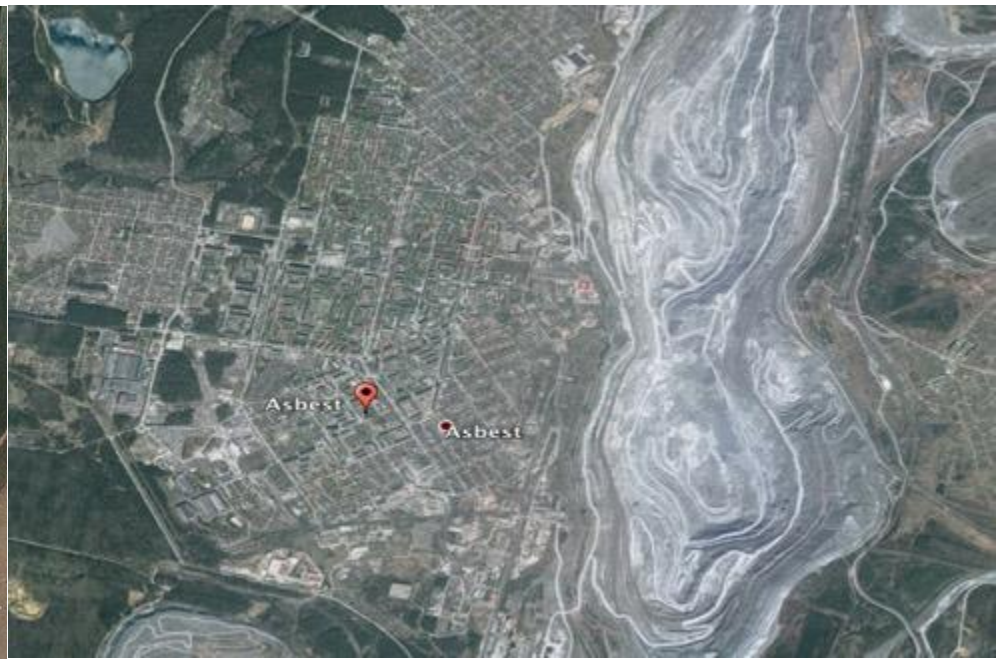
Each of those bags was packed by workers in Brazil. A high percentage of them are dying or have died from mesothelioma, says Carpentier:[6]

> *"Albertino de Oliveira is a finished man. He has seen seven family members die over the past ten years. 'My wife, my father, a brother, three uncles, a cousin,' says the white-haired gentleman of 54 years. The relatives had something in common: they were all employees of the mine of asbestos of Minaçu, in the interior of Goiás.*
>
> *"In his hand, Oliveira holds the list of about 30 people who suffer from mesothelioma or who have spots on the pleura. Typical diseases of asbestos workers. Alongside some names, Oliveira writes the letter 'F' for deceased. From 1973 to 1988, he himself worked in the mine, in bagging the fiber.*
>
> *"'Fifteen years working on a cloud of dust with pieces of cotton on the nose as the only protection,' he says. He is not yet sick, but asks for compensation. 'For those who have eaten fiber for years and who are dying without a look.'*
>
> *"Albertino has already calculated: in the next few years, about 500 people will develop some disease directly linked to asbestos, among them former employees of the mine and*

[5] Healthy Building Network estimate
[6] Carpentier, Steve. "Minaçu, a cidade que respira o amianto." CartaCapital, May 21, 2013. http://www.cartacapital.com.br/sustentabilidade/minacu-a-cidade-que-respira-o-amianto-8717.html (Google translation from Portuguese).

residents of the city that until 1987 were surrounded by dust. 'You would run your finger on any car on the street, it would be completely white from all the dust it had.'"[7]





- **Imports from Russia**

Ninety-nine percent of U.S. asbestos imports come from Brazil. Should that option close, a mine in Russia's Ural Mountains, in city of Asbest, is a backup plan.

Dow imported 21,164 pounds of asbestos from Russia in 2014. Then in 2016, as Olin was taking over Dow's chlor-alkali operations, a 34,901 pounds shipment from Russia arrived to feed its plant in Plaquemine, Louisiana, according to Panjiva records.

Investigative journalist Roman Shleynov shed light on the Russian operation. "Just east of the city [of Asbest] is the massive open-pit Uralasbest mine. At seven miles (11 km) long and 1-½ 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," wrote Shleynov.

[7] Carpentier, Steve. "Minaçu, a cidade que respira o amianto." CartaCapital, May 21, 2013. http://www.cartacapital.com.br/sustentabilidade/minacu-a-cidade-que-respira-o-amianto-8717.html (Google translation from Portugeuse).

"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."[8]

- **Imports of talc and products containing talc**

Table 2. Talc Imports (annual average, 2012 to 2016)		
Country	**Pounds/year**	**% of total**
Pakistan	213,237,460	32%
Canada	168,047,600	26%
China	121,922,100	19%
France	47,500,743	7%
Italy	39,164,633	6%
Japan	27,084,198	4%
Austria	17,046,122	3%
Netherlands	10,227,673	2%
India	3,524,306	1%
Norway	2,802,072	0%
Others	5,702,470	1%
Total	**656,259,377**	

Data source: U.S. International Trade Commission Dataweb, U.S. Imports for Consumption: HTS - 2526: NATURAL STEATITE, WHETHER OR NOT ROUGHLY TRIMMED OR MERELY CUT INTO BLOCKS OR SLABS OF RECTANGULAR OR SQUARE SHAPE; TALC

[8] Shleynov, Roman. "Russia: The World's Asbestos Behemoth." International Consortium of Investigative Journalists, July 21, 2010. https://www.icij.org/project/dangers-dust/russia-worlds-asbestos-behemoth

Tests of talc-bearing consumer products over the past couple of decades (see Use section below) indicate an asbestos contamination problem. Talc mineral deposits are often co-located with asbestos. EPA's preliminary information does not address this concern.

The law firm Brayton Purcell LLC warns that "talc can easily be tainted by asbestos - especially when it is mined without proper site testing. American suppliers and manufacturers often test for the presence of asbestos before mining new deposits of talc, but the same cannot be said for companies outside the United States. Huge supplies of imported talc come from China and Pakistan, and these imported products are not tracked by any government agency."[9]

Some asbestos-contaminated talc may come from as far as the mountains of eastern Afghanistan. Pakistan is a leading exporter of talc to the United States and other countries, including China. The USGS notes that these shipments "probably include talc from Afghanistan."[10] About one-third of the talc imported into the U.S. in the last five years came via Pakistan and another 19% from China. (See Table 2)

According to shipping records on the Panjiva database, a leading exporter of talc from Pakistan is MAM Enterprises of Karachi. MAM's website notes that it imports from mines in other countries, including Afghanistan.[11]

Talc mining in Afghanistan occurs in Nangarhar province, in the Achin district, near the infamous battleground of Tora Bora.[12] There, companies mine the Achin and Gunday magnesite-talc deposits, which also contain "ultramafic-hosted asbestos," according to the USGS.[13] An earlier USGS inventory of Afghanistan's resources lists the Gunday-Achin deposits as bearing "talc, asbestos, and magnesite."[14]

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[9] http://www.braytonlaw.com/blog/2015/09/the-dangers-of-talc-containing-products-contaminated-by-asbestos.shtml
[10] https://minerals.usgs.gov/minerals/pubs/commodity/talc/mcs-2014-talc.pdf
[11] FerroAlloyNet.com. "MAM Enterprises." Chinese Enterprise : Global Enterprise. Accessed April 12, 2016. http://www.ferroalloynet.com/company/mam_enterprises.html
[12] According to the USGS, "In June 2013, Amin Karimzai Ltd. of Afghanistan and HZM Marmi e Pietre Private (Pvt) Ltd. of Pakistan signed a joint-venture agreement for the production and distribution of talc in Afghanistan and Pakistan. Amin Karimzai's Ghunday talc mine production capacity was 400,000 t/yr of talc in the Kodi Khel area of Nangarhar Province, and HZM Marmi e Pietre's production capacity was 240,000 t/yr of talc in Afghanistan and Pakistan. The merger of these two companies would increase the production capacity to 640,000 t/yr of talc." Renaud, Karine. "2013 Minerals Yearbook: Afghanistan." US Geological Survey, May 2015. http://minerals.usgs.gov/minerals/pubs/country/2013/myb3-2013-af.pdf See also Maniar Group of Companies. "Talc." Talc. Accessed April 12, 2016.
[13] U.S. Geological Survey, U.S. Department of Defense Task Force for Business and Stability Operations, and Afghanistan Geological Survey. "Summaries and Data Packages of Important Areas for Mineral Investment and Production Opportunities in Afghanistan." US Geological Survey, September 2011. http://pubs.usgs.gov/fs/2011/3108/fs2011-3108.pdf
[14] U.S. Geological Survey, and Afghanistan Geological Survey. "Preliminary Assessment of Non-Fuel Mineral Resources of Afghanistan, 2007." US Geological Survey, October 2007. http://pubs.usgs.gov/fs/2007/3063/fs2007-3063.pdf

4. Use

In addition to its use in chlor-alkali production, there are other sources of asbestos on the market, including imported products containing talc and recycled asbestos-bearing materials (see End of Life section).

- **Chlorine Plants with Asbestos Diaphragms**

In 2014, fifteen chlorine plants still used asbestos diaphragms, according to a market survey.[15] Only eight of these plants reported asbestos releases in the Toxics Release Inventory (TRI) between 2012 and 2014. In a January 2017 meeting with EPA, industry representatives confirmed that there are still 15 plants running on asbestos, although the plant locations and owners are not disclosed in EPA's information document that recounts this meeting.[16]

Table 3. U.S. Chlorine Plants with Asbestos Diaphragms: Production Capacity and Asbestos Releases.

Company	Plant with Asbestos Diaphragms(*)	Chlorine Capacity (2014, tons/year)	Total pounds releases, 2012-2015	
			Air Stack Releases	Landfill Disposal
Axiall (now Westlake)	Lake Charles, LA	275,000	NR	NR
Axiall (now Westlake)	Natrium, WV	297,000	NR	77,472
Dow (now Olin)	Freeport, TX	2,278,000	NR	NR
Dow (now Olin)	Plaquemine, LA	1,068,000	NR	1,256,694
Olin	Henderson, NV	152,000	7.3 (**)	22,950
Olin	Mcintosh, AL	468,000	NR	NR
Occidental	Convent, LA	389,000	3.01	38.86
Occidental	Deer Park, TX	325,000 (2011)	NR	123,049
Occidental	Ingleside, TX	668,000	80	NR
Occidental	Geismar, LA	273,000	NR	NR

[15] "Global Chlor-Alkali Market Statistics Update," IHS Chemical, June 16, 2014
[16] https://www.epa.gov/sites/production/files/2017-02/documents/asbestos.pdf

Occidental	Niagara Falls, NY	336,000	NR	NR
Occidental	Hahnville/Taft, LA	567,000	0.28	40,492
Occidental	LaPorte, TX	580,000	NR	11,010
Occidental	Wichita, KS	182,000	NR	NR
Westlake	Plaquemine, LA	410,000 (2015)	19	NR
TOTAL	***15 plants***	***8,268,000***	***110***	***1,531,706***

NR = No asbestos releases reported to US EPA Toxics Release Inventory
(*) = Many plants have multiple technologies. Capacities listed are only for the asbestos diaphragm portions.
(**) = The Olin plant in Henderson NV also reported 0.02 lbs. in fugitive air releases.
Sources: "Global Chlor-Alkali Market Statistics Update," IHS Chemical, June 16, 2014; US EPA Toxics Release Inventory; ICIS article on DuPont (2001); ICIS article on Axiall (2015)

Only two of these companies (Axiall and Olin) were publicly identified in CDR forms for the period 2012 to 2015. The other major asbestos importer, Occidental (mailing address: Occidental Chemical Corporation, Occidental Tower 5005, LBJ Freeway, Dallas, Texas 75380-9050), is not named in any public CDR forms for asbestos. This is odd, because Occidental disclosed its name in CDR forms for other TSCA Work Plan chemicals (see, for example, our Technical Report on carbon tetrachloride). Also, Westlake Chemical releases about five pounds of asbestos each year into Plaquemine, Louisiana air, but also apparently did not file a CDR form for importing asbestos. However, unlike Occidental, there are no Panjiva import records naming Westlake during the reporting period. Perhaps it is using stockpiled material.

- **Consumer Products**

    - Baby Powder and Body Powder

In February 2017, Women's Voices for the Earth catalogued eight baby powder and 19 body powder products containing talc for sale at retail stores.[17]

    - Crayons, Crime Scene Kits, Other Children's Products

Asbestos is a frequent contaminant of talc, and has been found in numerous consumer products that use talc as filler, such as crayons. According to a compendium by the Organisation for Economic Co-operation and Development (OECD), "imported crayons in the USA and

[17] Women's Voices for the Earth, "The Unethical Defense of Talc," February 23, 2017, http://www.womensvoices.org/2017/02/23/the-unethical-defense-of-talc

Sweden, labelled 'non-toxic' have been discovered to contain high concentrations of lead and chromium and lower concentrations of asbestos."[18]

In 2015, testing by the EWG Action Fund found asbestos in four out of 28 boxes of crayons, and two "crime scene kits" for children, all of which were made in China. The authors noted, "geologically, talc and asbestos can be formed from the same parent rock. In many regions, talc deposits are contaminated with asbestos fibers." They recommended that the federal government ban the use of talc in children's products.[19] The findings from the 2015 tests echo similar results from tests in 2000 and 2007, which also found asbestos in crayons.[20]

- Cosmetics

According to Brayton Purcell LLP: "The FDA has strongly considered regulating talc used in cosmetics. An FDA memo circulated in 1976 expressed concerns that cosmetics manufacturers were not carefully monitoring the safety of talc supplies. Similar concerns were raised at the FDA in 1994 and again in 2001. In all three cases, the FDA considered a proposal to better regulate asbestos levels in talc. Unfortunately, those plans and suggestions never resulted in changes."[21]

- **Building Materials**

  - Window Glazing

In 2007, the Asbestos Disease Awareness Organization tested DAP 33 window glazing (obtained from Lowe's and The Home Depot). It found asbestos in three of four tests, with asbestos content as high as 1.4%.[22] DAP Products, whose caulk was found to have asbestos nearly a decade ago, says it does test its fillers for asbestos. As a part of its overall product stewardship program, through a 3rd party firm, DAP frequently tests all of its fillers, including talc, for asbestos, said Neema Toolaabee, the company's regulatory and environmental manager. He said DAP Products tests at least once a year per filler source, more frequently for new sources of filler.[23]

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[18] Resource Compendium of PRTR Release Estimation Techniques, Part 4: Summary of Techniques for Releases from Products, Version 1.0 http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=env/jm/mono%282011%297/part2&doclanguage=en

[19] EWG Action Fund, Bill Walker, and Sonya Lunder. "EWG Action Fund Tests Find Asbestos in Kids' Crayons, Crime Scene Kits." EWG Action Fund, July 2015

[20] Gupta, Alok. "Exclusive ADAO Guest Asbestos Blog by Alok Gupta 'Crayons of Cancer.'" Global Ban Asbestos Network, July 12, 2015.

[21] http://www.braytonlaw.com/blog/2015/09/the-dangers-of-talc-containing-products-contaminated-by-asbestos.shtml

[22] Asbestos Disease Awareness Organization. "Asbestos Disease Awareness Organization Releases Findings That Reveal Evidence of Asbestos in Everyday Products," November 28, 2007. http://www.ewg.org/sites/default/files/ADAOasbestos_20071204.pdf

[23] Personal communication, April 7, 2016

- Roofing

The federal government still allows the use of asbestos in roofing.[24] In 2011, an estimated 660 metric tons of asbestos were used in roofing products in the U.S.[25] By 2015, however, the amount of asbestos used in roofing fell to less than 35 tons.[26] The latest USGS summary, published in January 2017, does not discuss this use.[27]

Common asbestos-containing roofing products include base flashing, felt and tar or "Black Jack," a common term for the asbestos-bearing mastic that contaminates shingles.[28]

5. End of Life

Another toll taken during the life cycle of asbestos comes at the end of its service life in products or chemical production processes. Most asbestos waste from chlor-alkali plants is deposited in landfills. Roofing products bearing asbestos are recycled. Little is understood about potential pathways for exposure during the transportation, transfer, and permanent disposal of chlor-alkali asbestos waste to landfills, and the potential for airborne exposure is not considered in the recycling of roofing shingles that can be contaminated by historical uses of asbestos.

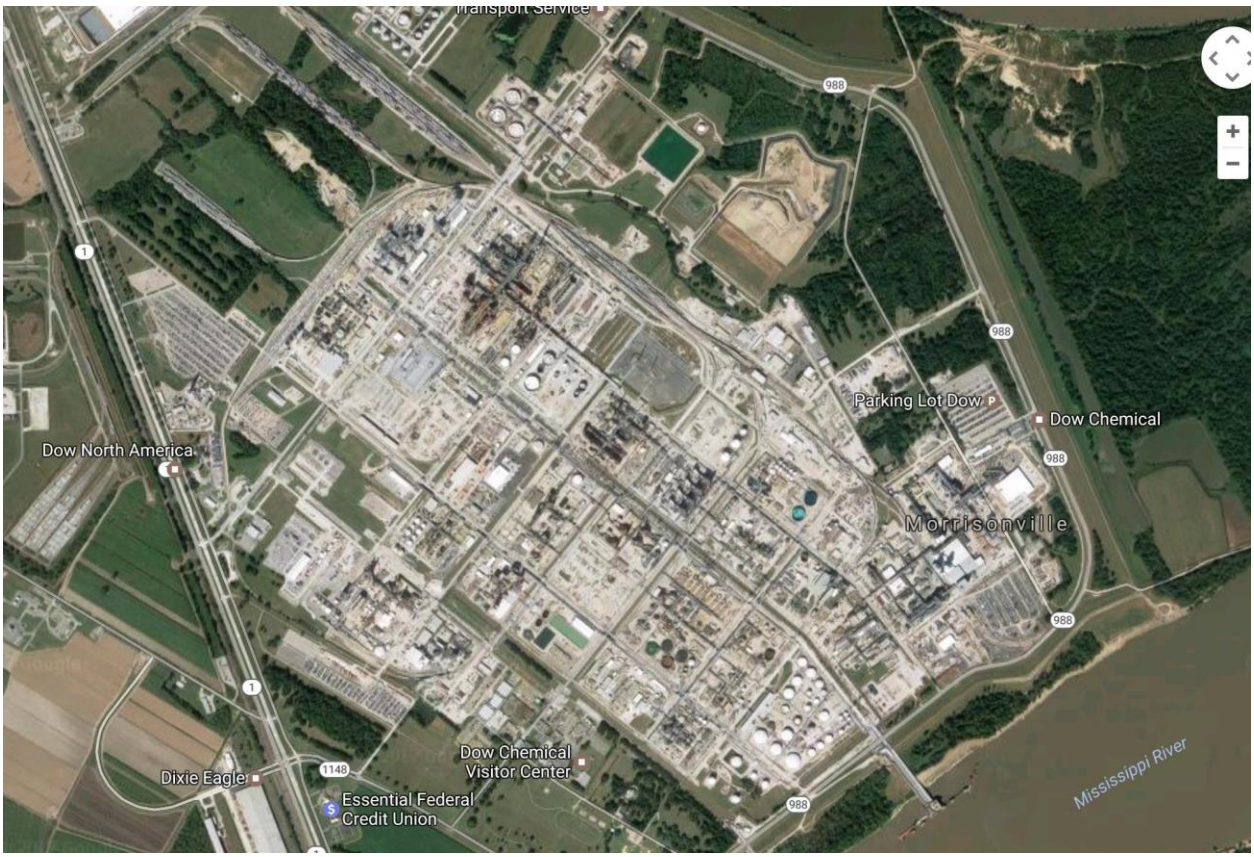
- **Landfilling Asbestos Waste From Chlor-Alkali Plants**

Table 4. Top destinations for asbestos waste, 2012 to 2015

Landfill	Address	Asbestos Received (pounds)	Waste Generating Company	Chlor-Alkali Location(s)
Dow Chemical	21255 Hwy 1, Plaquemine, LA	1,256,491	Dow Chemical	on-site
Allied Waste/BFI McCarty Road Landfill	11013 Beaumont Highway, Houston, TX	133,987	Occidental	Deer Park, TX and La Porte, TX
Meadowfill Landfill	Rte 2, Dawson Road, Bridgeport, WV	77,472	Westlake (ex Axiall and PPG)	Natrium, WV

[24] https://www.epa.gov/asbestos/us-federal-bans-asbestos#notbanned
[25] https://minerals.usgs.gov/minerals/pubs/commodity/asbestos/mcs-2012-asbes.pdf
[26] https://minerals.usgs.gov/minerals/pubs/commodity/asbestos/mcs-2016-asbes.pdf
[27] https://minerals.usgs.gov/minerals/pubs/commodity/asbestos/mcs-2017-asbes.pdf
[28] "Common Asbestos-Containing Products." Minnesota Department of Health. http://www.health.state.mn.us/divs/eh/asbestos/products/index.html

Apex Regional Landfill	13550 N Highway 93, Las Vegas, NV	16,760	Olin	Henderson NV



Between 1987 and 2015, Dow landfilled 9.2 million pounds of asbestos waste at its chlorinated chemical production facility in Plaquemine, La. This chlor-alkli facility is now owned by Olin. GOOGLE EARTH IMAGE

- **Asphalt Shingle Scrap**

Asbestos is a potential concern in recycled asphalt shingle scrap. In 2007, about 1.5 percent of 27,000 asphalt shingle samples collected across the country contained over one percent asbestos, mainly from related materials, such as mastic coatings.[29] Each year, roofing replacement and installation generates up to 12 million tons of recycled asphalt shingles (RAS).[30] Asphalt shingle scraps are mechanically processed before they are delivered to central

[29] Townsend, T., Powell, J., Xu, C. Environmental Issues Associated With Asphalt Shingle Recycling. Construction Materials Recycling Association, Asphalt Shingle Recycling Project, US EPA Innovations Workgroup, prepared by Innovative Waste Consulting Services. October 19, 2007. http://www.shinglerecycling.org/sites/www.shinglerecycling.org/files/shingle_PDF/EPA%20Shingle%20Report_Final.pdf

[30] EPA estimates the amount of roof installation scrap as between 7-10 million tons. http://www.crushcrete.com/EPA%20Report%20on%20Recycled%20Shingles%20in%20Hot%20Mix%20Asphalt%20july2013.pdf NAPA estimates the figure to be as high as 12 million tons. https://www.asphaltpavement.org/PDFs/EngineeringPubs/QIP129_RAP_-_RAS_Best_Practices_lr.pdf

asphalt mixing plants. Road construction consumes more than 10 percent of RAS. The National Asphalt Pavement Association (NAPA) estimates that the amount of RAS in asphalt pavement and road base, nationwide, peaked at 2.5 million tons in 2010 and dropped to 1.7 million tons in 2014.[31] NAPA does not recommend testing for chemicals of concern, such as PAHs or asbestos, in RAS.[32] Instead, NAPA describes asphalt pavement as "inert." The trade association claims, "No materials are leached from the pavement itself (because it is waterproof)."[33] The industry relies upon leaching studies from 2002 and earlier to assert "asphalt pavement's inert quality."[34]

6. Potentially Vulnerable Populations / Exposure Scenarios

The information summarized above points to many vulnerable populations, including:

- Workers in Brazil and Russia bagging asbestos.
- Fenceline communities adjacent to asbestos mine operations, chlor-alkali plants, and facilities that handle asbestos waste.
- Workers transferring asbestos everywhere: from mines to ships to unloading and distribution hubs to chemical plants and the landfills that receive asbestos or asbestos-bearing materials.
- Children playing with products, like crayons, contaminated with asbestos.
- Residents and installers using asbestos-contaminated building products like window caulking.
- Workers at recycled asphalt shingle grinding operations (if screening for asbestos is inadequate) and at asphalt ready mix plants that use the ground shingles.

The asbestos trail will grow cold only when the last plant that consumes it, and the last mine that produces it, are decommissioned. Even then, there will be a reckoning. When the obsolete chlor-alkali factories close, they are dismantled, and the toxic infrastructure, sometimes a century old or more, enters the waste stream. The sooner this happens, the less asbestos will be bagged in Brazil, released into the air from chemical plants in the U.S., and dumped into landfills.

[31] https://www.asphaltpavement.org/PDFs/IS138/IS138-2014_RAP-RAS-WMA_Survey_Final.pdf
[32] https://www.asphaltpavement.org/PDFs/EngineeringPubs/QIP129_RAP_-_RAS_Best_Practices_lr.pdf
[33] https://www.asphaltpavement.org/PDFs/SR206-EnviromentalImpact-web.pdf
[34] http://www.asphaltfacts.com/facts/sustainalbility-1/neither-asphalt-pavement-reclaimed-asphalt-pavement-rap-leach-petroleum/

7. Health and Environmental Hazards Associated with Asbestos

Hazards taken from Pharos CML, February 24, 2017
Hazards associated with CAS: 1332-21-4 (Additional asbestos CAS numbers - 77641-59-9 and 12413-45-5 do not add any additional hazards or lists. CAS 12001-28-4, crocidolite asbestos, would contribute some additional lists, but no difference in hazards or levels reported below)
Purple hazards are of urgent concern to avoid; Red are very high concern to avoid; Orange are high concern to avoid. More details on hazards and hazard levels here.

Hazard and Level	Sources
Human Health Hazards	
Cancer	• IARC - Group 1 - Agent is Carcinogenic to humans • US EPA - IRIS Carcinogens - (1986) Group A - Human Carcinogen • EU - R-phrases - R45 - May cause cancer • US NIH - Report on Carcinogens - Known to be a human Carcinogen • CA EPA - Prop 65 - Carcinogen • US CDC - Occupational Carcinogens - Occupational Carcinogen • MAK - Carcinogen Group 1 - Substances that cause cancer in man • Japan - GHS - Carcinogenicity - Category 1A • US EPA - PPT Chemical Action Plans - Known human carcinogen - TSCA Criteria met *
Gene Mutation	• Japan - GHS - Germ cell mutagenicity - Category 2
Organ Toxicant	• Japan - GHS - Specific target organs/systemic toxicity following repeated exposure - Category 1 • EU - R-phrases - R48: Danger of serious damage to health by prolonged exposure
Mammalian	• US EPA - PPT Chemical Action Plans - Acute toxicity from inhalation exposures - TSCA Criteria met * • US EPA - PPT Chemical Action Plans - Chronic toxicity from inhalation exposures - TSCA Criteria met *

*Hazard of asbestos compounds

Docket ID Number: EPA-HQ-OPPT-2016-0736

Consumer Appendix

Consumer Products Containing Asbestos

Introduction. Below is a list of products sold on retail websites, and thus available for purchase by consumers, that are described as containing asbestos or verified to contain asbestos from Material Safety Data Sheets (MSDSs).

Methodology. To find these products, Safer Chemicals, Healthy Families staff searched on www.amazon.com for the word "asbestos" and for these varieties of asbestos: chrysotile, amosite, crocidolite, tremolite, actinolite, and anthophyllite. We also searched on www.amazon.com under "Automotive Parts & Accessories" for "asbestos." After reviewing the list of products in EPA's February 2017 "Preliminary Information on Manufacturing, Processing, Distribution, Use, and Disposal" for asbestos, we determined which of these products are sold on retail websites. An asterisk means the product is on EPA's February 2017 list.

Notes. The product descriptions quoted below are from the seller's website, unless otherwise noted. Safer Chemicals, Healthy Families has not verified the accuracy of the product descriptions. Some of the webpages below have the following disclaimer: "Actual product packaging and materials may contain more and different information than what is shown on our website."

Highlighting the need for additional investigations. In the ingredient listing of MSDSs for a few products sold on The Home Depot's website, certain types of asbestos - tremolite and anthophyllite – are declared to be "nonasbestiform."[1] EPA should investigate whether these components pose a risk that is similar to their asbestiform analogs.

Additionally, asbestos has been detected in products where talc is listed as an ingredient and asbestos is not. One rock can contain both substances, and asbestos can be inadvertently extracted when talc is mined. Talc is an ingredient in certain cosmetics. Women's Voices for the Earth recently issued a list of 27 body or baby powder products containing talc that are sold on the Amazon, Dollar Tree,

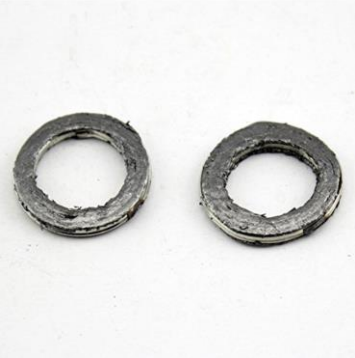
[1] Rust-Oleum Marine Blue Flat Boat Bottom Antifouling Paint- http://www.homedepot.com/catalog/pdfImages/89/893667be-cd32-416f-b559-14736534d610.pdf; Rust-Oleum Marine Black Flat Boat Bottom Antifouling Paint - http://www.homedepot.com/catalog/pdfImages/cf/cf04a0d6-2f3c-41c1-8acd-a8d359033e18.pdf; Rust-Oleum Professional White Clean Metal Flat Rust Preventive Primer - http://www.homedepot.com/catalog/pdfImages/bf/bf895e6e-1e84-443e-b399-8a4071e47f80.pdf

Walgreens, or Walmart websites.[2] In 2009 and 2010, the U.S. Food and Drug Administration commissioned asbestos testing on 61 talc-containing powder products and other cosmetics.[3] No asbestos was detected.

However, talc is found in additional products. For example, a search for "talc" on www.amazon.com revealed 10,000+ results just in the Beauty and Personal Care products section and over 9,000 in the Health, Household & Baby Care section. Additionally, we searched on www.homedepot.com via Google Advanced Search for talc's CASRN, 14807-96-6, and the acronym "MSDS" and found 123 results (for different types of paint, etc.) Asbestos has been detected in talc-containing products ranging from crayons to building materials. EPA should use its authority to order testing by methods achieving low detection limits to determine whether products containing talc have asbestos, even for products that fall outside TSCA's scope.

AUTOMOTIVE PARTS DESCRIBED AS CONTAINING ASBESTOS

- ***AR DONGFANG Motorcycle Asbestos Pad Washer Gasket Spacer 23325 for Motorcycle Moped Scooter***



Product Description:
"It will fit . . . Many Motorcycles Moped Scooter ATV Gokarts Buggys."
"Package included . . . Asbestos Pad"

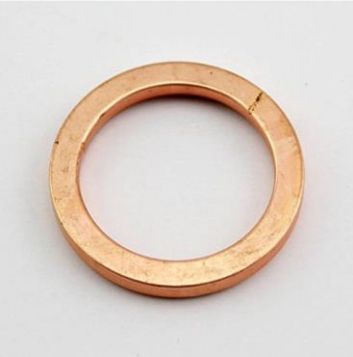
Sold at: https://www.amazon.com/AR-DONGFANG-Motorcycle-Asbestos-Scooter/dp/B015XO69EI/; a similar item is also sold here.

MSDS not available

[2] Women's Voices for the Earth, "The Unethical Defense of Talc," February 23, 2017, http://www.womensvoices.org/2017/02/23/the-unethical-defense-of-talc

[3] U.S. Food and Drug Administration, "Talc," last updated March 19, 2014, https://www.fda.gov/Cosmetics/ProductsIngredients/Ingredients/ucm293184.htm

- ***AR DONGFANG Motorcycle Asbestos Pad Washer Gasket Spacer 30*40*5 for Motorcycle***



Product Description:
"It will fit . . . Many Motorcycles Moped Scooter ATV Gokarts Buggys"
"Package included . . . Asbestos Pad"

Sold at: https://www.amazon.com/AR-DONGFANG-Motorcycle-Asbestos-Washer/dp/B015XO6D9O

MSDS not available

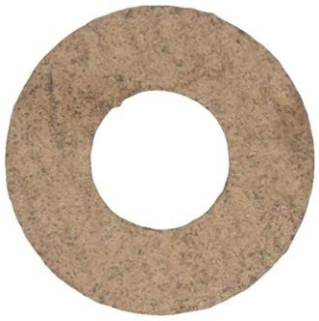
- ***Asbestos Pad for CF250cc Water-cooled ATV, Go Kart, Moped, Scooter***

Product Description:
"Asbestos Pad for CF250cc Water-cooled ATV, Go Kart, Moped, Scooter, 4 Wheeler, Quad Bikes, Dune Buggy, Pit Bike, Trail Bike, Go-karts, Go Cart, Go-Kart."

Sold at: https://www.amazon.com/Asbestos-CF250cc-Water-cooled-Scooter-Go-karts/dp/B00G5OKMYO; http://www.motopartscenter.com/asbestos-pad-for-cf250cc-watercooled-atv-go-kart-moped-scooter-p-1811.html

MSDS not available

- ***Dutton-Lainson Company 205123 Asbestos Brake Liner****



No product description

Sold At: https://www.amazon.com/Dutton-Lainson-Company-205123-Asbestos-Brake/dp/B005G20I7M; https://www.dutton-lainson.com/proddetail.php?prod=205123_RP_CD4000_9_14

MSDS not available

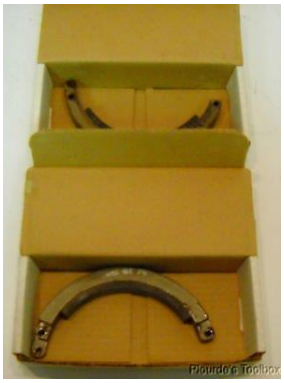
- ***INTRUPA B-1049 Brake Shoe***

Product Description:
"Warning: Contains Asbestos Fibers!"

Sold at: https://www.amazon.com/INTRUPA-B-1049-Brake-Shoe-Contains/dp/B00HJESWQ4

MSDS not available

- ***INTRUPA B-1050 Asbestos Brake Shoes***



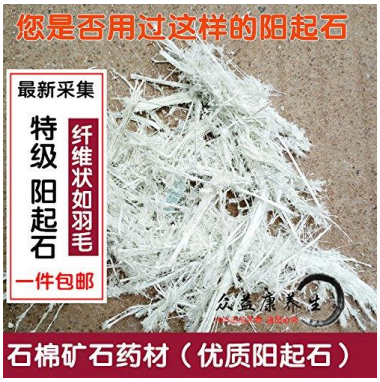
Product Description:
"Contains Asbestos Fibers!"

Sold at: https://www.amazon.com/INTRUPA-B-1050-Asbestos-Brake-989551/dp/B00HBY5N5U

MSDS not available

CHINESE HERBAL MEDICINES DESCRIBED AS CONTAINING ASBESTOS

- ***Chinese herbal medicines wholesale superfine fiber 500g asbestos fiber asbestos type ore sheep from stone***

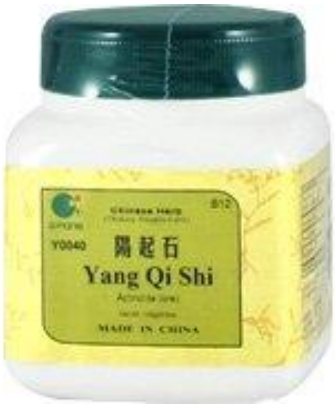


Product Description:
"Best slimming tea."
"Smooth and slightly sweet with a rich taste and strong aroma"

Sold at: https://www.amazon.com/Chinese-medicines-wholesale-superfine-asbestos/dp/B01KOP28G4. Has disclaimer.

MSDS not available

- ***Yang Qi Shi - Actinolite, 100 grams***

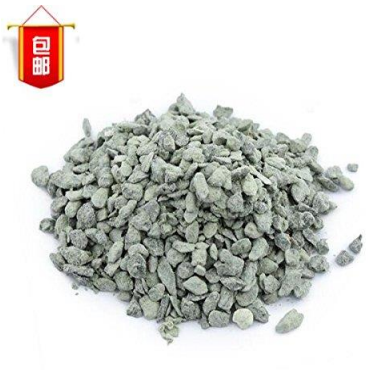


Product Description:
"For tonifying the yang"

Sold at: https://www.amazon.com/Yang-Qi-Shi-Actinolite-grams/dp/B0041M42UM. Has disclaimer.

MSDS not available

- ***Yang Shi Shi Qiyang actinolite medicine***



About the Product/ Product Description:
"100% natural herbs"
"As long cylindrical, needle like or fibrous aggregate, irregular block, flat long strip or short column . . . White, grayish white or greenish white, with silk like luster. . . . Can be broken, broken section is irregular, longitudinal fibrous or fine columnar." [sic]

Sold at: https://www.amazon.com/Yang-Qiyang-actinolite-medicine-500g/dp/B01N7EUFUW. Has disclaimer.

MSDS not available

HOME IMPROVEMENT PRODUCT CONTAINING ASBESTOS

- ***CRL Palmer Mirro-Mastic****

Product Description:
". . . an adhesive mastic formulated for adhering plate glass mirror and acrylic mirror to various substrates, such as drywall, wood, glass, metal, or tile."

Sold At: https://www.amazon.com/CRL-Palmer-Mirro-Mastic-Ounce-Cartridge/dp/B000KZR2H4

Older formulation (from 2010/2011) contains chrysotile asbestos fibers (hydrated magnesium silicate) completely encapsulated by asphalt, at 22.4% by weight, according to the MSDS: http://mirro-mastic.com/wp-content/uploads/2011/05/Mirro-Mastic-MSDS.pdf

POLISHED ASBESTOS STONE

- ***Chrysotile Tumble Stone***

Product Description:
"Understood to stimulate psychic senses, this Chrysotile Tumble Stone is believed to help one connect with past lives and the history around them . . . Tumble stones are perfect as healing stones, easy to carry with you or to offer as a crystal gift for those who could benefit from them."

Sold at: https://www.amazon.com/Chrysotile-Tumble-Stone-20-25mm-Pack/dp/B00O72H4WE/. Has disclaimer.

MSDS not available

- ***Unusual Asbestos Polished Sphere***

Substantive product description not available

Sold at: https://www.amazon.com/Flo7314-Unusual-Asbestos-Polished-Sphere/dp/B00SK3CLA6

MSDS not available