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# Asbestos Perspectives



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# Presentation Objectives

- Discuss asbestos related health concerns, products, exposure sources, local program highlights, laws and government action/inaction.
- Increase your general understanding of asbestos issues as they have evolved in CA and the U.S. over the last century.



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# Asbestos contaminated products have found their way into many unexpected aspects of our lives...



For use in Baking Bread, Pastry,  
Fish, Game, etc.  
Did you ever burn a Roast?  
Try our

**ASBESTOS  
SHEETS**

and it will never  
happen again.  
Size of sheets,  
9 x 14 inches.  
12 sheets  
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book.

When  
the ar-  
ticle is  
sufficiently  
browned on  
top, place the AS-  
BESTOS SHEET loose-  
ly over and it needs no  
further attention.

Price, postpaid, 25c.  
Send for our Catalogue of  
Kitchen Specialties.

**GEO. E. THOMAS MFG. CO.**  
Agents wanted      Memphis, Tenn.

**ASBESTOS BAKING PAPER SHEETS**



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# Asbestos improved building materials...

Fibers are basically chemically inert. They do not evaporate, dissolve, conduct heat or electricity, burn or undergo significant reactions with most chemicals. They are insoluble in water and organic solvents.



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- Historically, asbestos exposures came from textile mills, friction product manufacturing, mining, shipyards, cement pipe fabrication, and insulation manufacture and installation. *NIOSH Roadmap, 2011*



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- Occupational exposures now occur more frequently from maintenance activities or remediation of buildings containing asbestos.

*NIOSH Roadmap, 2011*



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# Production & Consumption Statistics

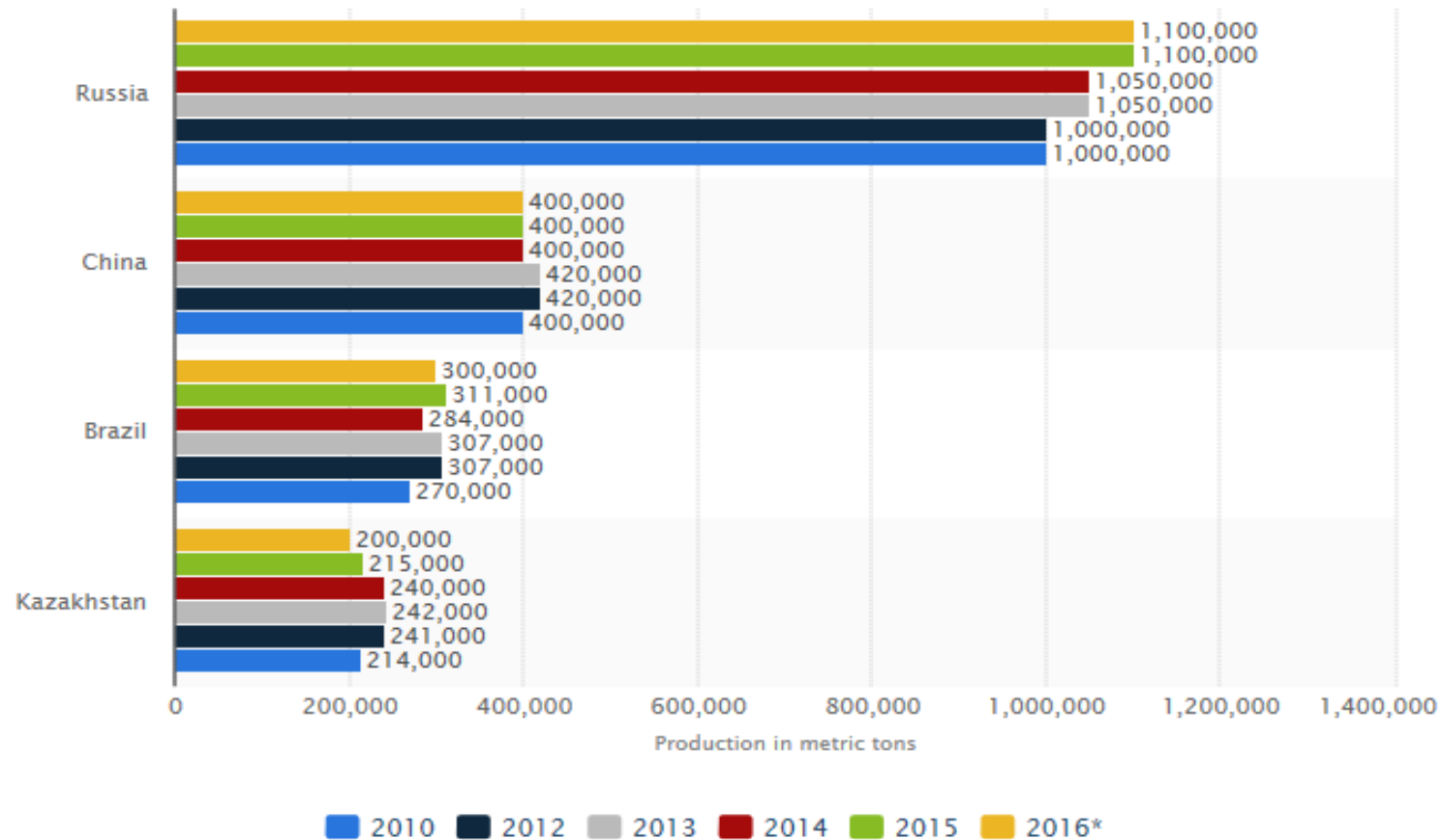
- The world has 200 million tons of identified asbestos resources
- US imported approximately 340 tons of chrysotile in 2016
- Imported primarily from Brazil
- 90% of consumption is for the chlor-alkali industry
- The rest is used for limited number of roof and non-roof coatings, adhesives, sealants, membranes and gaskets

*2011-2015 USGS*  
*2016 EPA*  
*2014 WHO*



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# Where's it coming from?



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# So what is the problem?



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- According to the American Thoracic Society “asbestos has been the largest cause of occupational cancer in the United States and a significant cause of disease and disability from non-malignant disease.”



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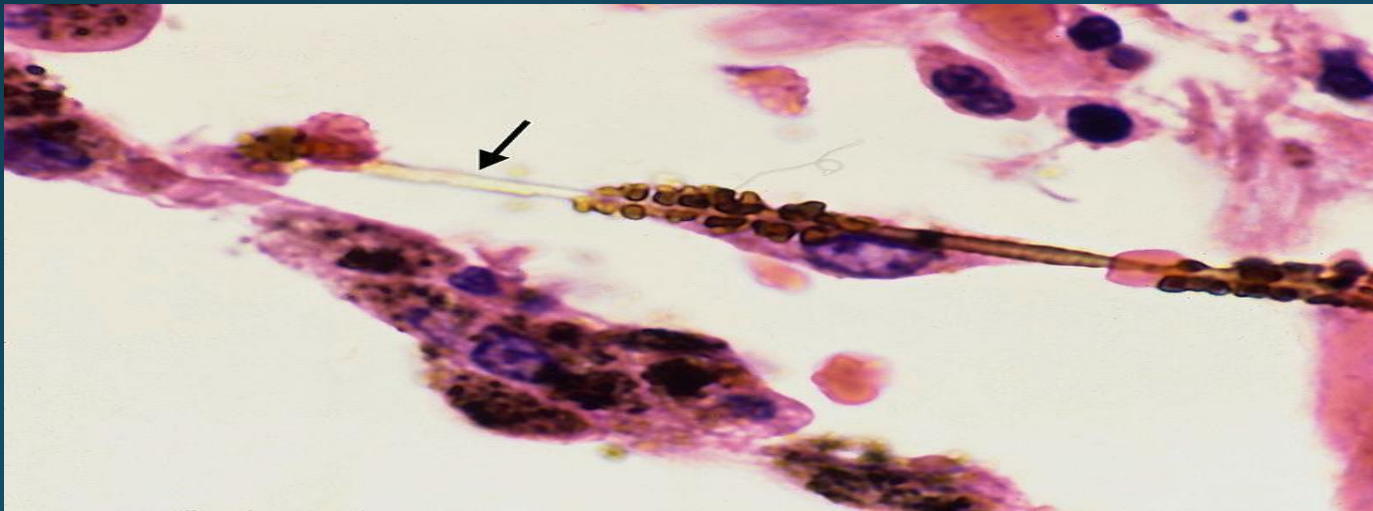


# Inhaling Asbestos Fibers Causes Cancer

- Body's natural defenses (white blood cells/macrophages) attempt to destroy fibers
- Asbestos fibers rupture the macrophage, releasing acids
- Lung walls, alveoli, are scarred by acids
- Disease ensues



*Anthophyllite, Georgia. Source: USGS Denver Microbeam Laboratory*



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# Who says there's no role for government?



Evidence supports synergism between asbestos exposure and smoking in causing lung cancer.



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# Sacramento AQMD Regulates Asbestos Under Two Programs



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- **Asbestos in Building Materials**

Delegated to implement U.S. E.P.A.'s NESHAPS for Asbestos (40 C.F.R. §61.140)

- **Natural Occurrences of Asbestos in Soil**

CH&SC Section 39666-Implement and enforce ATCM'S which includes the Asbestos Airborne Toxic Control Measure for Construction



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# Asbestos in Building Materials

- SMAQMD Asbestos Rule 902 Adopted in 1975 and revised 6 times
- Per containment notification requirements
- 3-5-7 Sampling protocol for all surfacing materials, not just OSHA's
- Defining consultants, architects, property managers and others as operators
- Must have an operating Manometer
- Must have View Ports
- Alternative Abatement methods
- e-notifications/e-pay



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# What is working...

- Expanding our relationship with Building Departments and accessing their permit tracking programs which streamlines application process
- Annual presentations to agencies and industry
- Most business conducted electronically
- Surveillance and Inspections
- Daily consulting hours



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# Program Stats...

- FFY 16/17 yielded \$322,105.00 from 1023 project notifications
- Highest penalty this year \$107,000.00
- 95% of cases resolved through MSP
- Most violations are FT survey or notify
- Inspection strategy to visit all abatement jobs and conduct more surveillance
- 2 Inspectors for 994 Sq/Miles and 1.5 million people
- ACM's/ACCM's found primarily in roofing mastics and flooring materials in newer buildings 1990-current



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# Asbestos In Soil aka NOA

- 2002, CARB Promulgated the NOA ATCM (Section 93105) for Construction and Grading Projects
- Since 2006, there have been 85 notified NOA projects covering 1,601 acres
- Many property owners and developers have complied with ATCM requirements having submitted either a request for exemption through GE or an asbestos dust mitigation plan (ADMP) for their projects in the NOA review area
- Others have failed to do so and in some instances have received Notices of Violation amounting to 11 cases
- The District has not required air sampling since 2004 with the Vista Del Lago HS project and generally reviews GE's and ADMP's within one week of submittal



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# This is How We Do it...

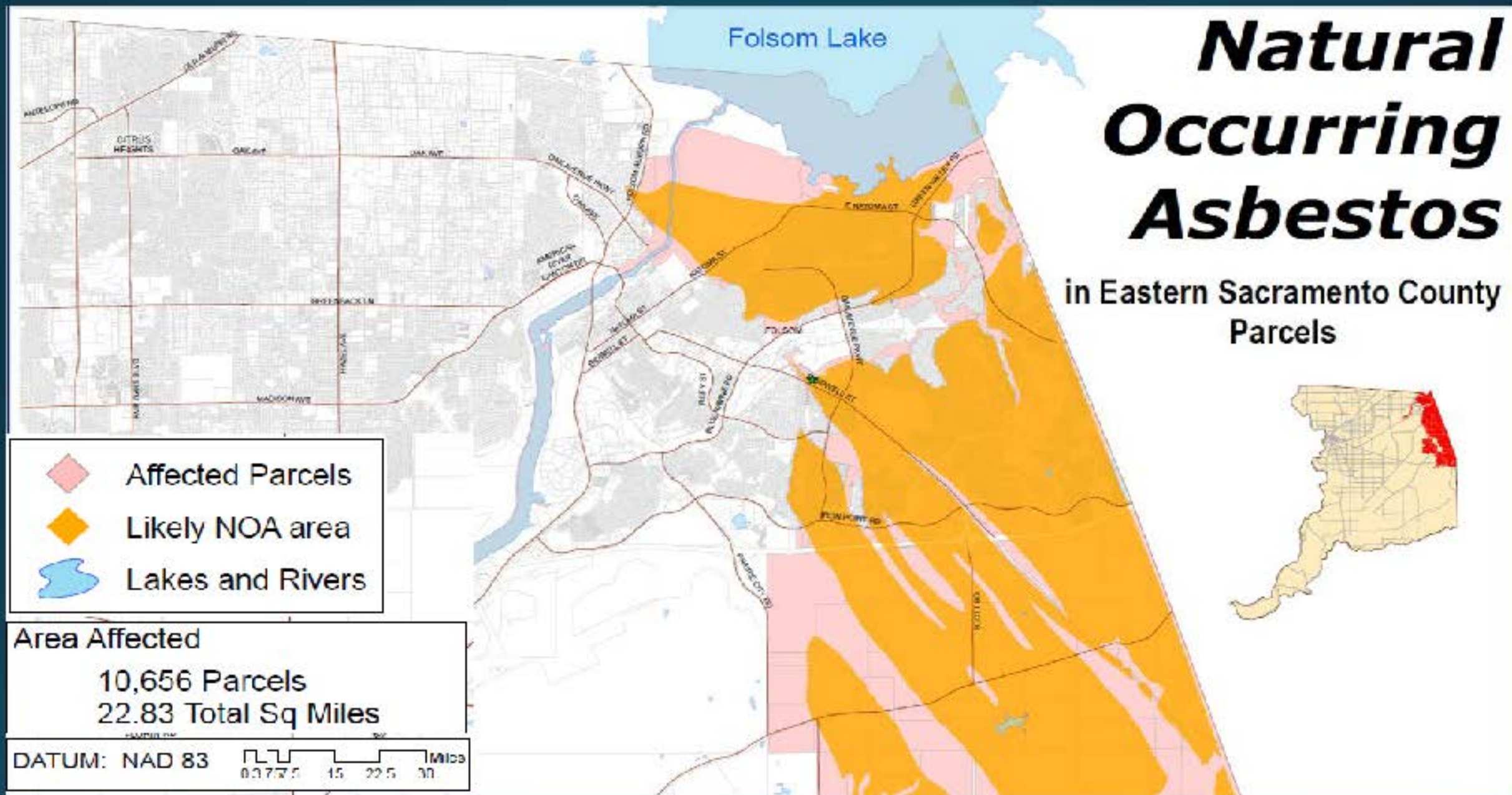
- The District's NOA webpage has posted the CGS Special Report 192, a parcel map of Eastern Sacramento County showing "Areas Moderately Likely to Contain Asbestos," forms and other information relevant to NOA projects
- Applications/fees paid in person, on line or via US post
- Daily Consulting Hours



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# *Natural Occurring Asbestos*

in Eastern Sacramento County  
Parcels





# We work with other agencies...

- The SMAQMD works with local permitting agencies within the city of Folsom and Sacramento county to ensure constituents are aware of the ATCM requirements
- The City of Folsom and Sacramento County added “tags” to all parcels in the NOA area that are greater than one acre in size and refers them to us



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# Employing Adaptive and Various Violation Resolution Measures...

- MSP
- Referral to In-house counsel
- Referral to DA's taskforce
- Work with other agencies
- Small Claims Court
- Superior Court with Counsel
- Collections
- Receivership



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# What do the FEDS think of Asbestos?



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# In the 2000's, Half of Congress Tried To Do Something with Asbestos...

2002-Senators introduced a bill to ban asbestos, but industry lobbyists and their allies in Congress repeatedly blocked it.

2007-Ban Asbestos in America Act passed the Senate unanimously.

Bill was gutted in committee: instead of asbestos *products*, the bill that reached the Senate floor would have banned only asbestos *material*. The effect of this language would have been to legalize any product containing up to one percent asbestos by weight. In the end, even this watered-down bill could not get through the House and to the President's desk.



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# What was banned?

- Corrugated paper
- Roll-board
- Commercial paper
- Specialty paper
- Flooring felt
- “new uses” of asbestos



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# What was not banned?

- Cement corrugated sheet
- Cement flat sheet
- Clothing
- Pipeline wrap
- Roofing felt
- Vinyl floor tile
- Cement shingle
- Millboard
- Cement pipe
- Transmission Parts
- Clutch facings
- Friction materials
- Brake Parts
- Gaskets
- Roofing Materials

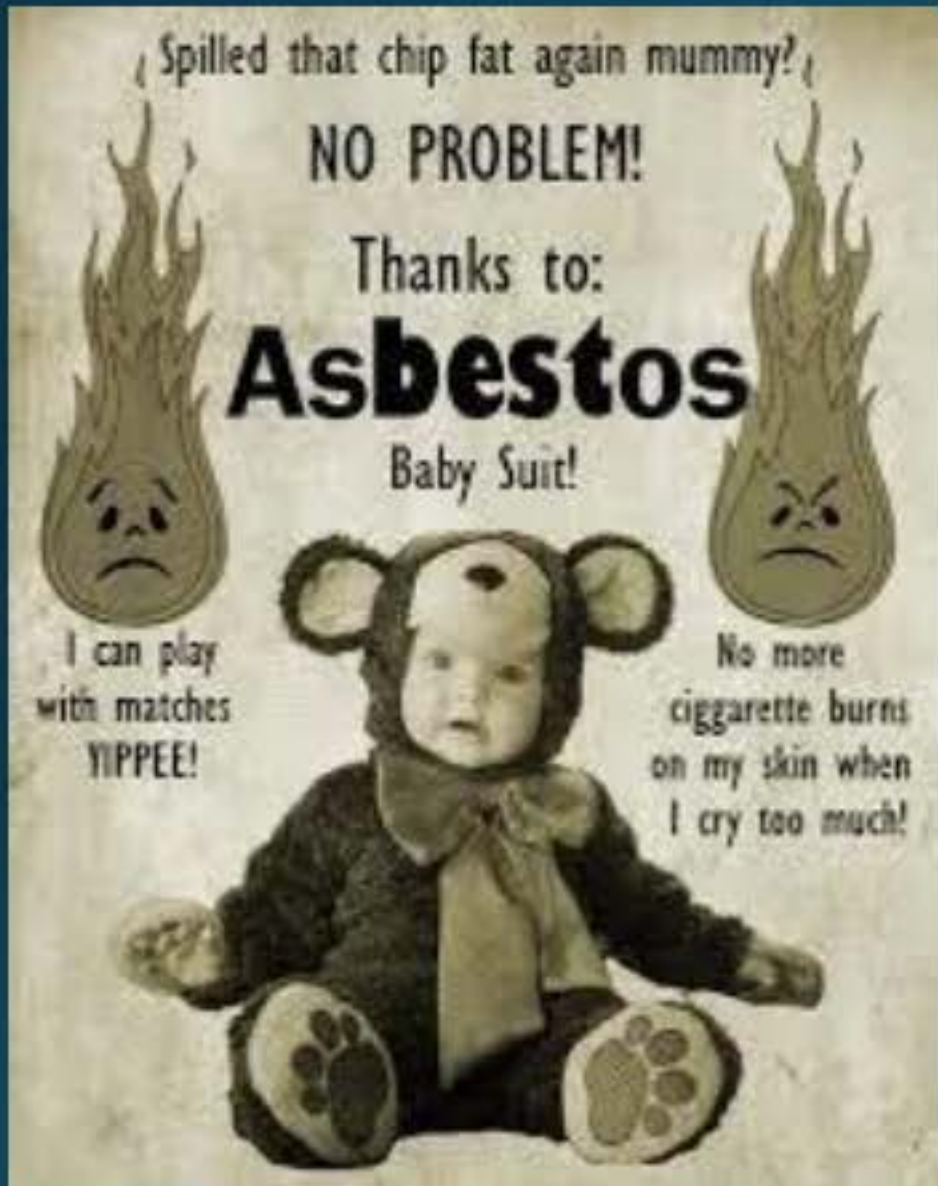


# Clean Air Act Banned Asbestos Products and Uses

- Asbestos pipe and block insulation on facility components, such as boilers and hot water tanks, if the materials are either pre-formed (molded) and friable or wet-applied and friable after drying.
- Spray-applied surfacing asbestos-containing materials >1% asbestos to buildings, structures, pipes, and conduits unless certain conditions specified under [40 CFR 61, Subpart M](#) are met.



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# EPA largely de-invested from the TSCA side of Asbestos in 2012

- Due to an overall reduction in EPA's resources in the fibers program, EPA will no longer be dedicating staff to address questions regarding the TSCA Asbestos program; namely, AHERA and the asbestos ban.



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- However, EPA is committed to providing the public with accurate information about AHERA and the asbestos ban, and therefore we have greatly increased the usability of our web resources including an expansion of Frequently Asked Questions and providing access to them via a searchable database.
- In addition, the TSCA Hotline is still available as a resource for answering questions related to asbestos.



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# What is the EPA doing with Asbestos Now?

- June 22, 2016, the Frank R. Lautenberg Chemical Safety for the 21<sup>st</sup> Century Act passed which amended the Toxic Substances Control Act
- As a result, on December 2016, EPA published a list of 10 chemical substances that are the subject of the Agency's initial chemical risk evaluations (81 FR 91927), as required by TSCA § 6(b)(2)(A).
- Asbestos was one of these chemicals.
- Using TSCA Definition of Asbestos-*asbestiform varieties of six fiber types – chrysotile (serpentine), crocidolite (riebeckite), amosite (cummingtonite-grunerite), anthophyllite, tremolite or actinolite.*"



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# Scope of the Risk Evaluation for Asbestos

- Will not Evaluate “legacy uses” of asbestos
- Will evaluate exposure risk in current and ongoing uses such as in the chlor-alkali industry
- EPA will take public comments to refine current scope
- Will look at 10 prior risk assessments including Libby but the Libby Amphiboles are only partially regulated so how do they reconcile that?
- Will this really target the issues? Not for this generation.



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Use Status*	Product Category	Use Example	Reference
Known Use	Asbestos Diaphragms	Chlor-alkali Industry	U.S. EPA (2017c); Comment ID <a href="#">EPA-HQ-OPPT-2016-0736-0041</a> ; Comment ID <a href="#">EPA-HQ-OPPT-2016-0736-0063</a> Comment ID <a href="#">EPA HQ OPPT 2016 0736 0067</a>
	Sheet Gaskets	Chemical Manufacturing	
Evidence of Use	Industrial Friction Products	Brake Blocks in Oil Industry	Preliminary Use Information <a href="#">EPA-HQ-OPPT-2016-0736-0005</a>
	Aftermarket Automotive Brakes	Passenger Vehicles	
	Other Vehicle Friction Products	Non-passenger Vehicles	
	Adhesive and Sealants	Mirror adhesive; tile cement	
Reasonably Foreseen Use	Roof and Non-roof Coatings	Roofs/Foundations; Mastics	Preliminary Use Information <a href="#">EPA HQ OPPT 2016 0736 0005</a>
	Other Gaskets and Packing	Washers	
	Building Materials	Imported Cement	
Reasonably Foreseen Use	Woven Products	Imported Textiles	Preliminary Use Information <a href="#">EPA HQ OPPT 2016 0736 0005</a>
	Other	Articles not specified	

\*Known Use, Evidence of Use and Reasonably Foreseen Use are represented by three different colors in the initial life cycle diagram.



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# Interesting Preliminary Findings

- EPA staff conducted an online search using various search terms to determine any currently available asbestos-containing products in the United States.
- EPA found little evidence of continued asbestos use. Consumer activities using these products would likely be limited to small-scale do-it-yourself projects...good thing there's no law prohibiting exposure to yourself.
- But...
- In 2015 reporting year, 314 pounds of friable asbestos were released to air (from both fugitive and point source air emissions)



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# Healthy on the inside and out?

Synthetic Slate Roofing Tile



2 layers of 10% chrysotile shingles



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# How else is Asbestos Regulation Relative today?



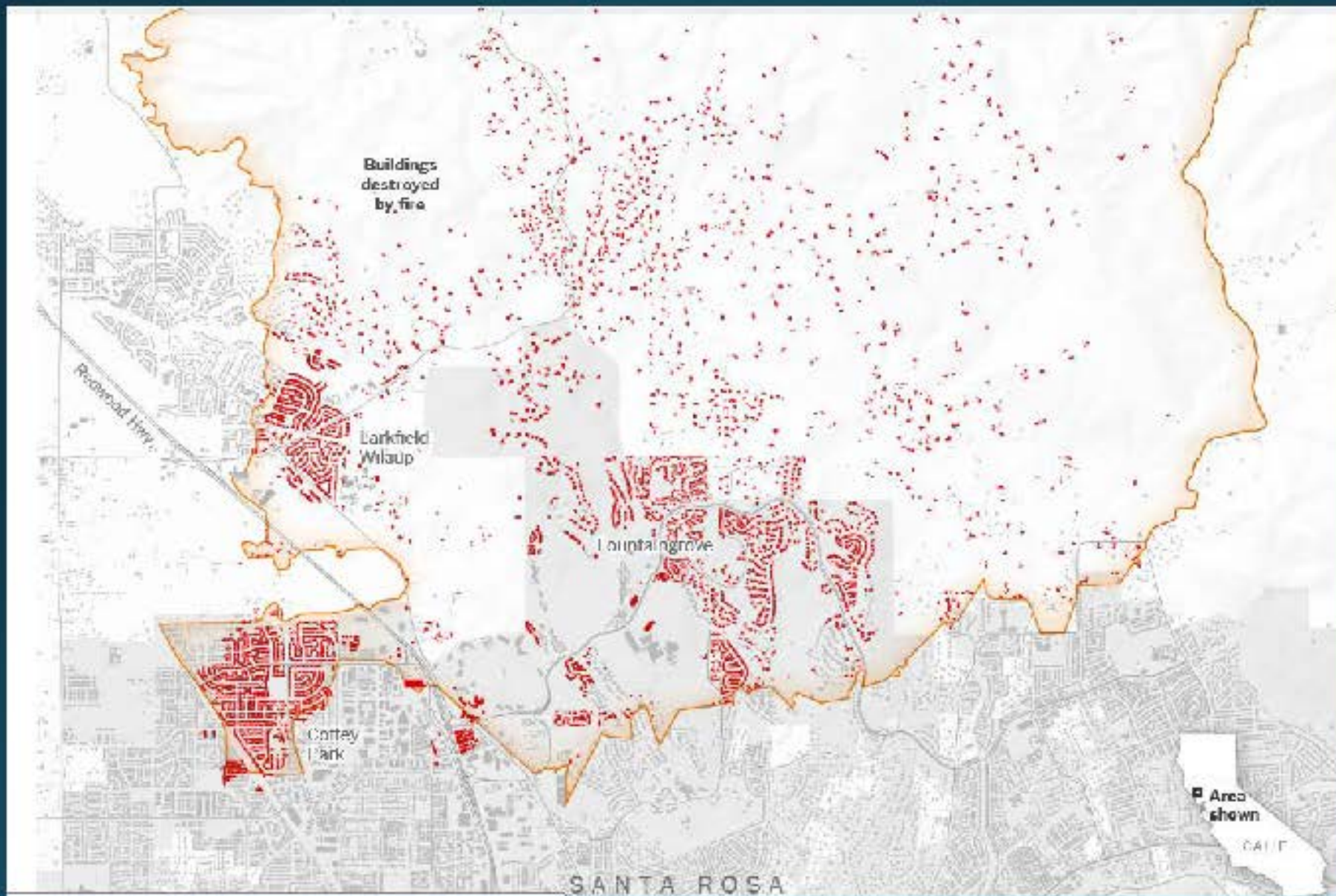
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# 2017 California Wildfires

- 8,176 fires burned 1,079,569 acres (4,368.86 km<sup>2</sup>), according to the [California Department of Forestry and Fire Protection](#).
- In October, wildfires in [Napa](#), [Lake](#), [Sonoma](#), [Mendocino](#), and [Butte](#) counties grew to become massive conflagrations spanning from 1,000 to well over 20,000 acres apart within a single day.
- Destroyed an estimated 8,400 structures
- Killed at least 41 people
- \$1.045 billion in damages



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# Government Actions Relating to Asbestos and Current Events

- In 2010, A Task Force including CARB, CAPCOA, BAAQMD, SWRCB, USEPA, DTSC, CalRecycle, CalEPA, and CalOES created a *“Guidance for Conducting Emergency Debris, Waste and Hazardous Material Removal Actions Pursuant to a State or Local Emergency Proclamation”*



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# Government Actions Relating to Asbestos and Current Events

- Previously, waste and debris removal from catastrophic incidents were handled in accordance with the National Emissions Standards for Hazardous Air Pollutants (NESHAP).



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Results from air and bulk ash samples collected during previous wildfires and the 2010 San Bruno natural gas pipeline explosion reveal that asbestos fibers from building materials containing asbestos *may* be consumed and the remnants dispersed into the thermal column of the fire.



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On-site air sampling for asbestos fibers during debris removal activities revealed 13 of 162 air samples contained asbestos; however, all asbestos air samples were below the Cal/OSHA permissible exposure limit (PEL) of 0.1 fiber/cubic centimeter, and transmission electron microscopy (TEM) analysis revealed only a few asbestos structures detected in any of the air samples collected along the property line at each residential lot.



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- Analytical results from samples collected of the burn ash revealed that asbestos fibers were not present >1.0%
- Only five out of 79 bulk building material samples contained asbestos greater than one percent (1%). These materials were primarily floor tiles under the burn ash or in areas not exposed to extreme heat.



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# Compelling data but...

- The guidance admittedly takes the teeth out of the NESHAPS which we are still mandated to enforce at the local level
- Relaxing NESHAPS requirements *could* result in improper handling and disposal of ACM's
- The guidance indicates hazardous materials remained present when following this process
- Improper handling and disposal of ACM's *could* lead to unnecessary exposures and improper waste characterization
- There is no safe exposure level for asbestos



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# Other infamous asbestos uses you may be familiar with...



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# Presentation takeaways...

- State and local government continue to run strong asbestos enforcement programs despite funding challenges and EPA's de-investment from TSCA side
- Asbestos, though a proven carcinogen has never been fully banned by congress
- Asbestos continues to cause disease and death
- Asbestos continues to be mined, exported and imported
- Many buildings still contain asbestos and will be the primary exposure route for Americans
- We will do our best to limit those exposures



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# Questions or comments?

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