

# ASBESTOS AWARENESS

OFFICE OF  
ENVIRONMENTAL HEALTH AND SAFETY

UNIVERSITY OF ARKANSAS

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# WHAT IS IT ?

- FIBROUS MINERAL
- NATURALLY OCCURRING
- SILICA BASED
- HEAT RESISTANT
- SEVERAL TYPES





# CHRYSOTILE

- "WHITE ASBESTOS"
- SPIRAL SHAPED FIBERS
- LESS LIKELY TO BE INHALED DUE TO SHAPE
- RELATIVELY "SAFE"
- STILL USED IN US
- LONG TERM EXPOSURE CAN CAUSE HEALTH PROBLEMS



# AMOSITE

- "BROWN ASBESTOS"
- BROWN OR GRAY FIBERS
- ONCE THE SECOND MOST COMMONLY USED
- COMMERCIAL USE HAS DECREASED DUE TO HAZARD
- BANNED IN SOME COUNTRIES
- TIGHTLY REGULATED IN US



# CROCIDOLITE

- "BLUE ASBESTOS"
- MOST DANGEROUS TYPE
- VERY FINE, SHARP FIBERS
- EASILY BROKEN AND INHALED
- LEAST COMMONLY USED IN US
- WEAKER, LESS FLAME RESISTANT



# TREMOLITE

- LARGE DEPOSITS IN CANADA AND US
- DANGEROUS, BUT NOT COMMONLY USED
- HAS BEEN FOUND IN HOUSEHOLD PRODUCTS SUCH AS TALCUM POWDER



# ANTHOPHYLLITE

- NOT AS DURABLE AS OTHERS
- NOT AS MANY USES
- MOSTLY PAINTS AND SEALANTS
- MINERS, PAINTERS, SHIPYARD WORKERS AT RISK



# ACTINOLITE

- SIMILAR TO TREMOLITE
- WHITE TO GREEN IN COLOR
- NOT A LONG HISTORY OF INDUSTRIAL USE
- FOUND IN TWO FORMS
- FIBROUS FORM DANGEROUS
- NON-FIBROUS, NOT AS MUCH

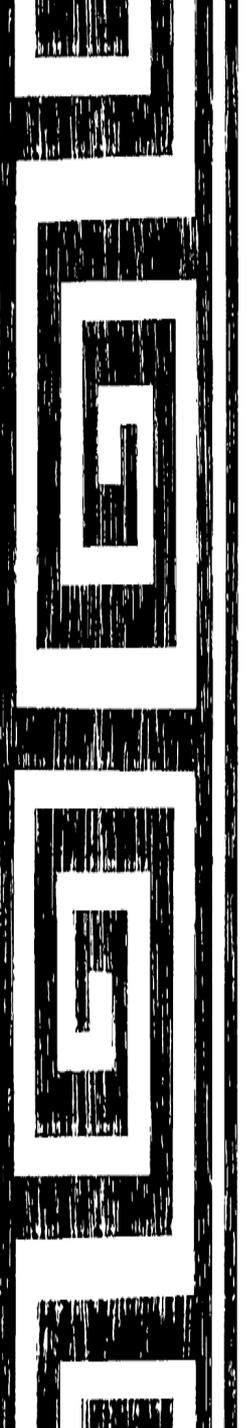
USED SINCE NEOLITHIC TIMES

FIRST RECORDED USE IN 2500 BC

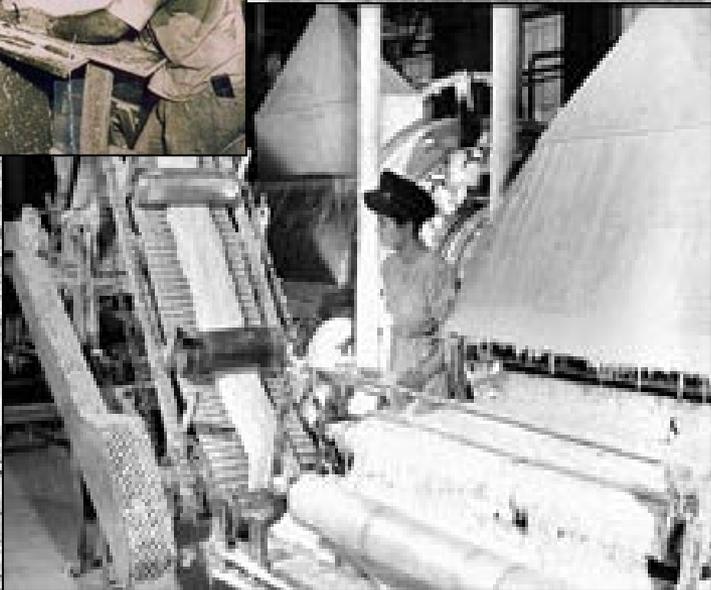
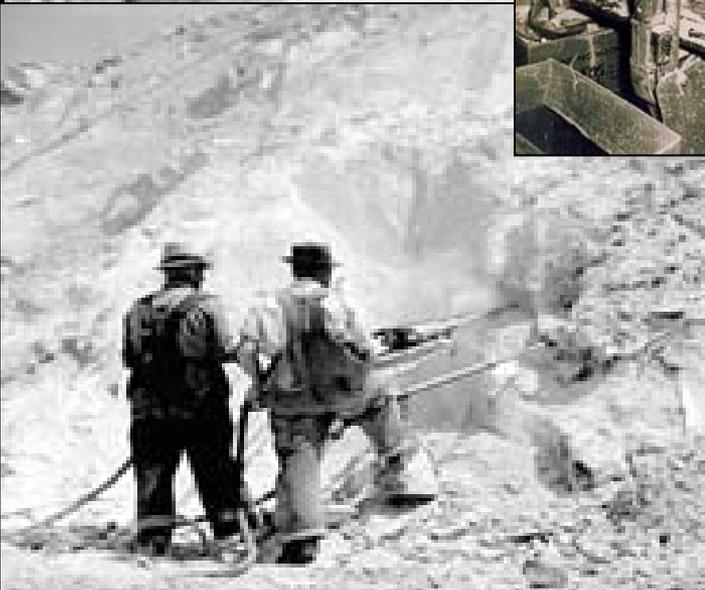
WOVEN INTO CLOTH FOR  
SHROUDS, NAPKINS, TABLECLOTHS



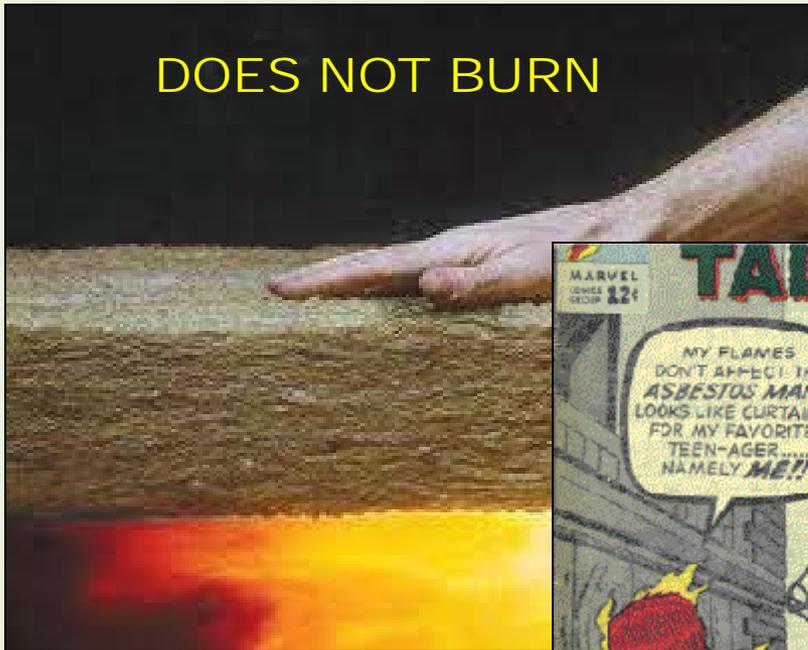
GREEKS  
USED  
ASBESTOS  
LAMP WICKS



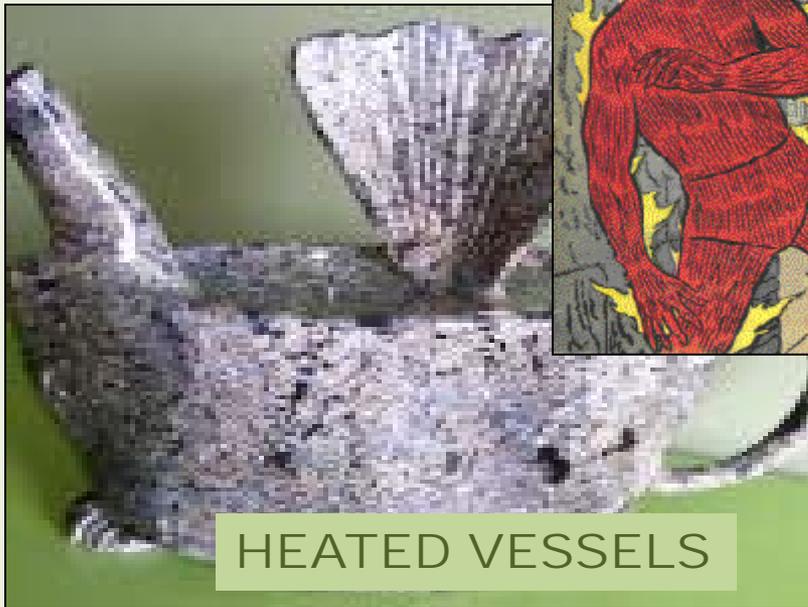
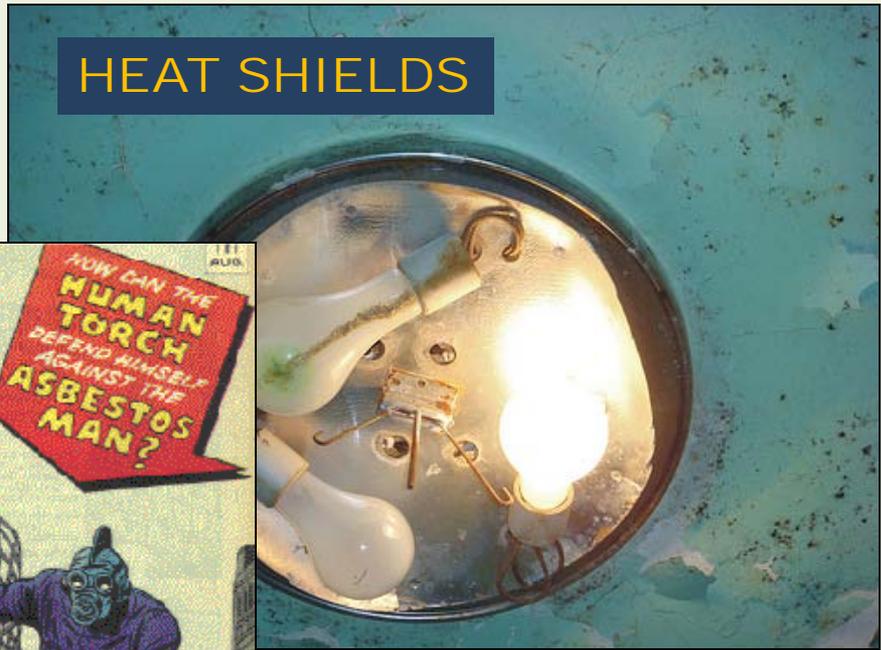
***DANGERS HAVE NOT ALWAYS BEEN RECONJZED***



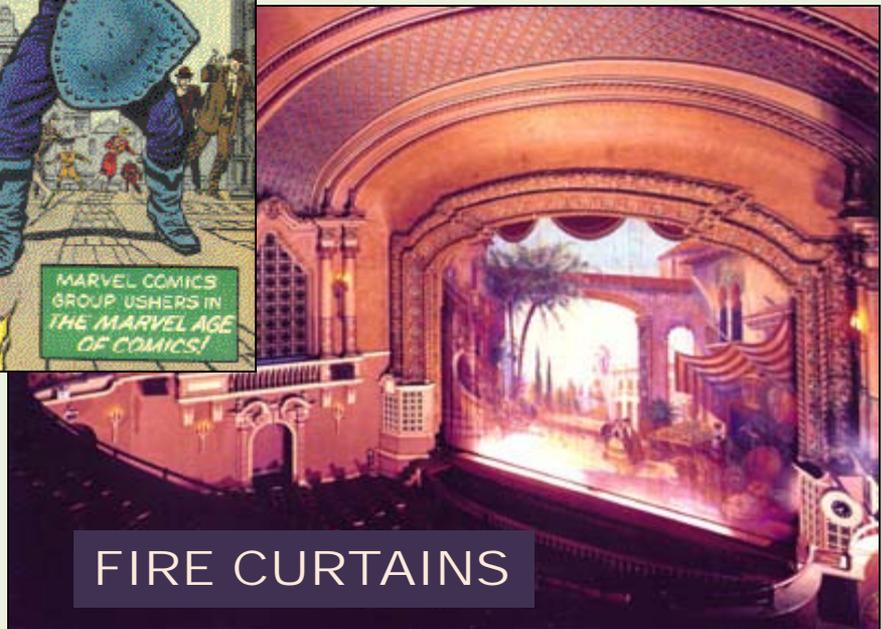
DOES NOT BURN



HEAT SHIELDS



HEATED VESSELS



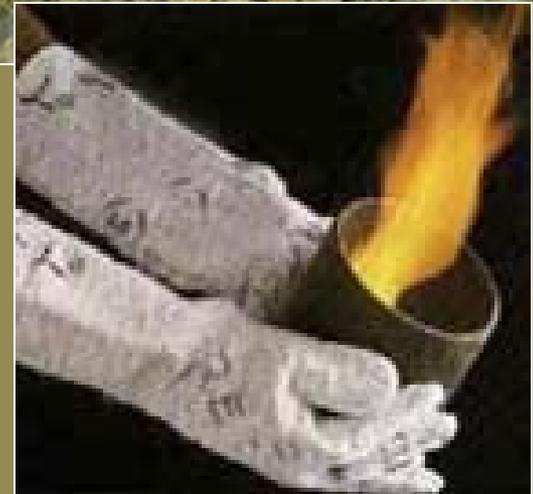
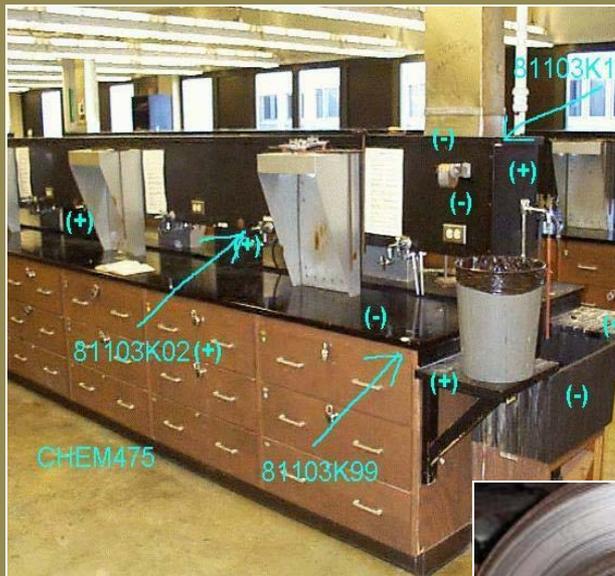
FIRE CURTAINS

*USED EXTENSIVELY IN THE...*

# BUILDING TRADES



# SPECIALTY USES



# NOVELTIES



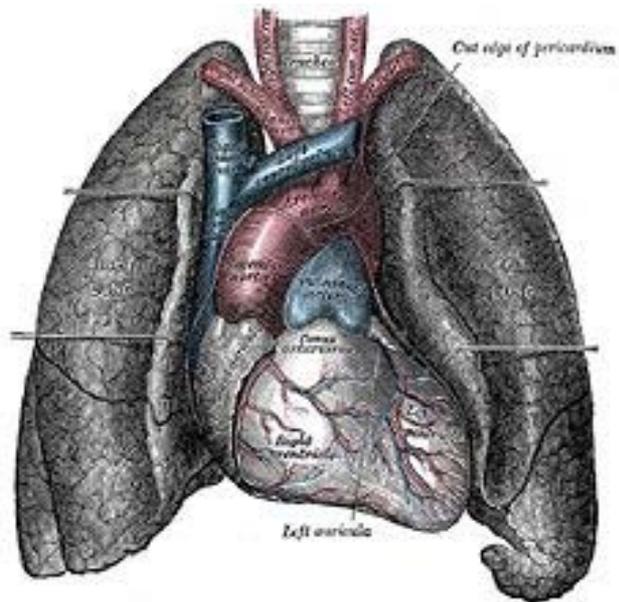


WHY BE CONCERNED?

An anatomical illustration of the human thorax, showing the ribcage, lungs, and heart. The illustration is rendered in a blue and pink color scheme. The word "MESOTHELIOMA" is overlaid in the center of the image.

MESOTHELIOMA

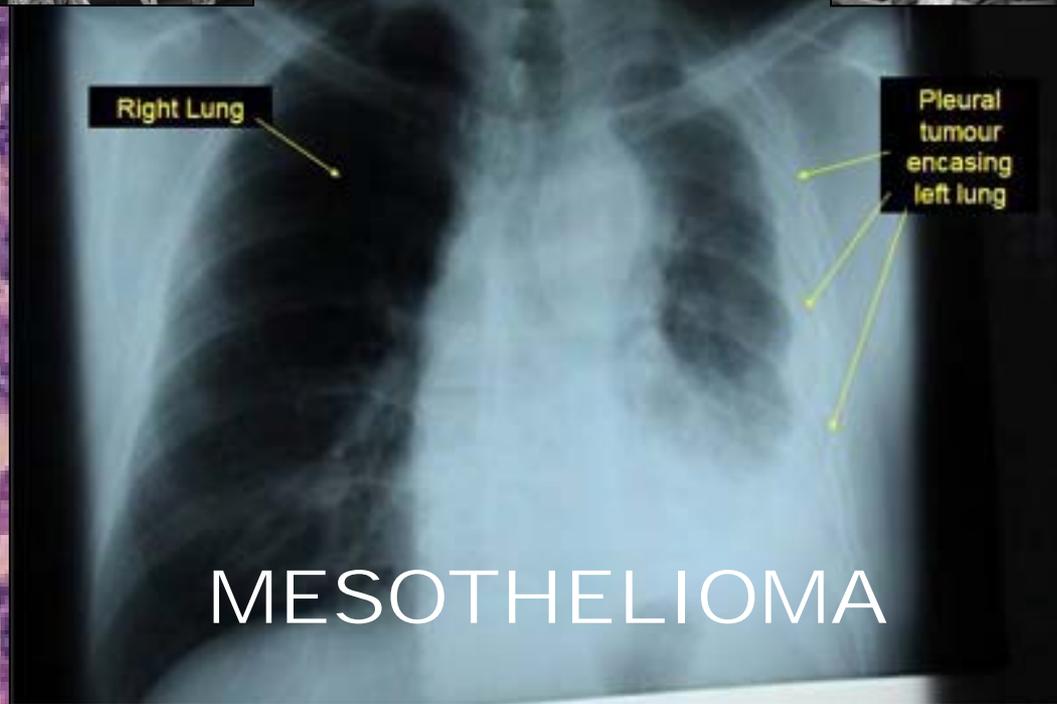
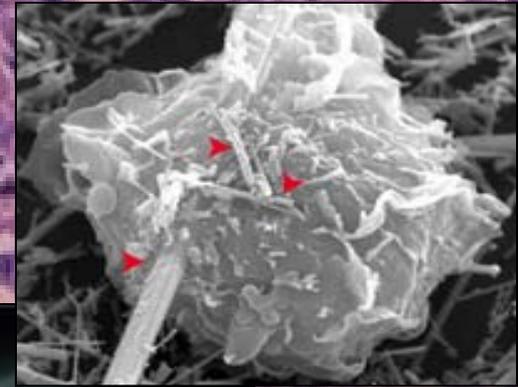
GREEK GEOGRAPHER  
STRABO NOTED  
"SICKNESS IN THE LUNGS"  
OF SLAVES WHO WOVE  
ASBESTOS CLOTH



ASBESTOS FIBERS

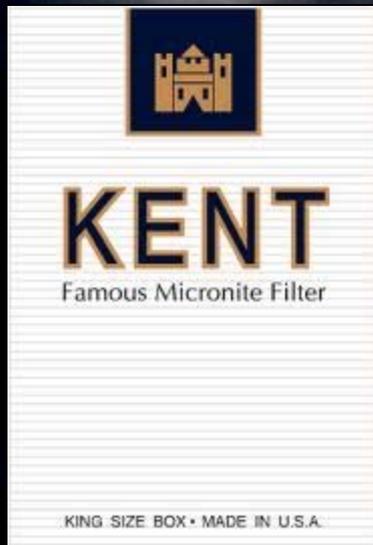


MACROPHAGE CELL

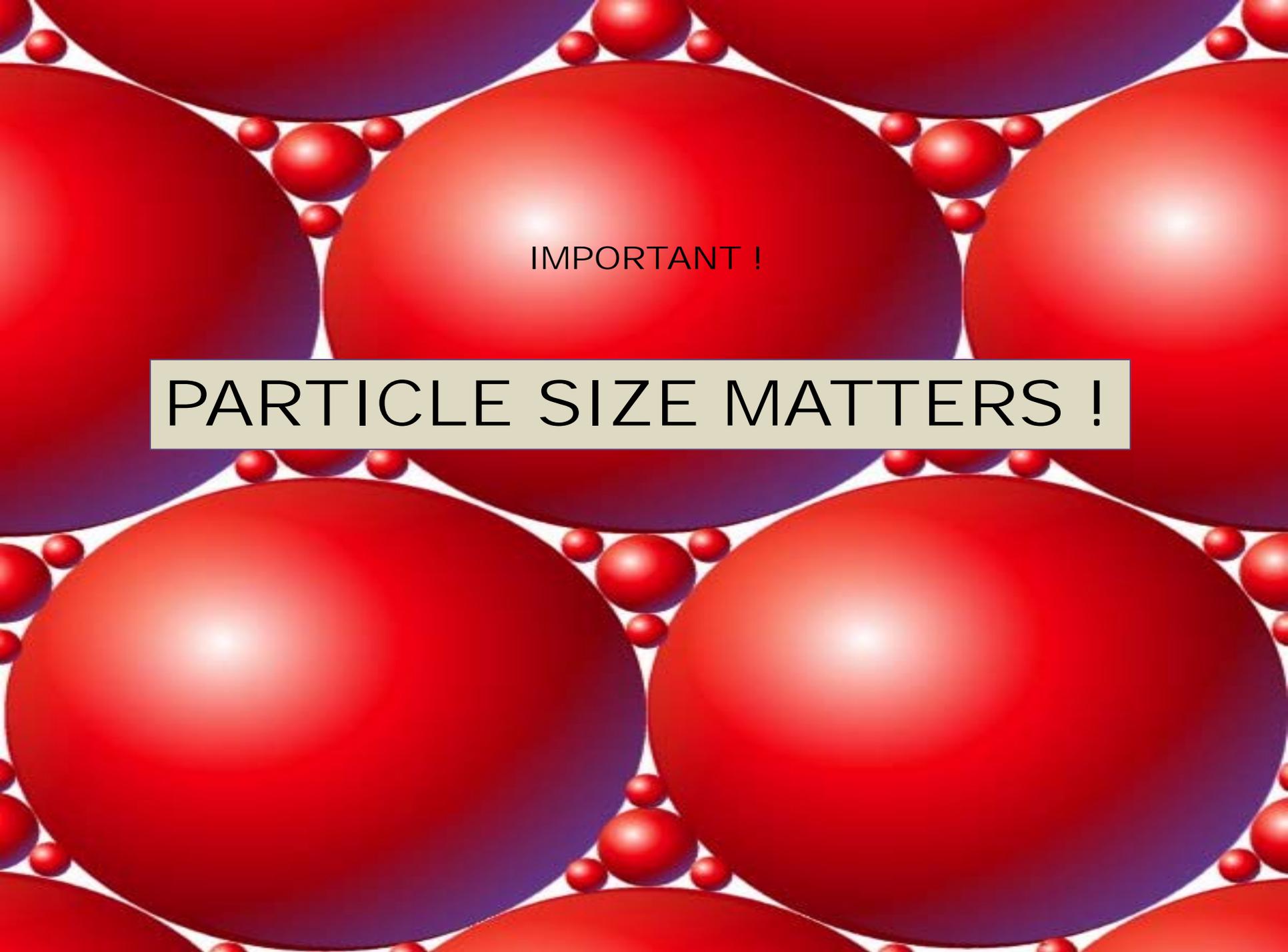


MESOTHELIOMA

EXACERBATED BY SMOKING

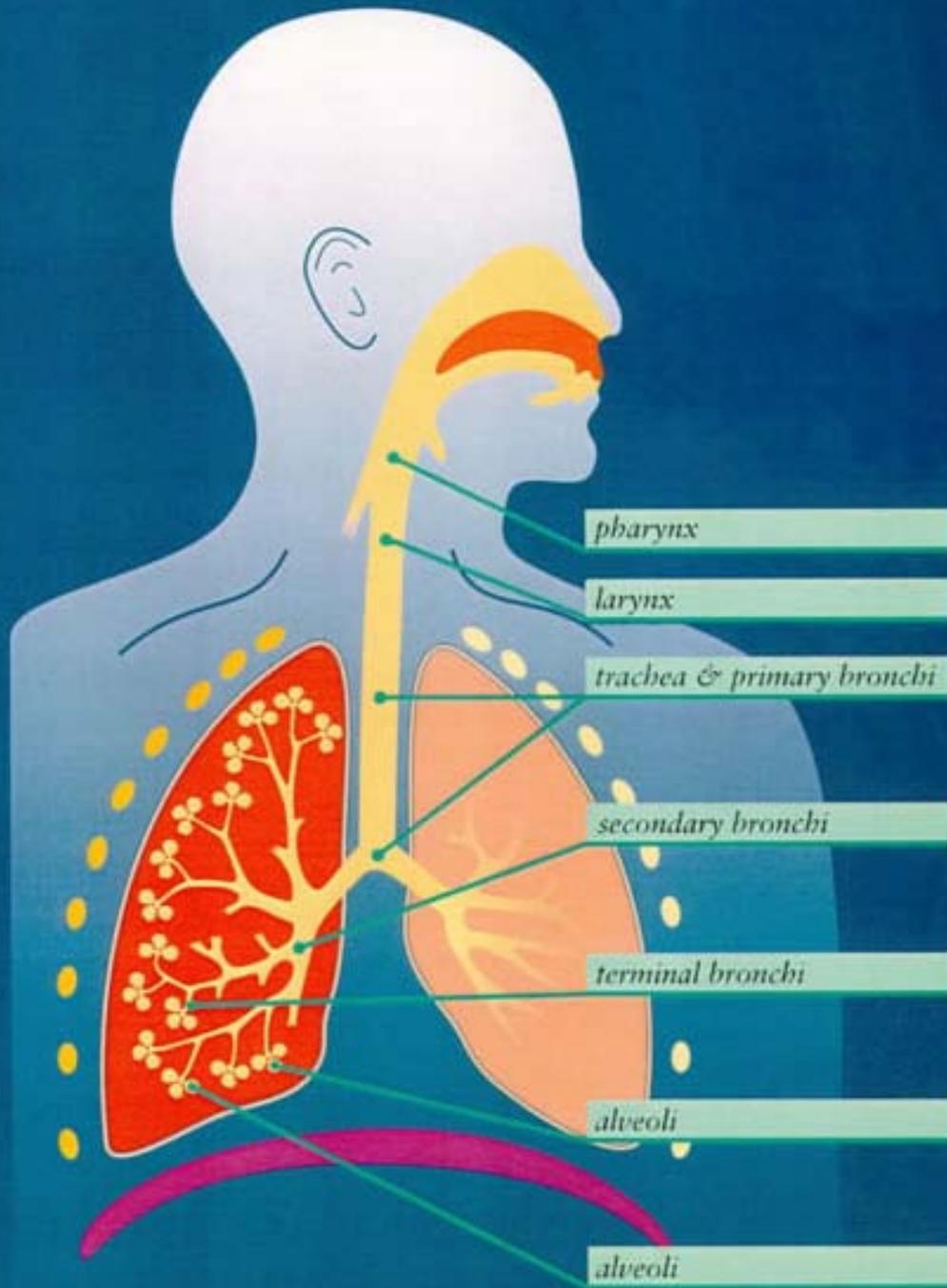


KENT'S FAMOUS FILTERS CONTAINED ASBESTOS

The background of the slide is a dense arrangement of red spheres of various sizes, creating a textured, particle-like appearance. The spheres are rendered with a slight gradient and a soft shadow, giving them a three-dimensional look. They are scattered across the entire frame, with some larger spheres and many smaller ones.

IMPORTANT !

PARTICLE SIZE MATTERS !



PARTICLES MUST BE  
SMALL ENOUGH TO  
REACH THE LUNGS

100  $\mu\text{m}$  OR GREATER  
TYPICALLY NOT INHALED

10 – 100  $\mu\text{m}$   
TRAPPED AND EXPELLED BY  
UPPER RESPIRATORY SYSTEM

LESS THAN 10  $\mu\text{m}$   
MAY REACH LUNG

# EASILY CRUMBLED OR PULVERIZED

FRIABILITY MAY RESULT  
IN RESPIRABLE PARTICLES

FRIABLE





FRIABLE ASBESTOS  
MUST BE REMOVED  
OR ENCAPSULATED

REMOVAL OR ABATEMENT  
OF FRIABLE ASBESTOS  
REQUIRES NEGATIVE  
AIR CONTAINMENT



IS THERE ASBESTOS IN  
UNIVERSITY OF ARKANSAS BUILDINGS ?

YES

- CEILINGS
- FLOOR TILES
- PIPE WRAP

SHOULD I BE CONCERNED ?

NOT NECESSARILY



THE UNIVERSITY MAINTAINS  
A DATA BASE OF ASBESTOS  
LOCATIONS.

FACILITIES MANAGEMENT  
HAS A CREW OF **CERTIFIED**  
ASBESTOS WORKERS.





FRIABLE ASBESTOS  
IS REMOVED OR  
ENCAPSULATED





NON-FRIABLE MATERIAL  
IS REMOVED AS  
FEASIBILITY PERMITS





# ASBESTOS IS REMOVED DURING RENOVATIONS





ALL ABATEMENT IS  
PERFORMED BY  
**CERTIFIED** PERSONNEL





ALL WORK IS PERFORMED  
UNDER **APPROPRIATE**  
CONTAINMENT\*

\* note negative pressure



# SCIENCE AND ENGINEERING BUILDING

EXAMPLE



- BUILT PRIOR TO 1978
- RENOVATED 2002

FRIABLE MATERIAL  
ABATEMENT WORK IS  
PERFORMED UNDER  
CONTAINMENT



CROSS SECTION OF  
ASBESTOS CONTAINING  
ACOUSTIC CEILING



## WEST AVENUE ANNEX

- 9 X 9 FLOOR TILE REMOVED
- CONTAINMENT NOT NECESSARY

FLOOR TILE DOES NOT BECOME FRIABLE UNLESS SUBJECTED TO OPERATIONS SUCH AS BURNISHING, SAWING, OR SANDING. ORDINARY REMOVAL METHODS DO NOT CALL FOR NEGATIVE AIR CONTAINMENT.



THERE IS SOME EVIDENCE THAT  
THE RISKS OF ASBESTOS EXPOSURE  
MAY HAVE BEEN OVERSTATED IN  
THE PAST, PERHAPS CAUSING  
UNWARRANTED ANXIETY.

HOWEVER . . .



*AS WITH OTHER HAZARDS,*

UA PREFERS TO EXERCISE . . .



THE  
GOLD