

WV-0236-429

UNION CARBIDE CORPORATION

Silicones and Urethane Intermediates

Sistersville, WV

PLAINTIFF'S EXHIBIT

UC-2961

MEMO TO: All Maintenance First Line Supervisors

COPY TO: T. L. Grittie ✓
W. V. Summers
G. W. Wulfert

DATE: November 29, 1984

SUBJECT: The Hazards of Asbestos

In the Maintenance Department's effort to keep all of our employees informed of potential hazards to their health, the following program has been compiled and must be presented to your work groups before January 1, 1985.

The Asbestos Handling Procedure (Section II-13 of the Safety and Health Procedures Manual) should be reviewed by you and communicated to your work group, along with a slide presentation available from the Area I Maintenance Shop. Questions arising that you cannot confidently answer should be referred to your Supervisor.

This training is mandatory and will be recorded on your training records. Therefore, submit your attendance records to Sherry Marra when you have completed this work.

C. A. Gorrell
C. A. Gorrell

CAG/tas

ASBESTOS

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*Final copy for Asbestos
"add-on" w/ slide #
next to para. script
and slides given to
Duck Blawser on 11/13*

because there
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OSHA also specifies a ceiling limit of 10 fibers - longer than 5 micrometers in length - per cubic centimeter of air. A ceiling limit is that concentration which cannot be exceeded at any point in time.

Permissible exposure limits are constantly reexamined as new information is gathered and asbestos is no exception. It is currently being reviewed by OSHA and its exposure limit may be lowered. We will keep you informed.

In addition to OSHA's rules, the Environmental Protection Agency must be notified ahead of time when large scale jobs are encountered. These are defined as stripping more than 260 linear feet of pipe insulation or more than 160 square feet. This regulation can be met by notifying the staff of the Waste Treatment Unit, who will in turn notify the EPA.

Let's review what protective procedures we observe here at the Sistersville Plant to protect your health. We start by providing periodic physical examinations to all employees who are potentially exposed to asbestos as part of their job assignment. These physicals include a chest x-ray and the pulmonary function tests described earlier. The results of your examination will be discussed with you and, upon written, the information will be made available to your family doctor.

ASBESTOS

Here at the Sistersville Plant, we are concerned about asbestos because there is still a limited amount in the form of insulation, packing, or gaskets.

1 These materials were installed in earlier years and are still in service. As they are removed, we must take the necessary precautions to avoid excessive exposures.

2 To begin, we need to define what an excessive exposure is. The Occupational Safety and Health Administration, OSHA, says that your exposure cannot exceed 2 fibers - longer than 5 micrometers - per cubic centimeter of air when averaged over 8 hours.

3 OSHA also specifies a ceiling limit of 10 fibers - longer than 5 micrometers in length - per cubic centimeter of air. A ceiling limit is that concentration which cannot be exceeded at any point in time.

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6 Let's review what protective procedures we observe here at the Sistersville Plant to protect your health. We start by providing periodic physical examinations to all employees who are potentially exposed to asbestos as part of their job assignment. These physicals include a chest x-ray and the pulmonary function tests described earlier. The results of your examination will be discussed with you and, upon written, the information will be made available to your family doctor.

7 In addition to medical surveillance, we have specific safe handling practices that are based on work experience and the latest technology. These are listed in Section II-13 of the Plant Safety and Health procedures Manual. Let's take a look at some of its provisions.

8 When asbestos is involved, barricade tape will be used to isolate the area and caution signs will be posted at all access routes to the work area. These signs will be located at a distance which allows an employee to take necessary protective steps or to avoid the area. This sign shall read:

9 ASBESTOS DUST HAZARD
AVOID BREATHING DUST
WEAR ASSIGNED PROTECTIVE EQUIPMENT
DO NOT REMAIN IN THIS AREA UNLESS YOUR WORK REQUIRES IT
BREATHING ASBESTOS DUST MAY BE HAZARDOUS TO YOUR HEALTH

10 Asbestos material will be handled, applied, removed, or cut in a wet state, sufficient to prevent airborne asbestos fibers.

11 A special wetting agent is available from the Plant Store Room. This agent is designed to penetrate and bind asbestos fibers to reduce or eliminate dust generation/.

12 Employees engaged in the handling or removal of asbestos-containing material will wear respiratory protection. These employees normally will be insulators and their helpers. Use of respirators is mandatory here at Sistersville for all potential exposures. Two types of respiratory protection are possible:

13 Normal Exposure: This is where the concentration of asbestos fibers is reasonable expected to be less than 10 times the permissible exposure limit. In this case, use the Comfo II respirator with a Type H Ultra Filter.

14
15 Heavy Exposure: This occurs when the concentration of asbestos is reasonably expected to exceed 100 times the permissible exposure limit. In this case, a type "C" supplied air respirator in the positive-pressure mode shall be used along with a full facepiece mask. It is our policy that every practical effort will be made to eliminate the potential for a heavy exposure.

16 A special vacuum cleaner is available with a filter designed for 99.97% efficiency. It will be used where wetting is not appropriate, such as brake lining work and removal of asbestos fibers on one's clothing.

17 Disposable protective clothing designed specifically for protection against fibers will be used on all jobs involving the handling or removal of material containing asbestos.

18 Asbestos waste material, including used disposable protective clothing, will be collected in an impermeable, sealed bag. This bag must be labelled to read: CONTAINS ASBESTOS FIBERS . AVOID BREATHING DUST . BREATHING DUST MAY CAUSE SERIOUS BODILY HARM.

19 Within the shift that the job is completed, whoever collected the waste material will deliver the bags to the asbestos waste area. The appropriate supervisor will then notify the contractor (Charley Brown) within that same shift. The contractor will bury the waste in compliance with federal regulations.

20 When an employee has clothing other than the disposable type, contaminated or suspected of being contaminated, the employee will report to the Insulator's change facility in the Central Maintenance Shop. There, the employee will enter the dirty room and remove the clothing. Contaminated clothing will be placed in a sealed, impermeable bag and sent to the laundry. The employee will shower, and then exit into the clean room.

21 There are some good practices that are in addition to the rules defined in the Plant Safety and Health Procedures Manual. For example, when cutting insulation from elevated pipes, lower the insulation to the ground - don't drop it and stir up dust.

22 When working over a grating or a slag surface, dust can collect which is difficult to clean up. These surfaces should be covered with a plastic sheet. Do not use a broom, brush, or air hose and stir up dust. ²³ Most important, use good housekeeping and common sense. Remember to think before you act. An ounce of prevention is worth a pound of decontamination!

24 When on a job involving asbestos, you may be asked to participate in industrial hygiene monitoring. This will involve wearing a pump which draws air through a filter. The dust fibers are caught on this filter.

25 The filter is then sent to an outside laboratory which is certified by the federal government to count the number of fibers on the filter. The results of the industrial hygiene monitoring will be forwarded to the employee monitored. A copy is also sent to the dispensary to be placed in the employee's medical file.

26 We have the analytical ability, here in our Sistersville laboratories to identify the presence of asbestos fibers. So if there is some doubt that there is asbestos in the insulation that you are looking at, your supervisor can submit a small sample for analysis. Usually, same-day results are possible.

27 If you are uncertain about how to perform a job safely and avoid exposure to asbestos fibers, talk to your supervisor first. Don't take chances with your health. We don't want you to. If you see a potential health hazard, bring it to your supervisor's attention promptly.

28 Also, if you have a question about information in this presentation, please don't hesitate to talk to your supervisor, the Safety and Health Department, or the Dispensary. We want you to "Protect your Health by Protecting your Lungs".

29 If all of the guidelines are followed, the job should be safe from start to finish.

WV-0236 #31

Slides to produce

<u>Slide No.</u>	<u>Description</u>	
✓ 1	Photograph of the plant - 2 copies	duplicate
✓ 2	TLV of 2 fibers/cc 8-hr TWA	duplicate
✓ 3	TLV of 10 fibers/cc Ceiling Limit	duplicate
✓ 4	Man with magnifying glass	duplicate
✓ 5	EPA	duplicate

~~16~~ Fran in the dispensary / lung capacity Test photograph

~~17~~ 2 Our plant S+H Procedures manual photograph

~~18~~ Particulate Tape photograph

✓ ~~19~~ Work Area Signs use slide 100

~~20~~ Insulator using wetting agent photograph

~~21~~ wetting agent photograph

~~22~~ Work Area Protection Photo Lab

~~23~~ Close up of Confo II / Type H

✓ ~~24~~ Close up of Confo II / Type H photograph

~~25~~ Close up of Scott Airpak photograph

~~26~~ Vacuum Cleaner photograph

~~27~~ Insulator in protective clothing photograph

✓ ~~28~~ Disposal area photograph

✓ ~~29~~ Disposal site photograph

Drop? 20 Dirty room photograph

Drop 21 Insulator taking disposable clothing off at the work site photograph

22 Lower the insulation photograph

✓ 23 Cover the surface photograph

24 Use the sweeper photograph

25	Insulator being monitored	
26	Rob counting dust	duplicate
27	Insulator looking at an I.H. report	photograph
28	Van McCool in his lab	photograph
29	An insulator at work	photograph
30	An insulator at work	photograph
✓ 31	Finish Line - 2 copies	duplicate

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Mr. Clean

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?

20
or
21

When an employee has clothing other than the disposable type contaminated or suspected of being contaminated, the employee will report to the Insulator's change facility in the Central Maintenance Shop. There the employee will enter the dirty room and remove the clothing. Contaminated clothing will be placed in a sealed, impermeable bag and sent to the laundry. The employee will shower and then exit into the clean room.

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~~27~~ 27 If you are uncertain about how to perform a job safely and avoid exposure to asbestos fibers, talk to your supervisor first. Don't take chances with your health. We don't want you to. If you see a potential health hazard, bring it to your supervisor's attention promptly.

28 ~~28~~ Also, if you have questions about information in this presentation, please don't hesitate to talk to your supervisor, the Safety and Health Department, or the Dispensary.

What we want you to do is "Protect your health by protecting your lungs."

29 ~~29~~ Finish Line

~9 minutes
+ 20 minutes

✓1 Photograph of the Plant

✓2 Program Title

ASBESTOS

Slide No.

✓3 Over the years asbestos has been widely used in
✓4 industry, transportation, homes, construction,
✓5
✓6
✓7 automotive parts, fire protection, and many
✓8 other applications. Asbestos has been a very popular
✓9 and effective insulating and fire retardant
material.

✓10 Medical research has determined there is a
health hazard in breathing asbestos fibers and
the Federal Occupational Safety & Health
Administration (OSHA) has developed a standard
for controlling occupational exposure to this
material.

11 As awareness of the potential hazards associated
with exposure to asbestos dust has spread to
the manufacturing community and consumers,
asbestos has been virtually eliminated from
most product lines.

12 So what's our concern here at the Sistersville
plant? We are concerned because there is still
a limited amount of asbestos in our plant in the
13 form of insulation, packing, gaskets, etc. which
was installed in earlier years and is still in
service.

For this reason, we want you to be familiar with the hazards of asbestos, OSHA's permissible exposure limit, plus the safe handling procedures for removing and disposing of asbestos.

✓14 Before we go any further, let's take a close look at some asbestos so we can understand better we want to avoid breathing it. Note that the fibers are long and narrow. Some fibers may be straight and ✓15 spear-like, while others may be bent and ✓16 twisted. If these are inhaled into the lungs, they can become imbedded there and they do not dissolve.

✓17 We are now looking at a healthy lung. The body has built in defense mechanisms for catching and expelling most particles and fibers we breathe - including asbestos. But when asbestos do succeed in getting into the lungs, they are attacked by special cells that form scar tissue over them. This scar tissue can not stretch so the lungs gradually lose their ability to expand and contract. In addition, oxygen exchange can not take place through scar tissue.

118 The lungs you are looking at now show a condition called asbestosis, which can result from a period of years of inhaling asbestos fibers. The symptoms are difficulty in breathing and shortness of breath. The white matter in the lower areas of the lungs is scar tissue. Asbestosis has a long latent period which can range from 5 years for heavy exposure to as long as 20 to 30 years.

119 Asbestos is also associated with with a cancer of the lining between the lungs and the ribs. This disease is quite rare, but fatal. When asbestos is expelled by the mucous lining of the lungs and then swallowed, it has been associated with cancer of the throat, stomach, colon and rectum.

120 Since we have learned of the hazards of asbestos, exposures have decreased drastically. And most of the diseases described above resulted from past exposures - not what we encounter today. The point we want to make, though, is to protect yourself and your fellow employees. Know the hazards and guard against them. Let's stay healthy.

✓21 In recognition of the asbestos toxicity, the Occupational Safety and Health Administration, OSHA, limits your exposure to no more than 2 asbestos fibers - longer than 5 micrometers - per cubic centimeter of air when averaged over a period of 8 hours.

✓22 OSHA also specifies a ceiling of 10 fibers - longer than 5 micrometers - per cubic centimeter of air. A Ceiling Limit is that concentration which can not be exceeded at any point in time.

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Start Here →

✓24

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✓2 Program Title

ASBESTOS

Slide No.

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✓5
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✓ 14

Now, before we go any further, let's take a

✓ 15

close look at some asbestos dust. So we can

✓ 16

breathing it. Note that the fibers are long
narrow particles with sharp edges. If these
aren't removed before inhaled into the lungs,
they can become embedded in the flesh and
tissues and they tend to remain there.

✓ 17

We are now looking at a healthy lung. The body
has a built in mechanism for snagging and
expelling most dust and particles we breath -
including asbestos. ^{But when asbestos} ~~the~~ particles do
succeed in getting into the lungs, ^{they} are attacked
by special cells that form scar tissue over them.

So, fiber by fiber, as this dust enters the lungs,
more scar tissue is formed, ②

✓18

The lungs you are looking at now have a condition called "asbestosis," which can result over a period of years of breathing asbestos dust. ① The symptoms are difficulty in breathing and shortness of breath.

Asbestosis has a long latent period ranging from 5 years for heavy exposure to as long as 20-30 years.

③

The case you see today is not necessarily an indication of present day working conditions, but instead of conditions existing years ago before little was known about the health effects of asbestos.

✓19

The important point we want to make then is for you to protect yourself and your fellow employees when ^{working with} ~~exposed to~~ asbestos-containing materials. you are a heavy smoker, this message is of even greater significance.

✓20

In recognition of these health hazards, the Occupational Safety and Health Administration - OSHA - limits

your 8-hour exposure to no more than two asbestos fibers - longer than 5 micrometers - per cubic centimeter of air. OSHA also specifies

✓21

a ceiling of 10 fibers - longer than 5 micrometers - per cubic ^{centimeter} A of air. The Ceiling Limit is that concentration which can not be exceeded at any point in time. -3-

22

What is Union Carbide doing to protect you from excessive exposure to asbestos?

23

Under most conditions, asbestos is not normally in fiber form small enough to be breathed. The potential problem then is with the removal, clean-up, and disposal of the materials around the plant which were installed before we began using asbestos-free materials.

We begin by providing periodic physicals to all

employees who are exposed to asbestos fibers

at work - and these include a chest x-ray and capacity tests.

The results of the examination will be discussed with you and upon written request, the information will be made available to your family doctor.

Asbestos fibers are released when you cut or saw the insulation. For this reason, several precautions must be taken when removing insulation to prevent exposure.

24

First, be sure to determine if the material you are stripping or working with contains asbestos. When asbestos is involved, the work area must be roped off with yellow barricade lines and warning signs posted which read -- "ASBESTOS HAZARD."

~~Avoid breathing the dust. Wear assigned protective equipment. Do not remain in the area unless your work requires it. Breathing asbestos dust may be hazardous to your health. The barricade and signs must remain in place until the job and all clean-up are completed.~~

- ✓ 28 The plant Environmental Protection Department must be notified ahead of time where large scale jobs are concerned - such as the stripping of more than 260 linear feet of pipe or more than 160 square feet.
- 29 You may be asked to wear a small air sampling pump while you work. The pump samples the air around you and collects any asbestos fibers present on the filter. Afterwards, our
- ✓ 30 Industrial Hygienist will ^{arrange to have filter} ~~determine the asbestos~~ analyzed by an outside, independent laboratory. ~~fiber concentration by studying the filter~~ under a microscope.
- 31 Whenever we monitor you, the results are sent directly to you and a copy is placed in your medical file. All monitoring results are kept a minimum of 20 years.

32 Whenever possible, asbestos must be thoroughly wetted before handling, cutting, scoring, or any other activity which would create dust. The purpose of this is to prevent loose asbestos fibers from blowing around.

33 When working over a grating or a slag surface, dust can collect. Please be sure to cover
34 the surface area with a plastic sheeting and keep everything wetted down.

35 Whenever doing work involving asbestos, especially when stripping old insulation,

the proper type of respirator must be used. For
36 normal dust exposure, use the Camgo II half-face mask with the Ultra Type H canister.

These respirators filter the asbestos or any other dust before you breath it. Both have been tested and approved for use with asbestos.

37 When you are in a confined space, or when the dust is very heavy, a supplied air respirator is to be used. The Safety Department, your Shift Training Coordinator, or your supervisor can provide training in the proper use, care, and maintenance of these and other respirators.

→
Include
Somewhere?

- 38 Coveralls will be supplied for jobs involving asbestos, and disposable paper coveralls are
- 39 available from the Storeroom. These work clothes are to be stored in separate lockers away from where the street clothing is kept. Clothing worn while working with asbestos must be removed before you handle food or enter an eating facility.
- 40 Never use compressed air to blow dust off your work clothing. This is a serious
- 41 violation of safety regulations. Use a vacuum cleaner instead.
- 42 Your contaminated work clothing is to be placed in ^a dust-proof plastic bag which ^{is} labeled with a caution message so that laundry employees will know of the hazard.
- ✓ 43 All waste materials (^{disposable clothing} ~~bags~~, debris, and old insulation) must be collected and disposed of in the same special bags which have "CAUTION" notices printed on the front of the them. When filled, the bags must be sealed and then
- 44 they are transported to landfill for disposal. These bags are available from the Storeroom.

Drop this paragraph →

~~If for any other reason, you happen to use one of these specially marked plastic bags for anything else other than asbestos materials, please be sure to turn that bag wrong-side out so that people will not see a precautionary notice on the bag and assume that disposal must be handled in accordance with the procedure for asbestos.~~

45

most important, use good housekeeping and common sense in your work. When cutting insulation from overhead pipes, lower it to the ground - don't drop it and stir up dust.

46

Keep all surfaces free of accumulated asbestos dust. When cleaning an area containing asbestos dust, wet clean or vacuum clean it. When necessary, apply sweeping compound to the area. Never use a brush, broom, or air hose to clean up dry asbestos.

47

If you are uncertain about how to perform a job safely to avoid exposure to asbestos fibers, talk to your supervisor first.

48

Don't take chances with your health. We don't want you to. If you see a potential health hazard, bring it to your supervisor's attention promptly.

49

Also, if you have questions about the information presented here, please don't hesitate to talk to your supervisor or the Safety and Health Department or the Dispensary.

50

What we want you to do is "Save your breath by protecting your lungs."

51

The End

3. Using the sweeper
4. Ground cloth
5. Dirty room
6. Vacuum in the dirty room

Wayde B. Miller, Jr., ~~Director~~ → Bill WV-0236 #32

Can you give me
a copy of this?
Tammy

Recently, MSA submitted comments on the proposed OSHA rulemaking on occupational exposure to asbestos. Here is the main part of this letter, which was signed by Wayde B. Miller, Jr. (Director of Product & Sales Planning).

These statements reflect MSA's belief that only high-efficiency (Type H or Ultra Filter) respirator filters be used as minimum protection against airborne asbestos fibers. You may copy this information and share it with customers.

USE OF HIGH-EFFICIENCY RESPIRATORS FOR AIRBORNE ASBESTOS FIBERS

OSHA is questioning the validity of NIOSH/MSHA approvals for other than high-efficiency filter respirators for use against asbestos. MSA also questions the validity of these approvals and recommends their withdrawal.

In 30 CFR 11 (par. 11.130), dust, fume and mist respirators are classified for use against dusts, fumes, and mists having air contamination levels (PELs) not less than 0.05 mg/m^3 or 2 million particles per cubic ft. OR for use against dusts, fumes and mists having an air contamination level (PEL) less than 0.05 mg/m^3 . The proposed PELs for asbestos fall well below the 0.05 mg/m^3 and should, therefore, require high-efficiency filter respirators as minimum protection.

In further support of this rationale, we would like to point out that asbestos was considered a pneumoconiosis- and fibrosis-producing dust when 30 CFR 11 was developed, and the PEL was 5 million particles per cubic foot. In 1971, the PEL was reduced to 12 fibers/cc (supposedly 2 million particles per cu. ft.). In June 1972, the PEL was again reduced to 5 f/cc and in July of 1975 to 2 f/cc. The current proposal recommends .2 or .5 f/cc as the PEL. It is our opinion that the reduction in the PEL from 5 million particles per cu. ft. to .2 or .5 f/cc forces the use of high-efficiency filter respirators pursuant to paragraph 11.130 of 30 CFR 11 and that NIOSH will be required to amend 30 CFR 11 and eliminate the separate asbestos respirator category, which was originally included in 30 CFR 11 when the PEL was not less than 0.05 mg/m^3 .

If OSHA reduces the PEL to .2 or .5 f/cc as proposed, we feel OSHA must require high-efficiency filter respirators as minimum protection, since this lowers the PEL well below the 30 CFR 11 criteria of $.05 \text{ mg/m}^3$.

When the lead standard was promulgated, the PEL was established at 0.05 mg/m^3 , and high-efficiency filter respirators were specified as minimum protection. This respirator requirement was challenged and ultimately revised to allow the use of any dust, mist or fume respirator as minimum protection. The reason for this revision was that the PEL of 0.05 mg/m^3 for lead was not less than 0.05 mg/m^3 as defined in paragraph 11.130 of 30 CFR 11 and, therefore, OSHA responded properly to the challenge and allowed the use of any dust, mist or fume respirator as minimum protection until such time as OSHA could investigate the matter fully. We believe OSHA should consider the asbestos standard in the same manner, which further reinforces our position that high-efficiency filter respirators should be specified as minimum protection for asbestos.

MSA 7-20-84