1972-CPE

DO 083952
CONFIDENTIAL

CANCELLED

SEP 2 2 1993

...ING
...PACKAGE
SEE OFFICE PROFESSIONAL!!

P. La - Env. Health

THE DOW CHEMICAL COMPANY

MIDLAND, Michigan
March 17, 1972

RECEIVED
MAR 24 1972
SAFETY DEPT.

V. R. Jackson
R&D, Plaquemine
Louisiana Division

cc: J. A. Granier, Louisiana Division
E. J. Brown, Louisiana Division
A. M. Paradiso, Louisiana Division
H. L. Gordon, M.D., Corp. Med., 2030 Bldg.

CPE 2-537

We finally have some results on your talc sample CPE 2-537. Enclosed is a copy of the Microscopy Laboratory report and several photomicrographs at various magnifications.

Looking at the photomicrographs at low magnifications (160X and 475X), the sample appears to have an abundance of fibrous particles. However, when the particles are seen at higher magnifications (1900X and 9500X) they no longer show the same structure that characterizes an asbestos fiber (seen at the same magnification).

Using stereophotomicrography, the Microscopy Laboratory has concluded that the particles are predominantly of a platelet structure. The fibrous appearing particles are actually some of the platelets standing on edge. Several stereophotomicrographs, along with a viewer, are enclosed to give you an idea of this phenomenon.

Commercial talc studies reported in the literature differentiate between the following minerals:

Mineral	Structure	Chemical Formula
Talc	Platelet	$H_2Mg_3(SiO_3)_4$
Tremolite	Prismatic	$H_2Ca_2Mg_5(SiO_3)_8$
Anthophyllite	Prismatic to fibrous	$H_2(Mg,Fe)_7(SiO_3)_8$

Keep

DO 083953
CONFIDENTIAL

Tremolite and anthophyllite are the components generally referred to as fibrous talc, while the platelet structure is the nonfibrous form. Some commercial talcs also contain the asbestos mineral, serpentine.

The reported commercial talc studies have indicated that the asbestos-like problems were caused by tremolite and anthophyllite. The Threshold Limit Values (TLV's) in the Occupational Safety & Health Act reflect these findings:

Material	Threshold Limit Value mppcf*	Threshold Limit Value fibers/ml of air
Asbestos	--	5
Fibrous talc	--	5
Nonfibrous talc	20	--
Nuisance dust	30	--

X-ray diffraction analysis of your sample showed that the major component was talc with a trace of dolomite (MgO-CaO). Any tremolite, anthophyllite or serpentine content was below the detection level of the method. The quartz content was below the detection level of both the microscopy and X-ray diffraction techniques.

From our findings, I can see a problem you might have in evaluating exposures to Mistron Vapor talc. Strict adherence to the standard procedure (as would be expected from an OSHA inspector) for counting asbestos and asbestos-form fibers without detailed analysis of the fiber-like particles might indicate a health hazard where one does not exist. The Mistron Vapor talc particles would have to be examined carefully to differentiate between a platelet edge and an actual fiber.

Based on the microscopy and X-ray diffraction analyses, our conclusion is that the Mistron Vapor talc sample can be classified as the nonfibrous form. In this case, the TLV of 20 mppcf can be applied (standard light-field counting procedure enclosed) to evaluate the dust exposures.

*million particles per cubic foot of air

I wonder if you can send me some information for our files. Do you know the source of the Mistron Vapor talc and what treatment procedures are used? The material is relatively pure compared to other commercial talcs and appears to be the variety mined in Texas.

I hope we have answered your question. If you need more information, give me a call.

Best regards.

G. H. Flores

G. H. Flores
Chemical Biology Research
1701 Building
517 636 2880

GHF:sjl/enclosures

L-10-5-B (REV. 5-66)

Joe Gremillion
CPE 1901

THE DOW CHEMICAL COMPANY
LOUISIANA DIVISION
RESEARCH AND DEVELOPMENT

REFERENCE NO. Env. Health File

DATE THIS REPORT 12/19/72

CHARGE 238

DEPT. CPE

REPORT OF ANALYSIS

DESCRIPTION Dust in Air (Respirable & Total)

STD. { Respirable Dust - 5 mg/m³ / Total Dust - 15 mg/m³

DATE OF SAMP.

Sample	Date	Sample Time		Respirable Dust mg/m³	Tot. Dust mg/m³
#1) CPE Bagging Laborer	12/18/72	4 hrs.		12.5 ★	61.5 ★
#2) CPE Bagging Laborer	12/19/72	2 hrs.		9.9	49.6 ★
equipment:		Preweighed cassette Micronair air pump			
★ Over Standard					

DO 083956
CONFIDENTIAL

BY: E.J.

SIGNED E J Brown

9-26-72

① The THF pH test was monitored to determine the ppm exposure to the operator running the test.

ⓐ Average time spent on this test per day is 15 min to 30 min.

ⓑ Test apparatus: air bag

Results: < 2 ppm THF in the air while running the THF pH test.

L

S-8 (REV. 5-66)

DOW

Joe Garner
CPE

THE DOW CHEMICAL COMPANY
LOUISIANA DIVISION
RESEARCH AND DEVELOPMENT

REFERENCE NO. Env. Health File

DATE THIS REPORT 9/27/72

CHARGE 238

DEPT. CPE

REPORT OF ANALYSIS

DESCRIPTION THF in Air *

DATE OF SAMP. 9/26/72

Compound		vol ppm			
THF		<2			

* - Tetrahydrofuran sample taken while oper. was preparing a sample using THF under the hood.

DO 083958
CONFIDENTIAL

BY: 2J

SIGNED E J Brown

Env. Health Representative

~~Ref. 807~~

CPE

THE DOW CHEMICAL COMPANY
LOUISIANA DIVISION
RESEARCH AND DEVELOPMENT

REFERENCE NO. Env. Health File

DATE THIS REPORT 10/19/72

CHARGE 238

DEPT. CPE

REPORT OF ANALYSIS

DESCRIPTION: Lab Hood(s)

Main Hood Lab Con

DATE OF CARD:

Hood Door at various Heights (in.)	Velocity MEASURED (FPM)	Velocity measured (fpm)	Smoke Test	Toxic CONTAMINANTS	Velocity RECOMMENDED (fpm)
6	395	—	Ok main Hood	TLV < 1 ppm	130-150
12	170	—	Ok main Hood	TLV < 100 ppm	80-100
18	76	—	Ok main Hood	TLV > 100 ppm	50-60
Muffle Oven Hood 15 in.	—	118	OK Lab Con		
Roll mill Hood	⟶	90 fpm	Ok on Smoke Test		

Note - Area looks real good

DO 083959
CONFIDENTIAL

cc: FO

SIGNED: Victor Jackson