

Monsanto

PLAINTIFF'S
EXHIBIT

MON-50

H. Teicher, Inorganic Research

DATE October 13, 1967

R. Marotta
R. L. Liss

TO Dr. W. H. Hunt - Medical Department

Attached is an Application for Toxicity Study describing an experimental silica product for which test marketing is planned in November of this year. As indicated, this material, which will be identified as MAROCEL A, is a physical blend of a purified asbestos fiber and SANTOCEL Z.

Please advise whether a toxicity study should be made with regard to in-plant and customer handling. If not, please provide us with a statement which we can use with our labor force in Everett as well as with customers.

Thank you for your assistance.

Harry Teicher

/tl
Attachment

6113-024069

APPLICATION FOR TOXICITY STUDY

Name of Compound: 1/1 Blend of Santocel Z & Open Asbestos Fiber Date: 10/13/67
Monsanto Name: MAROCCEL A Me3. Dept. _____
Project No: _____
Type of Compound (insecticide, plasticizer, etc.): Thickening Agent

PHYSICAL PROPERTIES

Form: Fine powder Melting Point: _____ Vapor Pressure: _____
Dustiness: Yes Boiling Point or Range: _____

CHEMICAL PROPERTIES

Purity (expected impurities): Mg(OH)₂ Si₂O₅
Stability: _____ pH: 6.5-7.5 in aq. slurry
Solubilities: _____
Water: Insoluble Alcohol: _____
Organic Solvents: Insoluble
Vegetable Oils: Insoluble
Mineral Oils: Insoluble

PROSPECTIVE USE: (method of handling, concentration used, etc.)
Product will be used industrially by addition to various liquid polyester and other resin systems.

METHOD AND HAZARDS OF MANUFACTURE

Asbestos fiber will be blended with SANTOCCEL Z in a closed blending system.

EXPECTED EXPOSURE: Dusting

HISTORY OF EFFECTS NOTED IN LABORATORY OR PROTECTION: None

LITERATURE REFERENCES: See attached Union Carbide literature.

Urgency of Project: Test marketing scheduled in November 1967.

Remarks: Samples can be provided by H. Lecher or R. Marotta

6113-024070

UNION CARBIDE CORPORATION

270 PARK AVENUE NEW YORK 17, N.Y.

ASBESTOS TECHNOLOGY REPORT

It has been known for many years that some persons working in asbestos production were prone to develop a disabling lung disease. In time, this condition became known as asbestosis and was related to exposure to high concentrations of asbestos dust. With further experience, it was found that men could work with asbestos without development of lung disease if dust concentrations were kept below a certain level. It is now generally accepted that a man can work a 40-hour week for a lifetime without developing asbestosis if the asbestos dust particle count is kept at or below 5 million particles per cubic foot of air. This dust concentration of 5 million particles per cubic foot of air is the Threshold Limit Value for asbestos, and no cases of asbestosis are known to have occurred when exposures have been maintained at or below this level, despite large-scale utilization (now approaching one million tons per year in the U.S.A.). This concentration of dust is generally not visible in the average work area unless a beam of light causing a Tyndall effect is present. Usually the dust concentration must be from 3-10 million particles per cubic foot before its presence is visible in average lighting conditions.

Several years ago, it was reported that there was an increase in the incidence of cancerous tumors, especially of the lung, associated with asbestosis. Recently there have been reports of some cancers occurring in individuals exposed to asbestos dust, but who have not developed clinical asbestosis. It is believed by most authorities that these cases have been associated with exposure significantly above the Threshold Limit Value. A major manufacturer of asbestos products, Union Carbide, has not been able to show an increase in cancerous growths in men working where dust concentrations were maintained at the Threshold Limit Value.

Control of asbestos dust is therefore necessary. The control methods are the standard ones applicable to a variety of dusty operations. They include closed flow systems, wet processes where possible, and adequate exhaust ventilation where openings in the system are necessary. Lubricating is sometimes used to improve the handling characteristics of certain dusty materials. Where satisfactory containment to stay within the Threshold Limit Value is impractical or impossible, efficient and reliable respirators are available for the protection of the employee. A program of environmental monitoring is highly desirable to determine that Threshold Limit Values are not being exceeded. In paper manufacturing, it would be desirable to know the dust concentrations where the asbestos is dumped from bags into the pulp slurry. Concentrations should also be determined where dusting occurs in finishing products. While initial dust determination should be made at frequent intervals, once the level has been established as satisfactory, the frequency may be extended to occasional tests to assure continuation of a satisfactory condition.

6113-024071

Pre-employment and periodic physical examinations of workers are desirable. These should include chest X-rays to insure that the worker has no chest condition prior to work with asbestos and to determine that no lung changes are resulting from work with asbestos.

It is believed that the addition of asbestos at the proposed levels during the manufacture of paper products would be harmless to the consumer. Total dusting would have to be well in excess of any levels acceptable to the consumer for the asbestos concentration to approach the Threshold Limit Value.

In conclusion, while asbestos dust in excess of the Threshold Limit Value is potentially harmful, as are many other dusts encountered in industry, it is as readily controlled as other such dusts and it can be used safely with appropriate precautions.

Carl U. Darnehl, M. D.
Director of Toxicology

K. S. Lina, M. D.
Assistant Director of Toxicology

6113-024072

St. Louis

October 19, 1967

MAROCCEL A

R. Mar. ca - MARCO

P. L. Liss - PLISS

Mr. Harry Teicher
NTEIC

I would use the following type warning statements for our customers to whom we are detailing subject compound.

"Maroccel A is a physical blend of a purified asbestos fiber and a colloidal silica powder. Asbestos dust control is quite necessary. These methods include enclosed flow systems, wet processes, and adequate exhaust ventilation where openings in the system are necessary. For temporary or intermittent operations in which dusting occurs, dust respirators approved by the U.S. Bureau of Mines must be used.

"The threshold limit value for asbestos dust particles is five million particles per cubic foot of air. This is a relatively small amount and if noticeable dust is present the level is higher than the above stated value."

You can edit the description of the products any way you want. I do not believe any toxicity work is necessary.

R. Ernest Kelly, M. D.

PLA/ln

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