FILE NAME: Kaiser Gypsum (KG)

DATE: 1972 Feb 4

DOC#: KG011

DOCUMENT DESCRIPTION: Letter from Calibria Asbestos to KG RE Asbestos Toxicology & Gov Regulations with Attached Literature RE Asbestos in Calidria Products

Carbon Asbestos

UNION CARBIDE

THE DISCOVERY COMPANY

UNION CARBIDE CORPORATION • MINING & METALS DIVISION • P.O. BOX 579 • NIAGARA FALLS, N.Y. 14302 • TEL: 716-285-3311

February 4, 1972

Mr. R. W. Grigg
Commodity Purchasing Manager
Kaiser Gypsum Company, Inc.
Kaiser Center - 300 Lakeside Drive
Oakland, California 94604

Dear Mr. Grigg:

Walt Fitzpatrick has asked me to reply to your letter to him dated December 27, 1971 concerning asbestos toxicology. As we discussed all of your questions cannot be answered directly because federal regulations have not been finalized and/or explicitly defined.

We are in the process of preparing a lengthy Corporate "position aper" on asbestos, its uses, controls, etc. We hope to complete he paper by April; however, for expediency, I will answer your questions to the best of my personal ability. We will keep you advised of new information and send you a copy of the final Corporate document.

There are two separate federal agencies which have recently issued revised or proposed regulations concerning asbestos (copies attached). The Department of Labor through the Occupational Safety and Health Administration (OSHA) has issued "emergency" regulations lowering the Threshold Limit Value (TLV) for asbestos from 12 to 5 fibers per ml of air greater than 5 microns in length, and eliminated the total dust count as an alternate TLV. These regulations apply to employees handling asbestos in your plants as well as users of your products. On January 12, OSHA also published "proposed rule making" in the Federal Register, Vol. 37, No. 7.

The Environmental Protection Agency (EPA), under the 1970 Clean Air Act, has issued <u>proposed</u> standards which would govern emissions from plants and certain job sites. These standards will be reviewed in

March and will not be enacted until later this year. Of major mutual concern is their proposal to prohibit the spraying of asbestos or products containing asbestos, without regard to the amount of asbestos contained. We feel that the intent is to ban only the spraying of asbestos insulation and the gross negligence which has been inherent with this operation. We will prepare comments for the EPA and hope to get a favorable definition of "spraying" to fit the intent of the current proposed ban.

The comments below are in conjunction with the numbered questions in your letter.

1. Calidria Asbestos SG-210 is chrysotile asbestos, the same as Canadian grades 7RF, 7TF and 7DI. The biological effects and basic mineralogical or crystalline nature are the same.

   I have enclosed a copy of "Airborne Asbestos", a report issued by the National Academy of Sciences. It fully explains the health hazards and discusses them in an objective manner.

2a. Unless you have enough local ventilation to prevent fiber counts at breathing zones from exceeding the OSHA TLV, respirators should be worn when handling dry asbestos. The handling of pastes containing asbestos should present no problem. No dust will be generated once the asbestos fibers are wet with water or resin. Respirators should be worn during dry blending operations unless dust counts indicate levels below 5 fibers per ml greater than 5 microns long.

2b. Technically, when asbestos is heated to 700°C it is converted to forsterite, a non-toxic mineral. Emptied bags and other waste incinerated at temperatures above 700°C should presumably not emit asbestos fibers to the atmosphere. Because of inherent unanswered questions, we would not recommend this method of disposal. Emptied bags and other waste could be placed in large plastic bags and disposed of in land-fill operations. Under current and proposed regulations the latter method may be most practical and acceptable. Waste bags may be of interest to a local paper-maker but we have not explored this possibility.

2c. The type of respirator required depends on the dust levels to which an employee is exposed, see article 1910.93a (c) of the enclosed OSHA regulations. Your operations would probably require no more than the respirators referred to

in sub-paragraph (2). For comfort and efficiency we would recommend Willson's Model No. 1009 with R-520 filter or MSA's No. 86432 with type "H" Ultra-filter, both of which are approved by the Bureau of Mines.

2d. Dust monitoring techniques are described in the attached procedure issued by the ACGIH. I have also included suggested equipment and its approximate cost. We would be glad to advise your industrial hygiene personnel and could make dust counts in your plants, at your discretion. Such measurements would be for our mutual benefit, not in connection with any government agency inspection.

2e. Accidental "overexposure" to asbestos dust does not seem to be a relevant problem if you are referring to a "one-time" type exposure. All published studies indicate that exposures must be experienced for long periods, 20-30 years, to cause lung damage or associated physiological changes.

3. This is the most difficult question to answer since we have no data indicating asbestos fiber counts in dust generated in performing the jobs mentioned in your letter. We are collecting materials and equipment to perform tests in our Niagara Falls R&D labs. We will obtain dust counts during the spraying of ceiling textures and the application and sand papering of joint compounds. If you could send us a typical dry mixture we could include simulated job-mixing of such material in our tests. We would need mixing instructions and at least the approximate asbestos content.

The revised OHSA regulations answer your specific questions as follows:

3a. Article 1910.93a (e).
3b. Article 1910.93a (d)(3).
3c. Article 1910.93a (f) and (g).
3d. Article 1910.93a (d)(2). This may not apply to hand sand-papering but would require clarification.

These articles seem unnecessarily restrictive for your applications but we do not as yet have any data for argument.

4. Per our telephone conversation I would not attempt to discuss the scope of the regulations or interpret their many complexities.

There is a hearing concerning the EPA proposed standards in

Oakland, California

Los Angeles on February 15th at 10:00a.m. in the U.S. Courthouse, Room 1501, 312 N. Spring Street. Testimony will be presented by several companies and the Asbestos Information Association. I think you would find the hearing of interest and beneficial and would suggest that Kaiser Gypsum be represented. No advance notice is required except for those presenting testimony.

After reviewing the revised and proposed regulations, you may wish to make comments to the OSHA or EPA. If you do not want to do this directly, we would be glad to incorporate any information you have in our responses. OSHA comments are due by February 11 and responses to the EPA are due by March 6th. It is possible that the former date may be extended.

Although it seems somewhat out of place, and perhaps unnecessary, I would like to end this with a brief commercial. Your use of SG-210 is appreciated and we look forward to supplying more of your asbestos requirements in 1972. If our original formulating work was indicative, you should be using 30-50% less SG-210 compared to Canadian asbestos. This would reduce the total amount of asbestos you use and the amount in the products you sell. We also have asbestos in pellet form and they are essentially free of airborne-type dust. Although pellets would not be amenable to dry-mix, you may want to consider their use in ready-mix compounds.

My apologies for the delay in answering your letter - please let me know if we can be of any further assistance.

Very truly yours,

John L. Myers

John L. Myers
Marketing Manager

/cvb
Enclosures

cc: W. J. Fitzpatrick
J. S. Sheahan

Calidria ASBESTOS

"CALIDRIA" ASBESTOS SG-130 AND SG-210
For Tape Joint Compounds

Lowers Costs Two Ways

CALIDRIA Asbestos acts as a bodying and secondary thickening agent permitting formulation of lower density, more economical tape joint compounds without the sacrifice of performance. CALIDRIA Asbestos is produced by a proprietary manufacturing process that yields unusually high fiber content and more complete fiber liberation from the natural bundles. As a result, CALIDRIA Asbestos goes up to twice as far, pound for pound, as commercial grades of asbestos containing large amounts of other filler materials that have no specific desirable effects on tape joint compound properties.

Reduces Cracking

The fibers of CALIDRIA Asbestos behave as an active lyophobic colloid in aqueous dispersion; by this mechanism CALIDRIA Asbestos increases tape joint compound liquid cohesive strength during drying. Increased liquid cohesive strength greatly reduces the tendency for cracks over nail holes, in thick sections at the center of the joint, and along the feathered edges.

Enhances Sandability

CALIDRIA Asbestos contains mainly chrysotile fiber and is essentially free from abrasive contaminants, such as magnetite and serpentine rock dust. This composition results in a low density product, free from contaminants that interfere with sanding.

Improves Uniformity

Narrow and well-controlled particle size distribution, low alkalinity and high brightness are characteristic of CALIDRIA Asbestos. These properties are consistent from batch to batch and improve the uniformity of tape joint compounds using CALIDRIA Asbestos.

Suggestions for Use of CALIDRIA Asbestos

CALIDRIA Asbestos can be readily used in your present tape joint compound formulation. Add approximately one-half the proportion of asbestos you now use. Increase the proportion of calcium carbonate or other inert filler to make up for the lower quantity of asbestos. You may also be able to use slightly more water in your ready-mix and maintain your present viscosity level. No other changes in your

October, 1968
F-42258

UNION CARBIDE CORPORATION • CHEMICALS AND PLASTICS • 270 PARK AVENUE, N.Y., N.Y. 10017

"CALIDRIA" ASBESTOS SG-130 AND SG-210

For Tape Joint Compounds

Suggestions for Use of CALIDRIA Asbestos (Continued)

formulation or manufacturing procedure are required.

CALIDRIA Asbestos SG-130 has the coarser particle size; it finds use for bedding compounds or perhaps spackling compound. The SG-210 has the finer particle size and is favored for topping compounds, all-purpose compositions, texture paints, and similar formulas.

A Suggested Ready-Mix Tape Joint Compound For Use With CALIDRIA Asbestos

	Parts by Weight Dry Basis
Fillers:	
Calcium Carbonate, No. 1 White (Thompson Weinman)	61.42
Mica, P80F (Western Mica)	21.00
Clay, ASP-400 (Minerals and Chemicals Philipp Corp.)	4.00
CALIDRIA Asbestos, SG-210 (Union Carbide)	4.58
Binder:	
UCAR Latex 131 (Union Carbide)	6.60*
Workability Control Agent:	
CELLOSIZE Thickener, TJC Grade (Union Carbide)	0.50
Drying Control:	
Ethylene Glycol (Union Carbide)	1.00
Defoamer:	
"Nopco" PD-1 (Nopco Chemical Company)	0.10
Dispersant:	
"Daxad" 30 (Dewey & Almy Chemical Div.)	0.60*
Bacteriastat:	
"Dowicide" A (Dow Chemical Co.)	0.20
	100.00

Total Water: about 56 parts by weight per 100 parts dry solids

*Contained solids basis

Typical Product Characteristics

	CALIDRIA Asbestos	
	SG-130	SG-210
Reflectance (G.E. Photovolt)	68%	
Contained magnetite	2% max.	
Alkalinity (as % of Na_2O)	0.05 to 0.06	
pH (5% aqueous slurry)	8.5 to 9.5	
Surface area (BET)	50 to 60 m^2/g.	
Oil Adsorption (DOP #/100# asbestos)	90 to 100	110 to 120
Wet Bulk, settled vol. (ml.) 10g/250 ml./1 hr.	200	220
Dry Bulk (#/ft.^{3})	2 to 8	5 to 6
Water absorption (wt. % in filter cake)	55 to 60	62 to 65
Size distribution (cumulative % retained)		
Wet Screen mesh size		
100	5	Trace
200	17	3
325	28 to 32	10 to 15

Packaging and Shipping Information

Product Form – Opened (finely ground) chrysotile asbestos fiber.

Packaging –

	CALIDRIA Asbestos	
	SG-130	SG-210
One Package	40 lb.	30 lb.
Pallet Weight		
Carload	1,600 lb.	1,050 lb.
Truckload	2,000 lb.	1,500 lb.

Shipping –

Classification – asbestos shorts

Rail point of origin – Welby, California (King City, California)

TOXICOLOGICAL PROPERTIES

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

TOXICOLOGICAL PROPERTIES (Continued)

of asbestosis are believed 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 8 - 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 exposures significantly exceeding the Threshold Limit Value. A major manufacturer of asbestos products who also mines asbestos has not been able to show an increase in cancerous growths in men working where dust concentrations were maintained at the Threshold Limit Value.

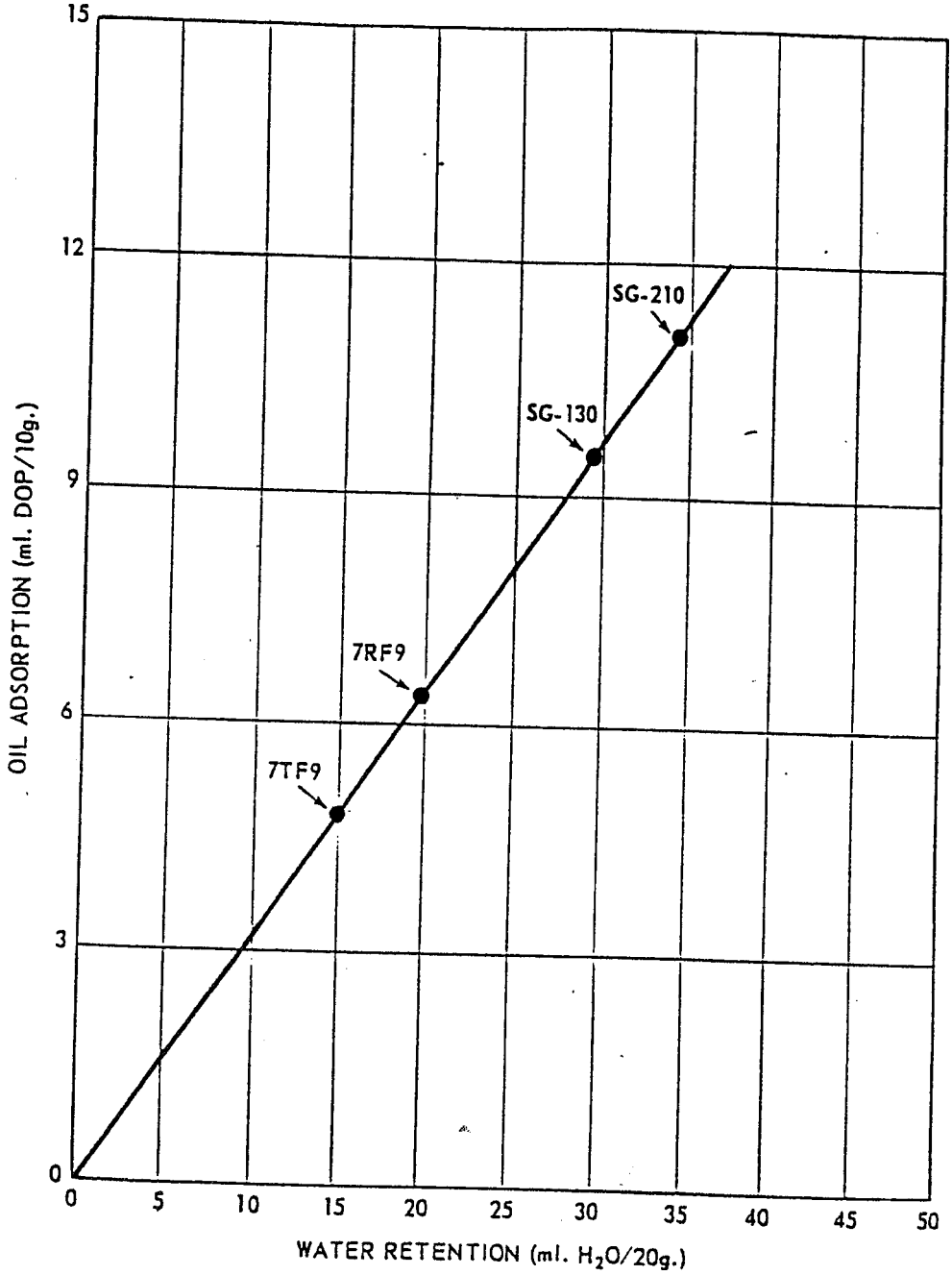
Control of asbestos dust exposure is therefore necessary. The control methods are the standard ones applicable to a variety of dusty operations. They include closed flow systems, wet processes where possible, and adequate exhaust ventilation where openings in the system are necessary. Pelletizing is sometimes used to improve the handling characteristics of otherwise 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 in manufacturing operations is highly desirable to determine that Threshold Limit Values are not being exceeded. Employees should wear respirators where dusting occurs in finishing products such as sanding taped joints.

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.

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.

"CALIDRIA" ASBESTOS SG-130 AND SG-210

For Tape Joint Compounds



RELATIONSHIP BETWEEN WATER & OIL ADSORPTION CAPACITY OF SOME ASBESTOS PRODUCTS FOR TAPE JOINT ADHESIVE FORMULATIONS

THE DISCOVERY COMPANY

UNION CARBIDE CORPORATION
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