

THE DISCOVERY COMPANY

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

August 11, 1972

Mr. E. A. Andre
Research Supervisor
E. I. du Pont de Nemours & Company
Marshall Laboratory
35th & Grays Ferry Avenue
Philadelphia, Pa. 19146

Dear Mr. Andre:

My apologies for not responding sooner following our telecon on July 26th.

Our products are chrysotile asbestos and are basically no different with regard to potential health hazards than any other chrysotile asbestos. Simple precautions will permit the safe use of "Calidria" Asbestos, especially in relatively small quantities.

The attached table contains fiber count data obtained by our Industrial Hygiene personnel. We feel that this data is typical and that the spraying or abrading of resin and similar materials containing relatively small quantities of "Calidria" Resin Grade asbestos contributes very little to the generation of free asbestos fibers.

We are obtaining additional lab and field data to substantiate our original findings and we would be glad to work with you in testing your particular product.

In discussions with OSHA personnel it is obvious that they are primarily concerned with large users of raw asbestos and not with products in which the fiber is held by a strong organic binder. I have received similar information from EPA personnel. A copy of current OSHA regulations is enclosed for your files.

As you are aware it is very difficult to cover this subject in a letter. If you have further questions I would be glad to discuss them at your convenience in Philadelphia or elsewhere.

Very truly yours,


John L. Myers

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cc: Mr. G. L. Dickson
NF-File

DUP 0902872

SC-DP-03840

TABLE 1
POLYESTER RESIN MANUFACTURE
AND APPLICATIONS

Application Type	"Thixotropic" Agent	Activity	Dust Counts		Notes and Comments (3)
			Fibers/ml. (1) > 5 ~	Total Dust (2) MPPCF	
Large polyester manufacturing plant. (No special ventilation.)	None	Background prior to tests.	0.2 0.3 0.2	7.0 6.4 6.7	Breathing level of tank prior to operation. No typical asbestos fibers observed.
	Pyrogenic silica	Dumping 10 bags (200 lbs.) into thin tank over about 25 minutes.	1.3 1.0 0.6	28.4 38.6 24.2	
	RG-244	~250 Pounds of pyrogenic silica dumped over 20 minute period. Wait 10 minutes. Dump ~250 lbs. of RG-244 over 23 min.	4.4 11.5 1.4	13.7 16.6 10.2	
	RG-244	Background 25 minutes after dump.	1.4	9.3	Fibers counted <u>not</u> typical of asbestos.
	RG-244	Dumping 5 bags (50 lbs.) of RG-244 in ~3 minutes.	2.8	9.6	Dumping completed after about 3 minutes of 10 minute sample. Typical asbestos fibers counted. Careful dump.
	Pyrogenic silica	Dumping 5 bags (50 lbs.) of pyrogenic silica in ~3 minutes immediately following RG-244 dump.	1.2	12.1	Dumping completed after about 3 minutes of 10 minute sample. Fibers counted <u>not</u> typical of asbestos.
	~0.5% RG-244 and ~0.5% pyrogenic silica	Spraying on mold exterior to manufacture shower stalls. Typical air supported chopper gun.	1.4	12.4	Fibers counted <u>not</u> typical of asbestos. No fibers observed that could be identified as fiber glass.
			1.3	11.8	
			1.0	15.1	
			1.2	14.0	
			1.0	12.4	

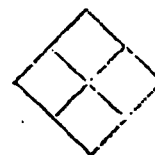
Table I - Continued

Application Type	"Thixotropic" Agent	Activity	Dust Counts		Notes and Comments (3)
			Fibers/ml. (1) >5 μ	Total Dust (2) MPPCF	
Large polyester fiber glass boat yard.	~0.5% RG-244 and ~0.5% pyrogenic silica	Typical laminating operations. Standard air-supported chopper gun.	1.1	19.1 (a)	Samples taken at breathing zone of operator spraying into a boat mold. Samples marked (a) taken during gel coat spraying about 50 feet away which fogged entire building. Fibers counted <u>not</u> typical of asbestos.
			0.9	22.3	
			0.8	12.4	
			1.2	17.5 (a)	
			1.3	10.8	
	~0.5% RG-244 and ~0.5% pyrogenic silica	Edge grinding of cured resin boat hulls and inserts. Outdoors.	3.0	---	Fibers counted <u>not</u> typical of asbestos. Wind was quite strong and changing directions frequently. Heavy cloud of visible dust produced.
			2.3	---	
			2.1	---	
Large polyester furniture coating manufacturer. Good building ventilation.	~0.05% RG-244	Hand sanding polyester coatings.	0.002	1.6	Small amount of dust found apparently generated during stacking of sanded parts.
			0.002	1.9	
			0.003	1.9	
		Large power sander with integral hood sanding polyester casting.	0.001	0.6	
			0.002	2.6	
			0.002	3.5	
		Mold filling area. (Liquid polyester poured.)	0.001	1.0	
		Mixing area where RG-244 added to liquid polyester.	0.004	3.8	
			0.007	5.4	
			0.005	4.1	

- (1) Present OSHA standard for asbestos fibers (~5 microns in length) is 5 fibers per milliliter as an 8-hour time-weighted average. 10 fibers per milliliter may be allowed for no more than 15 minutes per hour for up to 5 hours in an 8-hour day.
- (2) MPPCF - Millions of particles per cubic foot of air. The present OSHA standard for amorphous silica is 20 MPPCF, and the existing OSHA standard of 50 MPPCF would apply to both fibrous glass and the dust from polymerized styrene.
- (3) All samples taken at breathing zone level of operator. 10 Minute collection time unless noted.

MATERIAL SAFETY DATA

UNION CARBIDE CORPORATION
4625 ROYAL AVENUE • NIAGARA FALLS, NEW YORK 14302
TELEPHONE: (716) 225 - 3311 Ext. 6567



PRODUCT: Chrysotile Asbestos

CHEMICAL FORMULA: $Mg_6(OH)_8Si_4O_{10}$

TRADE NAMES: Calidria Asbestos

I. PHYSICAL DATA

BOILING POINT AND MELTING POINT: Not Pertinent

SPECIFIC GRAVITY ($H_2O = 1$): 2.45

VOLATILE CONTENT: Absorbed Water 1 - 4% By Weight.

Structural Water Approximately 13% by Weight.

APPEARANCE: Pellets or Fine White Powder. No odor.

Very Slight Solubility in Water.

II. HAZARDOUS INGREDIENTS

Not Applicable.

III. FIRE AND EXPLOSION HAZARD DATA

Material is not Combustible. No Fire or Explosion Hazard.

IV. REACTIVITY DATA

INERT MATERIAL: No Decomposition or Polymerization Conditions.

V. HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE: AIRBORNE CONCENTRATION

The 8-hour time-weighted average airborne concentration of asbestos dust to which employees are exposed shall not exceed 5 fibers per milliliter greater than 5 microns in length, as determined by the membrane filter method at 400-450X magnification (4 millimeter objective) phase contrast illumination. Concentrations above 5 fibers per milliliter but, not to exceed 10 fibers per milliliter, may be permitted up to a total of 15 minutes in an hour for up to 5 hours in an 8-hour day. (Per Emergency Standards of OSHA, Federal Register, Volume 26, December 7, 1971, Pages 23207-23208)

EFFECTS OF OVEREXPOSURE: Prolonged over exposure may result in lung damage.

EMERGENCY AND FIRST AID PROCEDURES: Not applicable. Material has no acute toxicity.

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VI. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: Avoid inhalation of dust. Remove spilled material by vacuum cleaner.

WASTE DISPOSAL METHOD: Waste and scrap should be collected and disposed of in sealed bags or other sealed containers. Burial or landfill suggested.

VII. SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION

AIRBORNE CONCENTRATION ⁽¹⁾		REQUIRED MASK TYPE	TYPICAL MASK
8 HOUR EXPOSURE ⁽²⁾	15 MINUTE EXPOSURE ⁽³⁾		
5 maximum	10 maximum	None required.	—
25 maximum	50 maximum	U.S. Bureau of Mines Schedule 21B. Negative pressure on breathing. Covers nose and mouth.	Willson Model 1909 with R-520 Filter and M-S-A No. 86432 with Type H, Ultra Filter and others.
250 maximum	500 maximum	U.S. Bureau of Mines Schedule 21B Powered filter positive pressure.	Pursonal Environment Systems, Inc. Hood 330 or 351 with 1900 Series filter.
Over 250	—	U.S. Bureau of Mines Schedule 19B Type C positive pressure, air supplied.	Willson GA211 M-S-A Lead-Fog and others.

(1) Fibers per milliliter greater than 5 microns in length, as determined by the membrane filter method at 400–450X magnification (4 millimeter objective) phase contrast illumination.

(2) 8-Hour time weighted average.

(3) 15 Minutes in an hour for up to 5 hours in an 8-hour day.

Reference – Federal Register, Volume 36, Pages 23207 – 23208, December 7, 1971.

VENTILATION

Local exhaust for each operation is preferable. General area exhaust is acceptable. No special considerations.

PROTECTIVE GLOVES: None

EYE PROTECTION: None

OTHER PROTECTIVE EQUIPMENT: None

VIII. SPECIAL PRECAUTIONS

MINIMIZE DUSTING AND BAG DAMAGE. AVOID INHALATION OF DUST.