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PLAINTIFF'S
EXHIBIT
CAM-264

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PROJECT COST RECORD

PROJECT TITLE: talc

MA 8802

SPONSOR: CYPRUS INDUSTRIAL MINERALS CO

PROJECT NO.: _____

ADDRESS: 555 S. Flower St
Los Angeles, Calif 90071DATE RECEIVED: 2 1 80P.O. NO.: 36955

COMMITMENTS: \$ _____

Contact: cc: report to Lou MurinoTelephone No.: (213) 489-3700

SUMMARY OF PROBLEM:

Lab Notebook References:

No. _____ pp. _____ Initials _____

No. _____ pp. _____ Initials _____

No. _____ pp. _____ Initials _____

Photomicrographic record no. _____

original to: Joseph Blashka
Crown Zellerbach
Camas, WA 98607206-834-3021

Sample disposal:

returned _____

filed (where) _____

discarded _____

DIRECT COSTS

Individual time (Exclusive of oper. time on inst. below)				Travel				Charge Summary	
Date	Name	Hours	Charge	Date	Traveler	Destination	Cost		
3-10-80	RE		300 ⁰⁰					Individuals	\$
9-16-80	RME	4						Instrument	
4-29-81	RME	4						Travel	
								Outside	
								Other	
Instrument time								Total Charge	\$
	Date	Hours	Charge		Date	Company	Cost	OK for billing Project Ldr _____ Group Ldr _____	
SEM				Photo					
TEM				Photo					
XRD				Materials					
EMP				Supplies					
IMP									
ESCA									
EMMA									
MOLE									

TOTAL CHARGE \$ 300 -

BILLED TO CLIENT \$ _____

INVOICE NO. (S) 6368 / 17 Mar 80 - 816 Sept⁸⁰ reportINV 7407 / \$450.30 Apr 81 / 29 Apr 81 report
INV 8612 → \$300 - 2PROJECT LEADER: RE

Cyprus Industrial Minerals Company

555 South Flower Street
Los Angeles, California 90071
Telephone (213) 489-3700

MA 8802

Purchase Order

Ship To:
Acknowledgement Requested

26 May 81

Vendor

McCrone Research Center
2830 S. Michigan Avenue
Chicago, IL 60616

(Attn: Mr. Rick Ellis)

Invoice in triplicate

To: Cyprus Industrial Minerals Company
2435 Military Avenue
W. Los Angeles, CA 90064

Date	Ship Via		Date Required	Terms
3/23/81			ASAP	
Quantity Ordered	Quantity Received	Description	Unit Price	Total
		Identify ~~fibers~~ fibers in Talc #1 by TEM/SAED. Attached micrographs illustrate the fibers observed in the sample.		

28876

Above order number must appear on all papers and packages relative to this order.

M. M. Kazazian M. M. Kazazian
Approved Tech. Services Mgr.

CYPRUS



walter c. mcrone associates, inc.

CONSULTING: ULTRAMICROANALYSIS • MICROSCOPY • SMALL PARTICLE PROBLEMS • SOLID-STATE CHEMISTRY

29 April 1981

Ms. Kazazian
Cyprus Industrial Minerals Company
2435 Military Avenue
Los Angeles, CA 90071

Dear Ms. Kazazian:

I have completed my electron optical analysis of a sample of Talc #1 submitted under P.O. #28876.

The sample was analyzed by transmission electron microscopy and selected area electron diffraction. The fibers seen in the sample as per your photomicrographs were determined to be talc ribbons. They gave a non pseudo-hexagonal electron diffraction pattern because they were standing on edge. The normal basal reflections give the pseudo-hexagonal pattern.

Thank you for consulting McCrone Associates. Please contact me if you have any questions.

Sincerely,

Richard M. Ellis
Research Microscopist

RME:jr
Ref. MA 8802

213/473-9417

Maral

8802

Cyprus Industrial Minerals Company

555 South Flower Street
Los Angeles, California 90071
Telephone (213) 489-3700

Purchase Order

Ship To:
Acknowledgement Requested

Cyprus Industrial Minerals
2435 Military Avenue
Los Angeles, CA 90064

attn: R. Horning

Invoice in triplicate

Vendor

McCrone Research Co.
2820 So. Michigan Avenue
Chicago, IL 60616

Attn: Mr. Rick Ellis

To:

same

rec'd
14 Aug 80
[Signature]

Date	Ship Via		Date Required	Terms
8/13/80			ASAP	Net 30
Quantity Ordered	Quantity Received	Description	Unit Price	Total
		TEM/SAED to identify fibrous mineral present. Also check for tremolite Talc Sample.		
		Approximate Cost - \$450.00		
			<i>OK to do</i> <i>per DAB</i> <i>18 Aug 80</i> <i>[Signature]</i>	

28841

Above order number must appear
on all papers and packages
relative to this order.

Ruthanne Horning
Approved
Ruthanne Horning

CYPRUS



walter c. m^ccrone associates, inc.

CONSULTING: ULTRAMICROANALYSIS • MICROSCOPY • SMALL PARTICLE PROBLEMS • SOLID-STATE CHEMISTRY

16 September 1980

Ms. Ruthanne Horning
Cyprus Industrial Minerals Co.
2435 Military Avenue
Los Angeles, California 90064

Dear Ms. Horning:

I have completed my asbestos analysis of a talc sample submitted under purchase order #28841.

The sample was examined with the transmission electron microscope. The analysis utilized Selected Area Electron Diffraction (SAED) and Energy Dispersive X-ray Analysis (EDXRA). The sample contained no asbestiform minerals. The only particles with aspect ratios higher than 3:1 were talc ribbons.

Thank you for consulting McCrone Associates. Please contact me if you have any questions.

Sincerely,

Richard M. Ellis, Jr.
Research Microscopist

RME:gb
Ref: 8802

RECEIVED APR 25 1980

Cyprus Industrial Minerals Company

555 South Flower Street
Los Angeles, California 90071
Telephone 213) 489-3700

TWX 910) 321-5753

April 21, 1980

Mr. Donald Brook
McCrone Associates, Inc.
2820 South Michigan Avenue
Chicago, Illinois 60616

Dear Mr. Brook:

Confirming our telephone conversation concerning the Continental Minerals phone call (Mr. George Jennings), attached is a copy of the information that was passed to our salespeople. In addition, I have attached a copy of our laboratory report #80-020 in which we agree with your findings.

Our marketing strategy is a simple one; whenever a customer has doubt concerning the mineral composition of a product we offer them the opportunity to send the sample in question to a qualified analytical lab for analysis at our expense. We feel McCrone Associates, Inc. is such a qualified organization.

Sincerely,

Louis D. murino

Louis D. Murino (aq)
Vice President
Marketing, Talc Division

LDM:tag

Attachments: Lab Report #80-020
McCrone Letter dated 3/18/80

CYPRUS

CYPR-MA08802-0009



walter c. mcrone associates, inc.

CONSULTING: ULTRAMICROANALYSIS • MICROSCOPY • SMALL PARTICLE PROBLEMS • SOLID-STATE CHEMISTRY

file
Mr. Joseph Blashka
Crown Zellerbach
Camas, Washington 98607

Dear Mr. Blashka:

We have completed our examination by transmission electron microscopy and selected area electron diffraction of the talc sample C-Z, Camas which you submitted for determination of asbestos content.

The sample was prepared by suspending a small portion of the powder in ethanol and ultrasonerating, to break up any aggregates. A small drop of the suspension was then placed on a previously carbon coated transmission electron microscope grid and allowed to dry. This grid was then examined in the transmission electron microscope.

During this examination particles with a fibrous morphology, that is an aspect ratio greater than 3:1, were examined by selected area electron diffraction to determine their crystallography. Based on this selected area electron diffraction it was determined that a proportion of the sample consisted of a fibrous amphibole, tentatively identified as tremolite, and that this proportion was less than 10%.

It should be pointed out that fibrous tremolite is defined in the Federal Register as asbestos, and that for the purposes of this definition a fiber is defined as a particle having an aspect ratio greater than 3:1, that is a length to width ratio of greater than 3:1. The tremolite particles observed in your sample, therefore, would be classed under existing OSHA regulations as asbestos.

Thank you for consulting McCrone Associates. If you have any questions concerning this report please contact us.

Yours sincerely,

Richard M. Ellis, Jr.
Research Microscopist

RME:gb
Ref: MA 8802
cc: Lou Murino
Gordon Gill

RECEIVED

MAR 25 1980

CYPR-MA8802-0010

MARKETING DEPT.

① CMM
2/27/80
Talc Sales 3/25/80

Gentlemen: - As you can see, McCrone thinks tremolite is asbestos. - This was a sample of Continental Minerals Cyclosorb that was sent for analysis by C-Z. This would reflect the so called "free of asbestos" certification Continental is telling its customers regarding their California talcs (the old J-M Grantham product)
JMM 3/25/80

18 March 1980



walter c. mccrone associates, inc.

CONSULTING: ULTRAMICROANALYSIS • MICROSCOPY • SMALL PARTICLE PROBLEMS • SOLID-STATE CHEMISTRY

18 March 1980

Mr. Joseph Blashka
Crown Zellerbach
Camas, Washington 98607

Dear Mr. Blashka:

At the request of Mr. Gordon Gill of Cyprus Minerals I am submitting a revised version of my report of 11 March 1980 which will clarify the position with regard to the fibrous tremolite detected in your talc sample, C-Z, Camas.

Yours sincerely,

R. M. Ellis Jr.

Richard M. Ellis, Jr.
Research Microscopist

RME:gb
Ref: MA 8802
cc: Lou Murino
Gordon Gill

RECEIVED

MAR 25 1980

MARKETING DEPT.

CYPR-MA08802-0011

Cyprus Industrial
Minerals Company

555 South Flower Street
Los Angeles, California 90071

1111
1111
1111
1111



Jan info —
From for project file —

Mr. Donald Brook
President
McCrone Associates, Inc.
2820 South Michigan Avenue
Chicago, Illinois 60616

CYPRUS

Laboratory Report

Cyprus Industrial Minerals Company

555 South Flower Street
Los Angeles, California 90071
Telephone 213) 489-3700

Report No: 80-020

References:

Key: Cyclosorb

Date of Report: 1/24/80

Date of Work Request / By: 1/22/80 CRM

Copies: HTM, MFW, GJG CRM,
LDM, GDL, MMK, CJP,
LEF, FILE

Reported By: C.J. Parmentier/M.M. Kazazian

Approved By: G. J. Gill

Classification:

Status: Complete as requested.

Subject: A competitive talc sample labeled as, "Cyclosorb".

Objective: Characterize the talc sample labeled as "Cyclosorb".
"Crown Z" is considering buying this product.

TEST/RESULTS

GEB	80.2
325 mesh	99.99%
Acid solubles (as CaO)	2.67%
Hegman	6.0
Water soluble substances	.05%
Water soluble iron	none
Tap Density (Numinco)	31.6 lbs/ft ³

Scanning Electron Microscope (SEM) study of "Cyclosorb" talc sample, revealed the presence of fibrous minerals. The fiber particle population density was estimated to be about 5%, however, weight percent from XRD indicated 3% Tremolite. Microscopic study revealed that the majority of the fibers present were asbestiform. Transmission Electron Microscope (TEM/SAED) confirmed the presence of asbestiform.

CYPR-MA08802-0013

CYPRIS

Lab Report: 80-020
Cyclosorb

M. M. Kazazain/C.J. Parmentie
January 24, 1980

Tremolite fibers. Some polygorsgite fibers were also observed.

ILLUSTRATION OF MICROGRAPHS

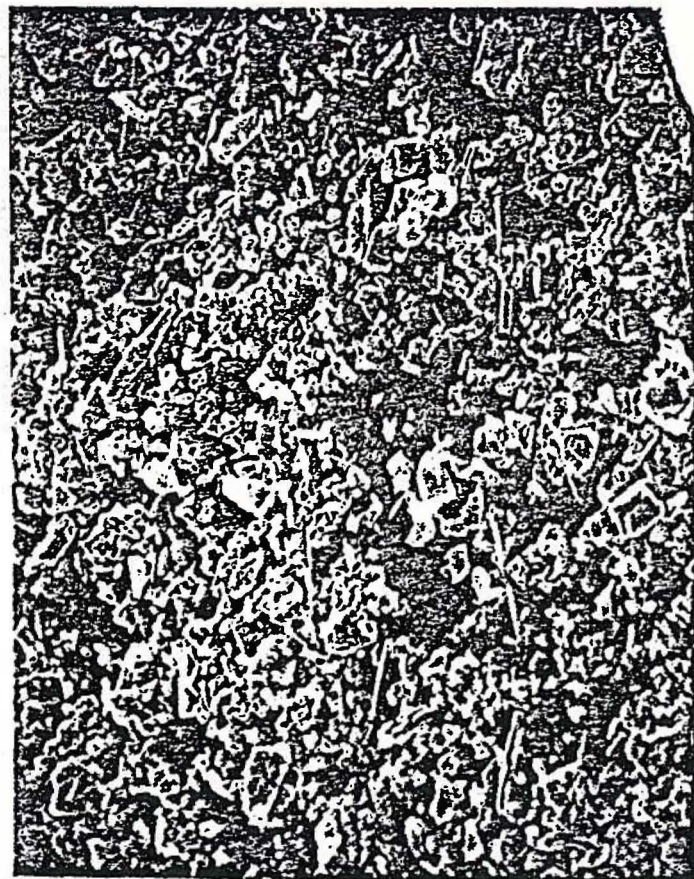
Micrographs "A" and "B" are representative area micrographs of "Cyclosorb" sample, illustrating fibrous minerals.

Micrograph "C" is a higher magnification of the fiber observed in micrograph "B" (yellow arrow).

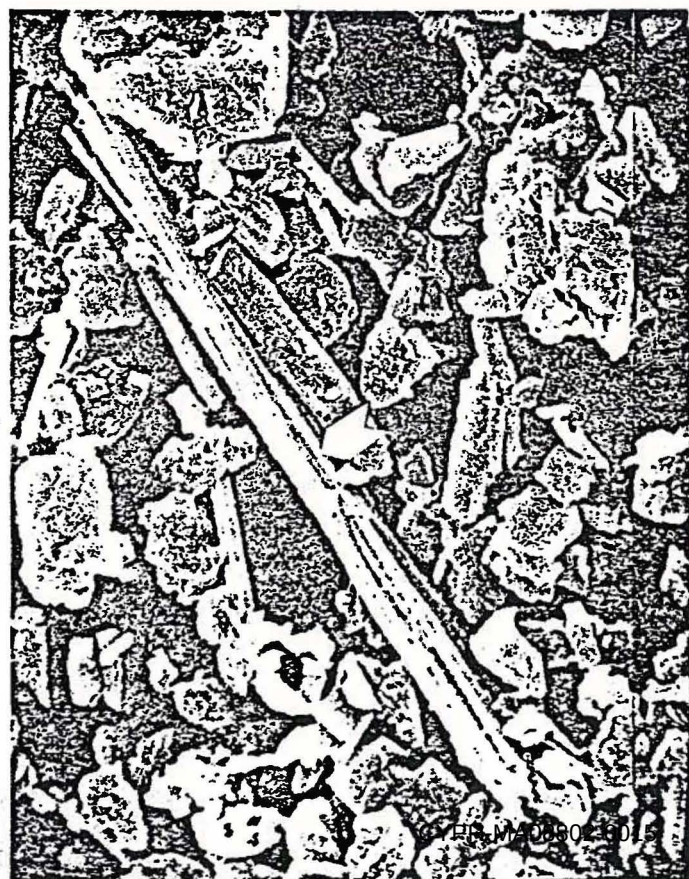
Micrograph "D" illustrates the morphology of the fibers at high magnification revealed by the (pink arrows).

*See attached CRC report for XRD, PSD, and SA.

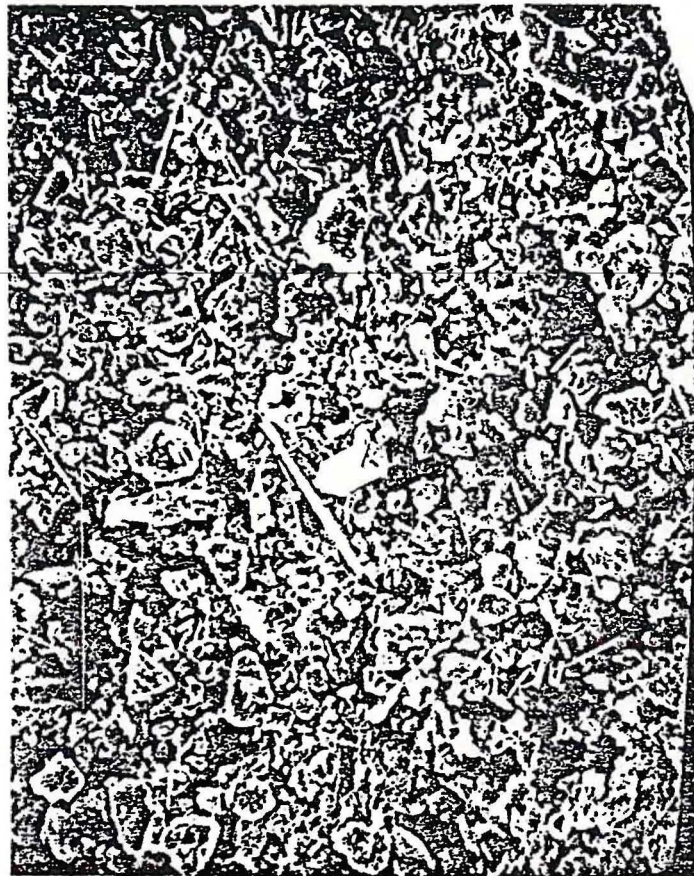
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enc.



Cyclosorb Proj# 80-020 SEM x 550 @ 30° 1.22.80



Cyclosorb Proj# 80-020 SEM x 2400 @ 30° 1.22.80



Cyclosorb, Proj# 80-020 SEM x 550 @ 30° 1.22.80



Cyclosorb Proj# 80-020 SEM x 550 @ 30° 1.22.80

Laboratory Report

Cyprus Research Company

2435 Military Avenue
West Los Angeles, California
Telephone 213) 478-0462

Filing No. 80-0023-CIMT-LA

References: 80 007 80-020

Key: Cyclosorb

Date of Report: 1/24/80

Date of Work Request / By: 1/22/80

Copies: M.KAZAZIAN, ✓ R.C. CLOUD,
P. COLVILLE, FILE

Reported By: R.C.CLOUD/P. COLVILLE

Approved By: L.E. FERREIRA *LF*

Classification:

Status: COMPLETE

Subject: Cyclosorb

Objective: XRD, PSD, SA

Results

X-ray diffraction analysis:

Talc	>80 %
Mica	<10 %
Calcite	~5 %
Dolomite	~2 %
Tremolite	3.1 %

Surface area = $4.5 \text{ m}^2/\text{g}$

See attached curve for particle size distribution

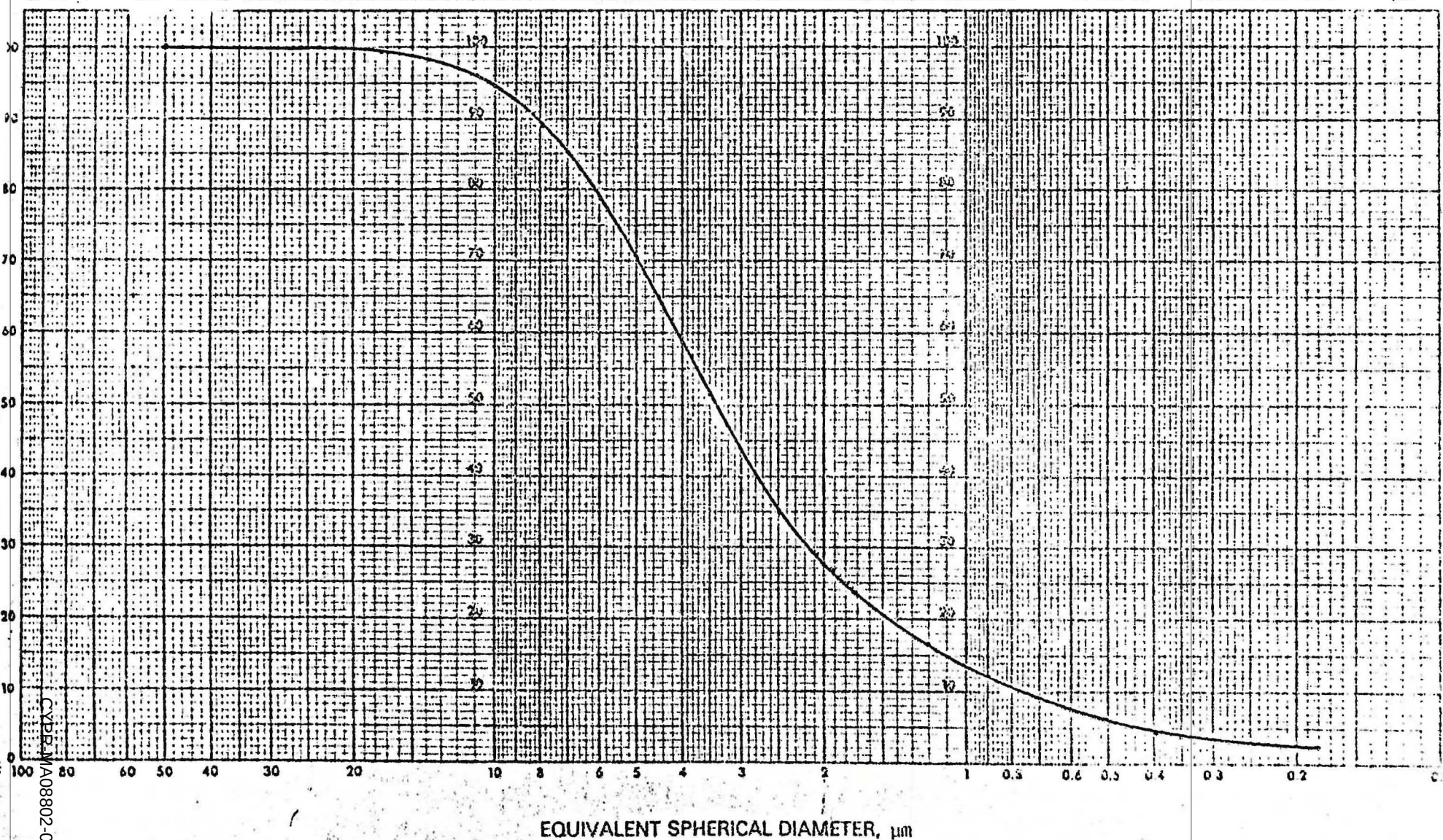
P. Colville. R.C. Cloud
P. COLVILLE/R.C. CLOUD
PC/RCC/bb

PARTICLE SIZE DISTRIBUTION

SAMPLE IDENTIFICATION Cyclosorb 80 T 007
 Density 2.75 g/cc LIQUID H₂O Density _____ g/cc Viscosity _____ cp
 Preparation _____

DATE 1/24/80
 BY R.C. CLOUD
 TEMPERATURE 32 °C
 RATE 124 START DIA. 50 μ m

80-0023



CYBER-M 00802-001



walter c. m^ccrone associates, inc.

CONSULTING: ULTRAMICROANALYSIS • MICROSCOPY • SMALL PARTICLE PROBLEMS • SOLID-STATE CHEMISTRY

18 March 1980

Mr. Joseph Blashka
Crown Zellerbach
Camas, Washington 98607

Dear Mr. Blashka:

At the request of Mr. Gordon Gill of Cyprus Minerals I am submitting a revised version of my report of 11 March 1980 which will clarify the position with regard to the fibrous tremolite detected in your talc sample, C-Z, Camas.

Yours sincerely,

Richard M. Ellis, Jr.
Research Microscopist

RME:gb
Ref: MA 8802
cc: Lou Murino
Gordon Gill



walter c. mccrone associates, inc.

CONSULTING: ULTRAMICROANALYSIS • MICROSCOPY • SMALL PARTICLE PROBLEMS • SOLID-STATE CHEMISTRY

11 March 1980

Mr. Joseph Blashka
Crown Zellerbach
Camas, Washington 98607

Dear Mr. Blashka:

I have completed my asbestos analysis of talc sample C-Z, Camas. The sample was examined using transmission electron microscopy (TEM) and selected area electron diffraction (SAED). The sample was found to contain amphibole fibers, probably tremolite. The amount is less than 10%.

Thank you for consulting McCrone Associates. Please call us if you require further information.

Sincerely yours,

Richard M. Ellis, Jr.
Research Microscopist

RME:gb
Ref: MA 8802
cc: Mr. Lou Murino
Cyprus Industrial Minerals

Cyprus Industrial Minerals Company

555 South Flower Street
Los Angeles, California 90071
Telephone (213) 489-3700

Purchase Order

Ship To:
Acknowledgement Requested

Rec'd
30 Jan 80

Vendor

Walter C. McCrone Associates Inc.
2820 S. Michigan Avenue
Chicago, IL 60616

Invoice in triplicate

To: Cyprus Industrial Minerals
555 S. Flower St.
Los Angeles, CA 90071
Attn: International Dept.

Date	Ship Via		Date Required	Terms
1-11-80				
Quantity Ordered	Quantity Received	Description	Unit Price	Total
1		Talc sample C-Z, Camas. Determination for asbestiform content with special attention to fibrous tremolite. Report results directly to: Mr. Joseph Blashka Crown Zellerbach Camas, WA 98607 cc results: Mr. Lou Murino Cyprus Industrial Minerals 555 S. Flower St. Los Angeles, CA 90071		

36955

Above order number must appear
on all papers and packages
relative to this order.

INV 636818

L. Murino 8862/RE
Approved

CYPRUS