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1014 Broadway
Cincinnati, Ohio 45202

August 31, 1972

Mr. J. J. Marino
Chief Engineer
Quigley Company, Inc.
235 E. 42nd Street
New York, N. Y. 10017

Dear Mr. Marino:

In answer to your suggestion in your letter to me of August 25 that the comment concerning the limit of 3% quartz be removed, represents a misunderstanding of the statement. The statement merely places a limit that should not be exceeded for any mixture of the constituent of perlite or perlite products.

Inasmuch as you have shown by your analyses that the limit of 3% quartz is not exceeded, your product is regarded as satisfactory from the health standpoint.

Sincerely yours,

Herbert E. Stokinger, Ph.D.
Chief, Toxicology Branch
Division of Laboratories
and Criteria Development

CONSTRUCTION PRODUCTS DIVISION

W. R. GRACE & CO. 62 WHITTEMORE AVENUE CAMBRIDGE, MASSACHUSETTS 02140 617 876-1400

August 22, 1972

Mr. J. J. Marino
Quigley Co., Inc.
235 East 42nd Street
New York, New York 10017

Dear Mr. Marino:

Confirming our conversation of today, measurements of respirable dust containing some free silica were made at two of our vermiculite expanding plants in the Fall of 1971. The TLV for the respirable mass fraction was not exceeded at the positions in the plants where the vermiculite is bagged.

The free silica concentration of our bagged vermiculite was found to be less than 1% by weight (the limit of detection). The Cristobalite content of vermiculite is not known as well, since it is harder to detect than quartz. However, it is not a major impurity occurring in vermiculite deposits. Its concentration must therefore also be less than 1%.

This information is not exhaustive but is the best we have available, and we hope it will enable you to evaluate your problems in handling Zonolite in your plant.

Very truly yours,

H. C. Duecker
Vice President-Research

HCD:mlr

QUIGLEY CO., INC.
RECEIVED
AUG 24 1972
J. J. MARINO

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We hope the information given here will be helpful. It is based on our best knowledge, and we believe it to be true and accurate. Please read all statements, recommendations or suggestions herein in conjunction with our conditions of sale which apply to all goods supplied by us. We assume no responsibility for the use of these statements, recommendations or suggestions, nor do we intend them as a recommendation for any use which would infringe any patent or copyright.

Pfizer

QUIGLEY COMPANY, INC.

235 E. 42ND ST. NEW YORK. N. Y. 10017

212 LR 3-3444

August 25, 1972

Dr. Herbert E. Stokinger
Chief, Toxicology Branch
Div. of Laboratories &
Criteria Development
Dept. of Health, Education & Welfare
1014 Broadway
Cincinnati, Ohio 45202

Dear Dr. Stokinger:

Referring to your letter of July 5 and our subsequent phone conversation concerning quartz and cristobalite in our non-asbestos insulation Panelex, I have contacted our suppliers of perlite, dicalite and vermiculite. The replies were as follows:

Perlite (9% of product formulation)
Our supplier "Pennsylvania Perlite Corp." forwarded a lab report by Walter C. McCrone Assoc. Inc. of Chicago, Ill. indicating the total free silica to be less than 0.05%.

Dicalite (2.5% of product formulation)
Our supplier, Grefco, Inc. forwarded to us a lab report from George D. Clayton & Assoc. and an article "Pneumoconiosis in Diatomite Mining and Processing" by USPHS. Although the quartz content is less than 1% the cristobalite analyzed at 61%. This cristobailite fraction calculates out as being 1.5% of the total product.

Vermiculite (26% of formulation)
The attached letter from our supplier W.R. Grace indicates free silica to be less than 1% (limit of their detection).

We must apologize for the inconvenience of reviewing this again. However, I feel I now know the basic requirements and hopefully in the future I can present all the data at once.

Based on the above we feel your previous opinion is still valid and the only modification to your July 5th. letter is to remove the comment concerning a 3% quartz content. If this can be done we would be very grateful.

Why?

Very truly yours,

J. J. Marino

J. J. Marino
Chief Engineer

Enclosures
JJM/sb

Phone 264-2891

pennsylvania perlite corporation

manufacturers of perlite aggregates

P. O. BOX 2002 ALLENTOWN, PENNA. 18001

August 10, 1972

Mr. J. J. Marino, Chief Engineer
Quigley Company, Inc.
235 E. 42nd Street
New York, NY 10017

Dear Sir:

In reference to todays telephone conversation, and your letter of April 18, 1972. Enclosed is additional supporting data on Perlite.

Our sole ore suppliers are Johns-Manville and Grefco Inc., Building Products Division. The test data from Grefco applies crude and expanded ore. Johns-Manville's data sheet shows ore only. Chemically expanded perlite is the same as crude excepting the release of H_2O.

Sincerely yours,

J. G. Sharkan

JGS/eeb
Enclosure

QUIGLEY CO., INC.
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J. J. MARINO

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RESEARCH
AND
DEVELOPMENT

- SMALL PARTICLE PROBLEMS
- SOLID STATE CHEMISTRY
- ULTRAMICRO ANALYSIS
- CRYSTALLOGRAPHY
- MICROSCOPY

WALTER C. McCRONE ASSOCIATES, INC.

GENERAL OFFICE: 493 EAST 31st STREET • LABORATORIES: 449-493 EAST 31st STREET
CHICAGO, ILLINOIS 60616
PHONE: (312) 842-7100
CABLE: CHEMICRONE

FREE SILICA DETERMINATION IN PERLITE ORE AND PERLITE PRODUCTS

Two samples, submitted to McCrone Associates by Grefco, Inc., on March 13th for determination of their crystalline free-silica content, were examined by x-ray diffraction and optical microscopy. We found that the free silica content of the perlite product 476 52R-2FA is virtually zero, that of the perlite ore labeled sample 1 is less than 0.05%.

The two samples were first examined by x-ray diffraction in a powder diffractometer and showed no evidence of any crystalline form of free silica. The limit of detecting crystalline free silica by this technique is 0.5%.

We examined further portions of the two samples on a polarizing optical microscope, classing any birefringent mineral grain as crystalline forms of free silica. Such a classification is likely to err on the pessimistic side in that most of the silicate minerals would be classed as free silica on this basis. The results of this examination showed, however, that the perlite ore contains less than 0.05% free silica; the few birefringent grains, in the sample of perlite product 476 52R-2FA are insufficient for any significant number to be assigned to the percentage of free silica present.

Respectfully submitted,

Ralph J. Hinch, Jr.

Ralph J. Hinch, Jr.
Research Chemist

13 April 1972

GREFCO, Inc. / 3435 West Lomita Boulevard · Torrance, California 90503 · Telephone: (213) 775-2781

August 10, 1972

Mr. J. J. Marino
Chief Engineer
Quigley Company, Inc.
235 E. 42nd Street
New York, N.Y. 10017

Dear Mr. Marino:

Regarding your inquiry concerning the quartz content of FS-Dicalite, tests run by George D. Clayton Associates of Southfield, Michigan, show that this product contains less than 1% quartz by weight.

Anytime you need any additional information, please feel free to call.

Sincerely,

R. B. Nielsen

RBN:wd

QUIGLEY CO., INC.
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J. J. MARINO
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George D. Clayton & Associates Division of Marlennan Management Systems, Inc.
25711 Southfield Road, Southfield, Michigan 48075 • Telephone: 313-352 3120

for better environment

July 12, 1972

RESEARCH & DEVELOP. DEPT.

JUL 14 1972

GREFCO, INC.

Mr. R. B. Nielsen
Research Chemist
GREFCO, INC.
3435 West Lomita Blvd.
Torrance, California 90503

Dear Mr. Nielsen:

The three samples which you submitted for quartz and cristobalite determinations have been analyzed by x-ray diffractometry. The results are as follows:

Lab. No.	Sample No.	Quartz, %	Cristobalite, %
30585	L-52 DL-5668 52R15-DF1	<1.0	66.9
30586	UF DL-6091 52R15-FA5	5.1	51.8
30587	"000" Ore 52R15-"000" A PD-137B	<1.0	1.3

We trust you will find this report helpful.

Very truly yours,

Fred I. Grunder

Fred I. Grunder
Assistant Director, Laboratory Services

FIG/sf