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TOMOE ENGINEERING COMPANY, LTD.

(ANNEX OFFICE)
SHIN SHIN KAIKAN BUILDING
14-1, NIHONBASHI 3-CHOME, CHUO-KU
TOKYO, JAPAN

MAIN OFFICE:
DAINI MARUZEN BUILDING
8-2, NIHONBASHI 3-CHOME, CHUO-KU
TOKYO, JAPAN

MAR 23 1973
UCC CALIDRIA
NIAGARA FALLS, N.Y.

CABLE ADDRESS: "EOMOT"
TELEX: 02223806 EOMOT TOK
TELEPHONE: TOKYO 274-0411

RECEIVED

JUL 24 1973

WM. C. THURBER

March 19, 1973

Mr. J. L. Myers
Marketing Manager
Union Carbide Corporation
Mining and Metals Division
P. O. Box 579
Niagara Falls, New York 14302

Subject: Calidria Asbestos Customer Call Report
Reference: Mr. J. L. Myers's Japan Visit

Dear Mr. Myers:

Thank you very much for all the guidance and most beneficial technical assistance during your recent trip to Japan on the subject matter.

We sincerely recognized the value of your recent trip, and all that we obtained from you will certainly be utilized for future sales promotion. On the other hand your visit we believe proved most beneficial to you to understand the Japanese market.

Upon briefly summarizing the customer calls the main subjects of discussions were as follows with the details on the attached call reports.

1. Patent problems
2. Related to RG-244
 - a. Boiling water problem
 - b. Gel coat and application
 - c. Improvements for delivery of RG-244 (D.I.C, Chiba Plant)
 - d. Designation of RG-244 lot number on same site of each bag
 - e. Treatment of RG-244-A-174 or 187
3. Toxicology
4. Domestic manufacture of T-135

UCC 008548

Mr. J. L. Myers

- 2 -

March 19, 1973

5. Identification of differential weight and lot number for each HPP bale.
6. Super Visbestos

Upon closing with sincere appreciation in doing such a wonderful job through that most arduous itinerary which we believe was even harder than in the States.

Closing with regards with hopes of meeting you in person again.

Yours very truly,

TOMOE ENGINEERING CO., LTD.



M. Kanno, Manager, Group II
Union Carbide Products Dept.

H.Fukuma/ma

Encls.

cc: Mr. F. S. Wada

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CABLE ADDRESS: "EOMOT"
TELEX: 02223808 EOMOT TOK
TELEPHONE: TOKYO 274-0411

Date of Call: February 21, 1973

Customer: Showa High Polymer Co., Takasaki Mill

Interviewed Person:

Mr. M. Nemoto, Chief of Manufacturing Section

Visited by:

Messrs. J. L. Myers - UCC
F. S. Wada - UCSEL
H. Fukuma - TEC
T. Mito - TEC

1. Problem of health hazards

By submitting "The safe use of Calidria RG-244" to them, we explained the safety in using RG-244 in order to remove their concern.

2. Mixing method

They are using a high speed mixer. We explained to them the mixing methods by Cowles, Sonolater and Vortex Mixer. We cautioned them against excess mixing which will cause SiO_2 coated onto RG-244 to come off and decrease thixotropic effect.

3. Water resistance

The property of water resistance was found poor by their test, as shown in the following test data.

Water absorption of polyester resin

Time (in boiling water)	8 hrs.	24	48	72
Aerosil 0.5% #4 41.8%	1.97	2.80	3.19	3.30
RG-244 0.5% #4 41.8%	2.29	4.15	3.68	2.20

Viscosity and T.I.

	0.5%(ST 42%)		1.25%(ST43%)		3.0%(ST49%)	
Thixotropic Agent	Aerosil	RG-244	A	244	A	244
Viscosity	3.9(poise/ 25°C)	3.3	8.0	7.4	17.0	48.0
Thixo Index	1.9	1.6	3.1	2.8	5.9	5.0
	Vis ↓	Ti ↓				
After 13 days passed	2.4	(1.0)	2.8(1.0)			
" 25 "					15.5(5.7)	44.0(4.3)
" 30 "			5.2(2.5)	5.4(1.4)		

4. Polyester resin formulation

a. resin: polyglycol (PG) 10%, phthalic acid (PA) 5%
maleic acid (MA) 5%, styrene (ST) noted above

b. catalyst: Not contained

5. Gelation condition

Gelation is carried out at room temperature with use of the catalyst (MEK PO 1%, cobalt naphthalene 0.5%)

6. Mixing method

at 2,000 rpm for 15 to 20 minutes

As indicated in the foregoing data, it is not possible to use RG-244 for gel coating, which requires high thixotropy, because viscosity increases too much, and this problem remains to be solved in the future, as well as improving water resistance.

We agreed to provide them with a sample of RG-244 treated with A-174 for their study for improving water resistance.

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CABLE ADDRESS: "EOMOT"
TELEX: 02223506 EOMOT TOK
TELEPHONE: TOKYO 274-0411

Date of Call: February 23, 1973

Customer: Mitsui Toatsu Chemicals, Ofuna Mill

Interviewed Persons:

Messrs. Y. Tashiro, Engineering Plastics Dept.
G. Kageyama, " " "
N. Chikauchi, " " "
K. Tanishita, Manufacturing Dept.
M. Ishiguro, General Affairs Dept.

Visited by:

Messrs. J. L. Myers - UCC
F. S. Wada - UCSEL
H. Fukuma - TEC
S. Sumioka - TEC
1 other

1. Poor result on boiling water test

Although A-174 was used as a coupling agent for RG-244, the test result was poorer than that of Aerosil, but better than that of RG-244 only. We think that the poor result was caused by the addition of only 1% by weight of A-174 and a better result will be obtained if the above ratio is increased to 2%.

They will use RG-244-A-174 if economies can be justified on the correlation between the purchasing price and consumption quantity. According to JIS specification, boiling and drying are carried out alternately for 8 hours each on a continuous basis for 12 cycles and at the end of each cycle the resistance is measured. On the other hand, however, the specification of this company calls for immersion in boiling water continuously for 15 days as requested by one of their big customers.

2. Market share in the U. S.

Cab-O-Sil	75%
RG-244 & Others	25%

3. PPG Industry

PPG, which has licensed Mitsui Toatsu to practice PPG's technology in Japan, has suspended the study of RG-244 from the point of view of industrial hygiene because of the dusting problem.

4. Dusting problem

According to Mr. Myers, it is unlikely that asbestos dust will cause any health hazards at the time of dumping and cracking, but UCC will evaluate the quantity of dust at the request of Mitsui Toatsu.

5. Selling price and supply situation

UCC will try to reduce the present selling price to a reasonable level. The supply capacity is satisfactorily sufficient.

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CABLE ADDRESS: "EOMOT"
TELEX: 0223808 EOMOT TOK
TELEPHONE: TOKYO 274-0411

Date of Call: February 23, 1973

Customer: Telnite Co.

Interviewed Persons:

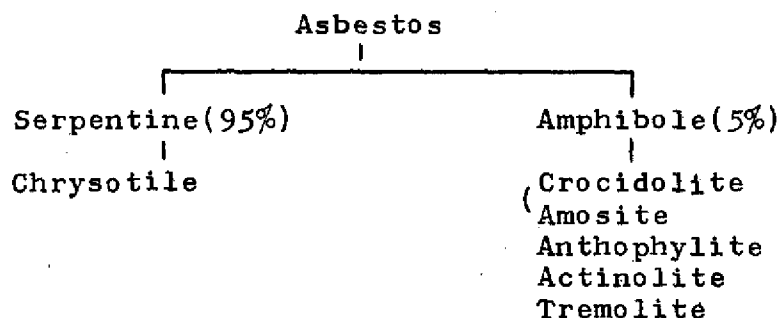
Messrs. B. Okino, Manager, Technical & Development Dept.
M. Sano, Depute Section Chief, Tech. Laboratory
I. Morimoto, General Affairs Dept.

Visited by:

Messrs. J. L. Myers - UCC
F. S. Wada - UCSEL
H. Fukuma - TEC
S. Sumioka - TEC

1. Various kinds of asbestos

Mr. Myers explained to them that asbestos is classified into 2 groups of Serpentine and Amphibole as shown below, and there are more than 3,000 applications of chrysotile asbestos.



2. Applications of Chrysotile asbestos in the U. S.

Asbestos Cement	500,000 tons/year
Floor Tile	150 - 200,000 "
Building Products	50 - 100,000 "
Drilling Mud	5,000 "
	(very small)

Total	Abt. 800,000 tons/year
	(Domestic Products 80,000 tons/year
	Imported Products 720,000 ")

3. Application for drilling mud in the U. S.

Bentnite had been used for drilling mud until 4 to 5 years ago. When Bentnite and asbestos are mixed on a fifty, fifty basis for drilling mud, the reology effect will be more than 10 times of the effect with Bentnite only. Furthermore, Bentnite is not usable in salt water, but asbestos is usable in fresh and salt water and the effect remains the same, and heat resistance of asbestos is better than that of Bentnite. Super Visbestos (UCC nomenclature is SG-200X) will be mini-pelletized from May this year.

4. Asbestos market in the U. S.

California Ore - [Union Carbide(wet process) → Montello Inc.(50%)
"Visbestos"
("Super Visbestos"
Johns → Manville → Drisco "Flosal" → Phillips
Atlas Corp. "Bascobestos"

5. Distribution route of Super Visbestos

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graph LR
    UCC --> Montello["Montello  
(exclusive)  
\"Super Visbestos\""]
    Montello --> Dresser
    Dresser --> Magcobar
    Dresser --> Tomoe
    Tomoe --> Telnite
    Telnite --> SuperVisbestos["\"Super Visbestos\""]
    Dresser --> Visquik["\"Visquik\""]
    Visquik --> Baroid
    Baroid --> IMC["I.M.C.  
\"Imcobestos\""]
    IMC --> UKE["U.K.  
North Sea"]
    Magcobar --> DrillingCo["Drilling Co."]
    DrillingCo --> OilCo["Oil Co."]
    IMC --> Lybia["Lybia  
Iran"]

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6. Dusting problem

Mr. Myers explained to them that Calidria asbestos is safe in many applications on a broad basis and UCC will publish its viewpoint of the safety in the use in April & May issues of "Oil & Gas Journal".

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CABLE ADDRESS: "EOMOT"
TELEX: 02223808 EOMOT TOK
TELEPHONE: TOKYO 274-0411

Date of Call: February 26, 1973

Customer: DIC, Sakai Plant

Interviewed Person:

Mr. N. Narisada, The 4th Technical Group

Visited by:

Messrs. J. L. Myers - UCC
F. S. Wada - UCSEL
H. Fukuma - TEC
T. Mito - TEC

RG-244 Toxicology:

Explained and provided information centralized on, "The Safe Use of Calidria RG-244". Subject company expressed desire that they wanted to take actual airborne measurements.

Received following questions on RG-244.

1. What is best method for adding RG-244 based upon master batch method?

Answer: In the States all deliveries are made in 10 pound bags and they are thrown-in as is. There is no company adding RG-244 under the master batch method.

2. Method of Distribution.

Answer: Explained distribution by methods of Cowels, Sonolator and Vortex mixer.

3. On boiling water resistance.

Answer: As they are not as critical in the States as in Japan, we have not received such complaints. Recommend RG-244-A-174 or 187 treatment. Delivered and requested test to be conducted RG-244 silane treated by Tomoe.

4. Bubbling Problem.

Answer: In case RG-244 is added to polyester resin, as compared to Aerosil since it is more transparent the bubbles can be seen more readily. In actuality as compared to Aerosil it does not mean that more bubbles exist. As the specific gravity is close to double that of Aerosil, in fact we believe less bubbles exist.

5. Spray Gun Plugging Problem.

Answer: Explained case history of;

Ronningen Petter	60 mesh
GAF Basket type	60 mesh
Cuno Auto-Clean	50 mesh
Cuno Mikro-Wynd II	350M (- 45 mesh)

6. Reference RG-244, glass fiber and polyester resin, if available desire to have data on impregnation.

Answer: As compared to Aerosil, RG-244 is better in impregnation, however, no data available.

7. Is RG-244 being used for gel coat in the States?

Answer: Some is being used, however, as use potential is small it is not being aggressively promoted in the States. The manufacturing process of the subject plant differs a bit from that of the Chiba Plant, but from a technical standpoint practically all problems have been solved.

It was stated that upon confirming the actual amount to be used at Chiba Plant decision will be made whether usable or not.

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CABLE ADDRESS: "EOMOT"
TELEX: 03223806 EOMOT TOK
TELEPHONE: TOKYO 274-0411

Date of Call: February 27, 1973

Customer: Eidai Sangyo Co., Ltd.

Interviewed Persons:

Messrs. S. Utsumi, Chief Engineer,
R&D Dept.
S. Yashima, Manager, License Section

Visited by:

Messrs. J. L. Myers - UCC
F. S. Wada - UCSEL
H. Fukuma - TEC
K. Oishi - TEC
T. Nunoi - TEC

A visit was made for discussing Daiken's Patent application with publication No. S42-1813.

Eidai Sangyo will file the opposition to the above patent application by utilizing the materials published by A. W. Naumann and R. G. Woolery in Tappi.

Eidai will also study and use the materials provided by Mr. Myers immediately as a useful reference.

However, as HPP is termed as colloidal asbestos in UCC's catalog, Eidai is of the opinion that they will not use HPP until they win the case, but told us that they would keep using HPP as in the past if UCC agrees to take consequences in case the opposition does not succeed.

Since Mr. Myers informed them that it is not possible for UCC to accept Eidai's proposition, it seems that they will replace HPP with Zetabestos hereafter because it is not termed as colloidal asbestos.

Mr. Myers also informed them that UCC has no objection from the standpoint of cooperation to Eidai's contact directly with attorney Abe of Kurauchi Law Office which represents UCC in the opposition case.

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TOKYO, JAPAN

CABLE ADDRESS: "EOMOT"
TELEX: 02233506 EOMOT TOK
TELEPHONE: TOKYO 274-0411

Date of Call: February 28, 1973

Customer: DIC, Chiba Plant

Interviewed Persons:

Messrs. T. Hirahashi, Assistant Manager,
4th Technical Group,
Resin Division
T. Kayano, 4th Technical Group
K. Tode, Manufacturing Division

Visited by:

Messrs. J. L. Myers - UCC
F. S. Wada - UCSEL
H. Fukuma - TEC
S. Sumioka - TEC
T. Mito - TEC

Formally decided that RG-244 will be used for general purpose polyester resin, however, the following problems still remain.

Method of supply:

The subject plant will use 300 to 400 kgs of RG-244 per batch, (30 to 40 tons in resin amount) but as the addition of RG-244 will actually take place late at night, and as result there are problems related to labor, dust, and as the individual batch to be scaled up for the future they expressed desire that the material be supplied in 80 kg bags. Furthermore, future shipments for the future is desired in containers. To cope with their request we have for the time being concurred in having the bags repacked in 80 kg bags for ultimate delivery. UCC is to also study this matter for supplying the DIC, Chiba Plant.

RG-244 Toxicology:

Explained and provided them information emphasizing, "The Safe Use of Calidria RG-244". We are to make a translation of the English original.

Subject plant has requested bags to be supplied in containers to eliminate the dust problem.

Disadvantages of RG-244:

1. In case of adding RG-244 to polyester for gel coat use, as compared to Aerosil the boiling water resistance is poorer. However, at this plant since such use is trivial they will continue to use Aerosil as in the past.
2. RG-244 as compared to Aerosil is in fibrous state so with a 100 mesh screen plugging occurs. For this problem recommended the use of Ronningen Petter 60 mesh, GAF Basket type 60 mesh, Cuno Auto-Clean 50 mesh, or Cuno Mikro-Wynd II 45 mesh.

Questions:

Is it possible to add RG-244 to styrene and then add this to the polyester resin? Subject plant upon testing with Sylodex the T.I. did not come out. Furthermore, under the master batch method have you ever studied adding RG-244?

Sylodex:

Sylodex was successfully locally produced by Fuji Davidson Company but is not being sent to Europe. Sylodex is a 30 percent blend of asbestos against the Silica(SiO_2). What Mr. Myers received was SX-2500.