

*Legal Copy*

Dr. W. B. Ackart  
Union Carbide Plastics Company  
River Road  
Bound Brook, New Jersey

August 6, 1959

Dr. C. C. Cooper/  
Mr. W. B. Tibbets  
Mr. T. A. DeVilbiss  
Mr. F. D. Dexter  
Dr. A. W. Downes  
Mr. J. J. Olick  
Mr. G. T. Scriba  
Dr. H. P. Smyth, Jr.

VBA-3027  
Plastic Oral Thermometer

Dear Dr. Ackart:

We have no actual data on the weight of the rigid vinyl film in the oral thermometer but believe it would be very little. You state that a residual solvent (75% methyl ethyl ketone and 25% toluene) would amount to around 5 to 7% of the film weight. This residual solvent is believed to be primarily toluene.

Toluene is a material of relatively low oral toxicity. Our laboratories found it to have an LD<sub>50</sub> dosage of 7.53 grams per kilogram body weight for the rat. In the customary use of an oral thermometer, the toluene would extract very slowly from the film.

I do not think that it would be hazardous to utilize VBA-3027 in the manufacture of oral thermometers; this should be a safe application.

Very truly yours,

MEDICAL DIRECTOR

Thomas W. Hale, M. D.  
jl

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INTERNAL CORRESPONDENCE

BAKELITE COMPANY • DIVISION OF



CORPORATION

RIVER ROAD, BOUND BROOK, N. J.

To (Name) Dr. T. W. Nale  
Company Union Carbide Plastics Co.  
Location New York, New York

Date August 5, 1959

Originating Dept. Development

Answering letter date

Copy to

Dr. C. C. Cooper/  
Mr. W. B. Tibbets - BB  
Mr. T. A. DeVilbiss - BB  
Mr. F. D. Dexter - BB  
Dr. A. W. Downes - Rm. 1103  
Mr. J. J. Glick - 30 E.  
Mr. G. T. Scriba - Rm. 1901  
Dr. H. F. Smyth, Jr. - Mellon

Subject

Taylor Instrument Company has developed a plastic oral thermometer based upon VBA-3027 which is described in the attached Report of Call by H. R. Melin. VBA-3027 is an unplasticized cast vinyl and we have a letter of no objection for foods from Dr. Lehman. The formulation consists of VYNS 98% and G-62, 2%. However the film is cast from a solvent mixture of 75% methyl-ethyl ketone and 25% toluene. Residual solvent varies from 5 to 7% in the 5 mil. film to be used and this is believed to be primarily toluene. The fabrication process utilizes heat and pressure and we anticipate further solvent loss.

We would appreciate comments from you and/or Dr. Smyth concerning the safety of this application.

*W.B. Ackart*

W. B. Ackart

WBA/bk

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INDUSTRIAL MEDICINE &  
HYGIENE DEPARTMENT

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Salesman

BAKELITE COMPANY  
REPORT OF CALL

DIVISION  
No.

Region  
3

NAME Taylor Instrument Company  
95 Ames Street  
ADDRESS Rochester, New York

INTERVIEWED (NAME TITLE) Mr. Richard Melville

BY H. R. Melin

DATE OF CALL 7/9/59

LAST CALL \_\_\_\_\_

CONFIDENTIAL \_\_\_\_\_

MAN ES IN PERSONNEL \_\_\_\_\_

SALES BULLETIN \_\_\_\_\_

Mr. R. C. Boyd, BB  
Mr. H. L. Forst, Clv

Mr. J. W. McLaughlin, NY  
Mr. A. R. Bullman, BB  
Mr. T. A. Devilbiss, BB  
Mr. W. C. Quinby, MI

For several years this company has been working on the development of an oral thermometer fabricated from plastic film. In the fabrication of this thermometer, a piece of plastic film is pressure formed with several small capsules. These capsules are then filled with a fatty acid, each melting at a very specific temperature. Over the top of the formed film, another piece of the same film is dielectrically sealed. Many months ago samples of our VBA-3300 Natural .003" were checked, but it was not possible to obtain a good dielectric seal. A short time ago this problem was reviewed, and it was suggested that a sample of our .005" rigid cast film be evaluated since thickness was an important factor in dielectric sealing. Samples of our VBA-3027 Nt in thickness of .005" were submitted and these have been pressure formed with excellent results, and initial dielectric sealing tests have been satisfactory. This fabrication work is being done for subject by Flaxall. We believe that the increased thickness has contributed to the good dielectric sealing, but also important is the fact that the frequency on the dielectric machine has been increased from 27 megacycles to somewhere in the vicinity of 60 megacycles. At this point, Mr. Melville is quite encouraged about the possibility of using our rigid cast film in this application. Previously a Genotherm UC-220 was the only film that looked as though it might do a satisfactory job.

Our VBA-3027 is an FDA approved material, but my concern at the moment is whether or not the residual solvent in this film might cause complications as far as FDA approval is concerned.

NOTE: MR. T. A. DEVLBISS

75-252 mix MEK-Toluene is std solvent mix.

Al Bullman informed me that our VBA-3027 in a thickness of .005" has a residual solvent up to 7%. Could it be determined whether or not this would be sufficient to cause rejection by FDA.

Mr. Bullman has also suggested the use of our VCAB-3605 Nt for this same application. This latter compound has not yet been made in a 5 mil thickness and when this is available samples will be provided to Mr. Melville for evaluation.

This application still looks very promising, and, according to Mr. Melville, their sales department is just as enthusiastic as ever.

ERN/rm

Encl. 3/4/60

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