

SHELL CHEMICAL COMPANY

733.12100

PRIVATE & CONFIDENTIAL

DATE SEPTEMBER 9, 1963

TO MARKETING - MANAGER -
PLASTICS AND RESINS DIVISIONFROM PRODUCT MANAGER - RESINS
PLASTICS AND RESINS DIVISION

PLAINTIFF'S EXHIBIT

SH-1002

SUBJECT PRODUCT RESINS SUMMARY
AUGUST 1963HIGHWAY APPLICATIONS

Following is the status of the major GUARDKOTE® 140 contracts to be completed this year:

San Francisco Bay Bridge (500,000 pounds GUARDKOTE) -
Paving scheduled to begin September 5.

Mystic River Bridge, Boston (250,000 pounds GUARDKOTE) -
Paving scheduled to begin week of September 14.

Passaic River Bridge, New Jersey Turnpike (130,000 pounds GUARDKOTE 140) -
Paving scheduled to begin week of September 14.

Intercity Viaduct, Missouri (70,000 pounds GUARDKOTE 140) -
Contract awarded, starting date not set.

Intercity Viaduct and two other bridges in Kansas (160,000 pounds
GUARDKOTE) -
Contract proposal published, awarding scheduled middle of September.

BUILDING AND CONSTRUCTION ACTIVITIES

Attempts to interest Pittsburgh Corning Corporation in EPON Adhesive 936 for glass block construction proved futile. However, the discussions did bring out the fact that the research department of this firm is in the process of developing a new glass building product which does require a resinous binder. Since long term retention of bond strength to glass and water resistance are prime requirements, an EPON resin based binder may be feasible depending on the economics. A polyvinyl acetate based binder is evidently receiving the most attention. Pittsburgh Corning has agreed to tell us more of this development in approximately four weeks when their patent situation should be clarified.

American Olean Tile Company and Tozzini Tile Company (a major ceramic tile contractor) see no hope for usage of epoxy resin compounds in panelization of quarry tiles for flooring applications. Tozzini Tile is, however, currently involved in using 52M pounds of epoxy resin based grout in conventional quarry tile flooring work at the Naval Academy in Annapolis. The epoxy grout (based on Shell resin) is being used in the galley, scullery, shower and locker rooms. Since this represents one of the largest jobs to date with epoxy grouts and since an obvious publicity story could be developed, we initiated a Jones-Brakeley and Rockwell end use story to cover this job.

LAM 028935

ABS-018141

Hercules specifications on EPON 826 and EPON 828. Once HXS 5-2A is finalized future purchases will be made against this single specification; thus, reducing the certification requirements. In addition, work is under way at UTSL to qualify EPON 826 under MIL-R-21931 for use by Hercules in the Polaris program.

For some time we have been faced with foaming problems on EPON 828 which occurs during the cure cycle when vacuum is applied to the system. Low foaming under these conditions was reported by users of Carbide's ERL2400. In analyzing a sample of this material, it was found to contain a fatty acid. Samples of our EPON 828 containing 20 ppm of Baker's Fatty Acid 911 were found to have reduced foaming tendency during the cure of the resin. We are supplying Epoxylite a sample of this material for their evaluation and we will be interested in their results since this is our first indication of success in reducing foaming of some lots of EPON 828. The use of the conventional anti-foaming agents in ppm concentrations causes the resin to be turbid, but the use of the above fatty acid resulted in a clear material.

We received word from Houdry Process and Chemical Company that they are willing to continue a limited market development program for 2-ethyl-4-methylimidazole. They will provide up to 500 lbs. of product for sampling and studies at UTSL. Should sales develop during this year, they feel the price of \$13.50 to \$15.00 per lb. should be obtained for quantities larger than sample size. The ultimate price of \$3.50/lb. in drum/TL still stands if and when commercial production is started.

ADHESIVES

Marketing

Sales for the period April/May/June were below the levels experienced during the first quarter 1962; taking the period January-June as a whole, sales are running at an annual rate of 1.0-1.1 million dollars. Our three biggest customers have been Aerojet, Boeing and Hercules. Leading products have been Adhesives 901 and 927 and our most rapidly growing product has been Adhesive 934. Sales of Adhesives VI and VIII continue to decline.

We have lost our position at General Dynamics with Adhesive 37-26 to a competitor; we have also lost out to a competitor as supplier of high temperature adhesive to the F-111 program.

Production

Production for the second quarter totalled 47,843 lbs. Our major quality control problem has still been the fall-off in performance of Adhesive VI at elevated temperatures.

Installation of our new equipment for 422 manufacture has been completed and although there are a few minor adjustments needed, our production runs have shown every promise of success.

LAM 028936

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Installation of our film casting machine has been completed but numerous small projects remain to be completed before the process will be operated.

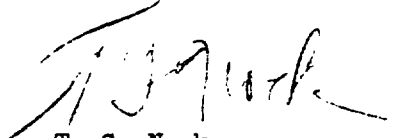
Problems relating to the use of Cabo-o-sil to impart thixotropy still remain to be solved in connection with Adhesives 919 and 923.

Product specification work has been carried out on the 937-939 series adhesives for Hercules, on Adhesive 911 for a proposed customer specification and in URX series of products for sale as TV tube adhesives.

Development

Our development work has remained concentrated upon the formulation of a suitable tack coat for our epoxy/nylon tape adhesive and the formulation of a satisfactory tape for use on the F-111. We have had little success in producing a room-temperature tack primer; we have obtained promising results with respect to a heat tack primer. We have had no success with the tape for the F-111.

We have made some progress in improving the salt spray resistance of Adhesive 940.


T. G. Nock
SC NY

FJP:em

cc: Sales Manager - P&R Division
Operations Manager - P&R Division
Process & Product Development Manager - P&R Division (2)
Marketing Services Supv. - P&R Division
UTSL - Resins Department - Manager (2)
Adhesives Supervisor - Shell Point (3)

cc: T. F. Muka, S. J. Emery

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