

SHELL CHEMICAL CORPORATION

PLAINTIFF'S EXHIBIT

SH-1055

77021

January 3, 1954

McCULLOCH MOTORS COMPANY
6101 W. Century Boulevard
Los Angeles 45, California

Attention: Mr. F. G. Firth

Dear George:

In accordance with the request made during our recent visit to your plant, we are pleased to arrange for the shipment of a one-pint sample of EPOCH Adhesive VIII containing dicyandiamide as curing agent, and one pint each of EPOCH Adhesive VI and Adhesive VIII supplied with Curing Agent A. The use and properties of the two latter materials are described in our data sheets, SC:52-45R and SC:52-46, which are enclosed. They are available in accordance with our price schedule enclosed. EPOCH Adhesive VIII containing dicyandiamide, which we plan to designate in the future as EPOCH Adhesive IX, is at present in the experimental stage. We have recently been advised that it will be priced at \$3.75 per pound.

EPOCH Adhesive IX offers several advantages over the normal EPOCH adhesives with respect to pot life and applications. First, it contains the curing agent already mixed in and therefore does not require measuring and mixing at time of use. This curing agent (dicyandiamide) is very stable and the mixture can be stored for a long period (12 months or more) without deterioration.

To apply this adhesive, it is merely necessary to spread the material on the properly prepared parts to be bonded to approximately 0.005" thickness. After assembly, using merely contact pressure and sufficient clamping to hold the parts in contact and prevent their movement during cure, the bond should be cured for 90 minutes at 345-350°F. Lower temperatures of cure may be used, with proper increasing cure times. The lowest practical cure temperature is believed to be about 300°F, which would require about 12-16 hours for complete cure.

While our laboratory evaluations of this adhesive have not been as complete as in the case of the normal cure with Curing Agent A, several batches have been tested over a range of temperatures and the following tabulation represents typical results obtained with 24ST aluminum .064" thick, with 1/2" overlap, made in accordance with Military Specification for metal-to-metal adhesives:

SHELL DEVELOPMENT CO.	
REC'D JAN 7 1954	269
FILE 3	
ADVIS	
TO HANDLE:	
ANS'D:	BY:

LAM 029082

ABS-018290

January 5, 1954

Tensile shear at	1000	1000 psi
	1000	1000
	1000	1000
	1000	1000
	1000	1000
	1000	1000

After one hour, boiled in
water, tested at 7100 1100

In view of the experimental status of this material, we should appreciate any information you can give us which might indicate your future interest in this type of adhesive, as well as in our Adhesives VI and VIII.

Best personal regards.

Very truly yours,
ORIGINAL SIGNED BY J. L. MORRILL

John L. Morrill
Chemical Products Department
SC 5F

Encls.

cc: Los Angeles District-Manager
Shell Development Company THIS COPY FOR

LAM 029083

ABS-018291