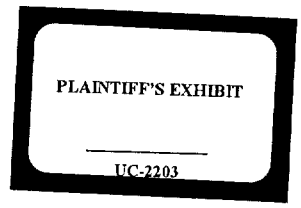
Union Carbide Corporation
Metals Division
Niagara Falls, NY 14302
March 23, 1976



MEMORANDUM



To: G. L. Dickson

From: B. L. Ingalls

Copies: R. E. Byrne, Jr.
F. H. Larrison
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File

Subject: Parr Inc. and Rapid System Co. - Investigation of Corrosive Properties Attributed to HPO in Metal Substrate Applications.

The purpose of this memorandum is to update the status of our investigations pertaining to the above subject. During the period of Sept.-Oct. 1975, Parr Inc. and Rapid Systems Co., both located in the Ohio area, reported corrosion problems attributed to the use of HPO.

Rapid Systems Co. has since concluded that the problem is not as serious as originally thought and unrelated to the use of HPO. Parr Inc., on the other hand, has provided evidence that strongly supports their claim that HPO promotes corrosion. Some work was subsequently performed in our laboratory which substantiated Parr's findings (Tech. Service Report, B. L. Ingalls, Dec. 5, 1975). It was concluded that HPO promoted corrosion or some similar action to a greater degree than other chrysotile materials evaluated (Carey 7RF-9 and 7TF-8 California Floral).

More recent tests have failed to show any evidence of corrosion by HPO over periods ranging between 20 and 36 days. Previous tests exhibited rusting within one to two weeks. Possible variations in humidity between the periods the two tests were run is suspect, but unsubstantiated. Moisture content of the HPO samples was recently determined to be ~2 % or less, whereas samples of Carey 7RF-9, 7TF-8 and California Flosal showed moistures of $\leq$1%.

Spectrographic analyses showed no irregularities in the percent major or minor elements of HPO. However, small quantities of sulfur ($\leq$0.062%), acetic acid ($\leq$0.22%) and trace amounts of chloride were detected in both HPO, California Flosal, and the Carey products.

The principle difference between "Calidria" asbestos and other short fiber chrysotile products is their method of processing. Conventional chrysotile materials are processed dry, whereas HPO is produced by aqueous beneficiation. It is theorized that acid salts naturally occuring or introduced via plant water are concentrated during the drying process on the surface of the asbestos fibers.

Union Carbide trial exhibit UC-2203: B. L. Ingalls to G. L. Dickson on Corrosion Attributed to HPO Calidria Asbestos... Published by AsbestosClaims.Law
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And, in the presence of sufficient absorbed water these salts promote oxidation or a galvanometric action. The exact nature of the mechanism involved and level of absolute humidity at which it occurs remains to be determined.

At this point in time, a practical resolution of the problem, particularly with regards to Parr Inc., appears remote. Current data indicates that the source of the problem is not a recent isolated case of contamination, but rather generic to our process. Since we are still in the process of generating data, a formal report including our findings in toto will be issued upon completion of the tests.

B. L. Ingalls

BLI:dal

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