

FRICITION MATERIALS STANDARDS INSTITUTE, INC.

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August 31, 1981

Mr. B. J. Pigg
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Subject: Comments on Report for EPA by GCA on "Asbestos Substitute Performance Analysis" (May 1981)

Dear Bob:

On July 10, 1981 you circulated a copy of GCA Corporation's Report "Asbestos Substitute Performance Analysis." You asked for comments by August 20, 1981, but I trust you will accept these comments despite the target date. I'm sure you understand it takes a while longer to consolidate comments when an association is the writer.

We will address those sections of the report pertaining to "Friction Materials" only. That would be Section 3, Friction Materials, Pages 67 to 102, and the comments on "Friction Materials" in Section 12. Our comments are referenced by Page Number.

It must be pointed out that throughout the report on friction materials, the author refers to disk brakes or pads. The correct word is disc, and the use of "disk" suggests an author unfamiliar with the subject on which he is reporting.

Page 68 Under binders, the word "resole" is used. We believe the author intended cresol or creosol. "cardanal" should be "Cardanol."

Page 69 Table 12 indicates no resin or low resin content, whereas on page 70 the report states: "Organic linings, which must bend, require high resin contents..." The table figures are not correct.

Page 70 Under "Uses and Applications," the following are listed, among others: Bicycles, tape recorders, typewriters, and business machines. As this report is supposed to be directed at applications for "asbestos substitutes," and the friction materials used in these applications are not the typical asbestos bearing materials with which EPA is concerned, these applications are not relevant--they don't use asbestos type friction materials.

Page 72 Table 14 is entitled "Uses of Asbestos-Containing Friction Materials." This particular table was earlier used by another EPA contractor, the Public Media Center, in their work on educational programs. While there have been slight changes in the table, we will repeat our earlier comments:

The table on uses of asbestos-containing friction materials is confusing: The use of the word primary drum brake linings and secondary drum brake linings as separate products is confusing. Primary and Secondary is a long accepted classification on linings in a particular type of drum brake--the servo brake. The primary and the Secondary segment are both in the same brake. The primary essentially actuates the secondary and both linings are exposed to the same environment--that is temperature. And since they are in the same brake, they fit the same applications. And further, with the new downsized American cars, and in just about all imports, the servo brake is declining in usage. The product classification is clumsy. We suggest that the listing have one product--Drum brake linings to replace the two. The characteristics and applications would be as shown for the "Primary drum brake linings," but we question the necessity for including "minor railcar." Further down, we question the Product "Class C blocks." Common terminology is "Brake Blocks." Under characteristics, it should say minimal "fade" rather than "face."

Page 74 There are some small errors in Table 15 which might better be corrected by the individual manufacturer. For example, Auto Friction Corporation is the same company as P. T. Brake Lining Company. The table states that Thiokol manufactures "Rebuilt only." Thiokol manufactures friction materials for the original equipment market as well as for the replacement market. Missing from the list are: Guardian Corporation, H. Krasne Mfg. Co., U. S. Automotive Manufacturing and Virginia Friction Products. We were not aware that MGM Brakes and Eaton Corporation were manufacturers of asbestos bearing friction materials.

Page 91 This report again goes into aircraft brakes and cermets. As the report is ostensibly a study on "Asbestos Substitutes," and cermets replaced asbestos type friction products in aircraft brakes over a quarter of a century ago, it is difficult to understand how this relates to asbestos substitutes at this time. The use of cermets and full sintered metallics in aircraft brakes is a technological accomplishment that is complete--having started in the 1940's. While continued reference to these types helps fill up pages in a report, the cermets are unlikely candidates for replacing asbestos type friction materials in on-highway brakes or small clutch facings.

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- Page 93 Table 23 lists "nonasbestos brake manufacturers." We question including American Filler and Abrasives and E. I. DuPont in that table. While these two companies may offer materials which they claim will work in non-asbestos brakes, they are not either brake or brake lining manufacturers. They are materials manufacturers. It may be that with the many claims by companies such as DuPont for their aramid fibers (Kevlar) that they have over-promoted themselves to the point where the contractor now believes they are "nonasbestos brake manufacturers."
- Page 94 Page 94 again gives considerable space to Kevlar, undoubtedly based on DuPont's claims and promotional efforts for this fiber. It appears that the contractor is giving more weight to the supplier's claims for this product than it deserves, and the materials quietly being used by the friction materials manufacturers--who consider materials information proprietary--are underplayed.
- Page 96 The paragraph in the "Conclusion" information correctly states that the nonasbestos product for drum brake linings for passenger cars is still in the development state. As the report has indicated, this development will take additional research. It is not a project that will necessarily be accomplished by the regulatory path. We again suggest that cermets are not likely candidates in the automotive brake field. Their usage may grow in the heavy duty clutch field, but not in the passenger car and light truck field.

In summary, our comments are along these lines. We do not feel the cermets, as used on aircraft brakes, are practical candidates for replacing asbestos type friction materials for on-highway use. We believe the claims of some materials suppliers are given far too much weight in the contractor's report, whereas most development work on substitute materials is proprietary in nature. The manufacturer who is successful in developing non-asbestos substitutes is not going to freely tell his competition how it was done. While we feel the report correctly indicated the difficulties in developing nonasbestos drum brake linings, the conclusion inferred that this too would be accomplished in the not-to-distant future. This development, if indeed it is necessary or economically justified, will not be simple, particularly if consideration is given to the replacement market for this type lining.

Sincerely,

FRICTION MATERIALS STANDARDS INSTITUTE

EWD/erc

E. W. Drislane
Executive Director