



Inter Office

Transmission and Chassis Division  
General Office

September 7, 1983

To: Safety Engineers  
Plant Engineering Managers

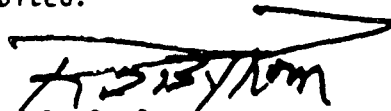
cc: Mr. R. L. Smith  
Mr. R. Wabeke

Subject: Asbestos Identification Test Kit Judged Inadequate

The attached sales promotion literature describes a test kit being marketed by the E-C Appartus Corporation for screening sample materials for possible presence of asbestos.

The procedure and principals of analysis provided by the kit has been discredited - lab experience has verified that its use would give false, negative readings.

Use of the subject test kit is prohibited.

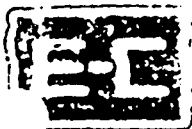
  
R. D. Byrom

Attachment

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PRODUCED BY FORD



# E-C APPARATUS CORPORATION

3831 Tyrone Boulevard N. • St. Petersburg, Florida 33709 • Telephone 813-344-1644  
Telex 51-4736 HALA

*Would give money  
false-negative-  
readings.*

Thank you for your inquiry regarding the ASBESTEST™ kit for elemental chemical analysis of asbestosis containing materials.

The enclosed instructions detail the use of the kit.

Each kit is shipped in two parts (required by transportation regulations) and is complete...NOTHING ELSE TO BUY.

The 55 test kit is priced at \$110 F.O.B. St. Petersburg, Florida with shipping charges prepaid and added to the invoice to approved credit customers. Otherwise the kits are shipped C.O.D. including freight charges. For prepayment consideration the kits are shipped at our expense.

We have been providing quality products to the Medical Research Laboratory since 1952 and look forward to receiving your order/check for our kit. Order simply as ASBESTEST kit.

Sincerely,

E-C APPARATUS CORPORATION

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PACKAGE INSERT  
INSTRUCTIONS

# Asbestest™

Test Kit for Screening Sample Materials for Possible Presence of Asbestos

## 1. INTRODUCTION

The EC Asbestest™ procedure is a colormetric qualitative test for the detection of magnesium and iron from asbestos in bulk samples. Results may be saved in the reaction tube for future reference. The test uses a small sample, about 1/4 inch in diameter by no more than 1/8 inch thick, which is processed using a step-by-step procedure. No special training or other equipment is necessary to produce results.

## 2. HISTORY

Asbestos has been known to exist for several millennia and the word asbestos evolves from a Greek word meaning inextinguishable or incombustible. Only in the last 100 years, however, has the material come into wide usage. It is mined chiefly in Canada, Russia and South Africa.

The material has been used widely for electrical and thermal insulation, mainly in six forms of various composition throughout the world. Ninety percent (90%) of the existing asbestos is in the form of chrysotile which is an iron free form of asbestos that contains only magnesium.

In the 1880's health hazards and related deaths were noted in workers in France and England in plants where airborne asbestos fiber was prevalent. The first complete description of asbestosis was in 1927. This is a disease resulting from breathing small particles of asbestos dust which forms scar tissue in the lung that causes breathlessness after prolonged exposure. Lung cancer and mesothelioma are also diseases associated with exposure to asbestos dust.

Although it is the airborne asbestos that creates the health hazard, the presence of solid asbestos can be potentially airborne by mechanical or pneumatic disruption.

## 3. INTENDED USES

This kit is intended to be used for wet chemical analysis of bound magnesium and bound iron which is found in asbestos and asbestos containing materials. In certain forms of asbestos only magnesium is present and in other forms only iron is present, while in several forms both are present. The sample is first treated to wash away unwanted and interfering substances and then the magnesium and/or iron is released from the sample by chemical treatment and an appropriate color reagent is added which turns a specific color.

## 4. SUMMARY AND EXPLANATION OF THE TEST

The identification of asbestos in solid materials is the first step in identifying a potential airborne asbestos problem. Various techniques can be used to identify asbestos and these include optical microscopy, electron optical microscopy, X-ray refractometry, infra-red spectrophotometry, thermal analysis, and elemental analysis. The basis of the Asbestest™ is elemental analysis but, because it is a screening technique which might have some interferences, positive samples should be confirmed by other techniques.

The six different types of asbestos in descending order of usage (90% of world consumption is chrysotile type) are as follows:

1. Chrysotile ( $\text{MgO} \cdot 2\text{SiO}_2 \cdot 2\text{H}_2\text{O}$ )
2. Amosite  $[(\text{FeMg})\text{SiO}_3]$
3. Crocidolite  $[(\text{NaFe}(\text{SiO}_3)_2 \cdot \text{FeSiO}_3 \cdot \text{H}_2\text{O})]$
4. Anthophyllite  $(\text{MgFe})_2\text{Si}_2\text{O}_7(\text{OH})_2$
5. Tremolite  $[\text{Ca}_2\text{Mg}_5\text{Si}_8\text{O}_{22}(\text{OH})_2]$
6. Actinolite  $[\text{CaO} \cdot 3(\text{MgFe})\text{O} \cdot 4\text{SiO}_2]$

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