

ETHYL CORPORATION

INTER-OFFICE



To: DISTRIBUTION

Address:

From: R. L. Pastorek

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Subject: Gaskets and Packing - Asbestos-Free Materials

Date: May 8, 1987

In view of the new OSHA regulations on handling asbestos, the Engineering Department is recommending that asbestos materials no longer be installed in our facilities. Accordingly, Ethyl standards and specifications will be revised to delete all asbestos materials. The major impact will be in our piping specifications in which asbestos flange gaskets and valve stem packing have been specified and have provided excellent service over a wide range of conditions for many years.

RELATIVE PRICES

The following costs are averages of prices obtained from several Baton Rouge area vendors for a 2" 150 lb flange gasket of various materials. They give an idea of the cost impact of converting to asbestos-free gaskets:

<u>Gasket</u>	<u>Cost \$</u>
1/16" Asbestos/SBR binder	.25
<u>Asbestos-Free</u>	
1/16" Garlock Blue-Gard 3200, Aramid fiber/SBR binder	.65
1/16" Garlock Blue-Gard 3700, Aramid fiber/EPDM binder	.95
1/16" Garlock Gylon 3504	3.25
1/16" Grafoil (flexible graphite)	2.50
1/16" Grafoil, metal inserted	3.00
Spiral wound, 304 SS/asbestos	1.50
Spiral wound, 304 SS/Graphited mica	1.50
Spiral wound, 304 SS/Grafoil	2.35
Spiral wound, 304 SS/TFE	2.60

Experience in areas where the transition has been accomplished indicate that the cost differential between asbestos and non-asbestos gaskets will narrow and the costs for the non-asbestos materials will be reduced as usage increases and asbestos becomes less available. Sauget presently finds non-asbestos gaskets are obtained at a cost penalty of 1.8 x asbestos.

Most of our usage is in the 150 lb and 300 lb classes where the Garlock Blue-Gard 3200, which is reasonably priced, can be used. In the 400 lb through 1500 lb classes we use ring joint gaskets so there will be no change.

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RECOMMENDATIONS

FLANGE GASKETS

The following proposed specifications for an asbestos-free gasket and packing program are based on experience and recommendations of Ethyl Plant personnel, other chemical companies and gasket and packing manufacturers:

<u>Ethyl Piping Class</u>	<u>Gaskets</u>
Classes 124, 125, 126, Utilities	1/16" Garlock 3200.
Classes 151 and 301, Ordinary Chemicals	1/16" Garlock 3200 to 500°F 1/16" Grafoil above 500°F.
Classes 152 and 302, Chlorine	1/16" Garlock 3200.
Classes 154 and 304, Flammables and Toxics	1/16" Grafoil, or spiral wound with 304 SS/graphited mica.
Class 156, Heat Transfer Fluids	1/16" Grafoil, or spiral wound with 304 SS/Grafoil.
Class 157, Sour Gas	1/16" Garlock 3700.
Series 140 and 340, Low Temperature Service	Garlock Gylon 3504.
Series 160 and 170, Plastic and plastic lined steel	Rubber and TFE envelopes with non-asbestos filler at present.
Series 180, 190, 380 and 390, Stainless and higher alloys	Same as Classes 151 and 301.
Class 305, Steam	Garlock 3200 to 250 psig. Spiral wound with 304 SS/graphited mica above 250 psig.
Class 306, Heat Transfer Fluids	Spiral wound with 304 SS/Grafoil.
Series 400, 600, 900 and 1500	Essentially all ring joint (at present). For raised face Class 602, spiral wound with 304 SS/Grafoil.

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In selecting the above gaskets an effort was made to minimize the number of different materials that will be required for stores. As a further reduction, the 304 SS/graphited mica spiral wound gasket could be eliminated and only the 304 SS/Grafoil stocked, although at a higher unit cost.

Selection of the Garlock 3200 off-white, Garlock 3700 gray and Gylon 3504 blue will enable identification of the sheet gaskets by color.

VALVE STEM PACKING

Most gate and globe valve manufacturers have switched from asbestos to flexible graphite stem packing and are supplying spiral wound 304 SS/Grafoil bonnet gaskets. Teflon is the typical ball valve and plug valve stem seal or packing except for fire-safe valves which normally have graphite stem packing. Because of the competitive nature of the valve business, manufacturers have, for the most part, absorbed the incremental cost of the non-asbestos packing and gasket materials. No significant cost impact is anticipated for eliminating asbestos from valves specifications.

A general note will be added to all Ethyl piping classes specifying that stem packing and body and bonnet gaskets will be flexible graphite or Teflon.

Ethyl Plant Engineering, Maintenance and Purchasing personal are requested to comment on the above recommendations by June 1. After all comments are reviewed and resolved, Ethyl piping Specifications will be revised and issued. Comments and recommendations based on future experience will, as always, be welcomed.


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