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September 22, 1977

Mr. N. Sankar
Managing Director
Chemicals and Plastics India Ltd.
P.O. Box 2748
Madras 600002, India

Dear Sankar:

In 1974, BFGoodrich became aware that three of its employees had died from a rare form of liver cancer, Angiosarcoma. This was the first known link between Vinyl Chloride and human cancer. With this beginning, BFGoodrich began an intensive program to reduce Vinyl Chloride exposure of its employees. The sequence of events from the discovery in 1974 to the present is given in the attached booklet "Vinyl Chloride and Cancer - A Study in Prevention", an official publication of the BFGoodrich Company. Additional copies are also provided.

BFGoodrich has devoted a tremendous amount of money and manpower to develop methods to contain Vinyl Chloride and thereby reduce employee exposure in the workplace. In October 1974, BFGoodrich announced that it would spend U.S.\$ 42 million over a three year period to meet these objectives. New technology and polymerization process changes resulted which have made it possible for BFGoodrich to meet the Occupational Safety and Health Act (OSHA) Standard and the Environmental Protection Agency (EPA Standard). Both of these standards set legal limits for Vinyl Chloride exposure by employees and Vinyl Chloride emissions to the atmosphere. Both OSHA and EPA are empowered by the Congress of the United States to set standards that protect the health and safety of workers. Failure by any company to comply with these standards will result in a substantial legal penalty.

BFGoodrich President, John Ong, stated that the new BFGoodrich developments would permit our plants to average 1 to 3 ppm in the work atmosphere and thereby comply with the Laws.

With the achievements of this technical effort by BFGoodrich, it would have been possible for our company to keep these developments secret and thereby gain an advantage over our competitors. BFGoodrich chose to make these developments available to any company in the world because we are concerned over the health of people, especially when a solution is available. The

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requirement placed on making this new technology available was that it would not be given away. This due to the tremendous amount of time and money that had been spent in the development, which a company obtaining this technology from us would not be required to spend. Therefore, BFGoodrich technology will be offered on a licensing fee basis.

It is the specific aim of BFGoodrich to offer three VCM containment technology developments to Chemicals and Plastics India Limited. These are described as follows:

1. Clean Reactor Technology - which is BFG's secret and proprietary polyaromatic resin materials, techniques, and processes commercially used by BFG for alleviating PVC buildup on the internal surfaces of reactors in which VCM is polymerized in aqueous suspension to PVC; thereby avoiding the necessity for cleaning the reactors after each successive charge and also increasing productivity from a given reactor.
2. Hydraulic Reactor Technology - which is BFG's proprietary apparatus and processes for mechanical, hydraulic reactor cleaning (HRC) when necessary, of the inside surfaces of reactors in which VCM is polymerized to PVC; thereby virtually avoiding the necessity for manual cleaning.
3. Improved Stripping Technology - which is BFG's proprietary process and apparatus for counter-current, multi-stage, steam-stripping of VCM from PVC slurry resulting from the aqueous suspension polymerization of VCM to PVC; thereby reducing the amount of VCM escaping from the production facility and in the PVC produced.

A proposal to license BFG's VCM containment technology will be forwarded to you. The proposed agreement will require both Chemplast Board of Directors approval and Government of India approval before the agreement can be implemented. BFGoodrich strongly recommends approval of this agreement for the purpose of guarding the health and safety of Chemplast employees. The final approval will be for the Chemplast Board of Directors.

The amount of the licensing fee given in the agreement proposal was established based on the cost to BFG for the development effort. The cost was in the millions and involved 130 technical people over a period of two years. We feel that the amount of the license fee is reasonable considering the cost to BFG, and our desire for all companies to be encouraged to protect the health and welfare of their employees.

By way of background on the use of this BFG technology, all BFG plants in the U.S.A., namely, Long Beach, Henry, Avon Lake, Louisville, and Pedricktown PVC plant, International BFG subsidiaries Australia and Canada

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in which EFG owns a majority equity, and EFG associate companies, those in which EFG owns a minority interest, are in various stages of incorporating these technologies into their PVC plant operations. In addition to these, EFG has several licensees around the world in companies with which we compete in the sale of PVC. This list, including potential licensees, is attached.

I trust that this information will impress upon you the concern that EFGoodrich has for the safety and health of its employees. We want to provide this technology to Chemplast by way of a License Agreement. I know that you are concerned for the health and safety of the Chemplast employees, and will make every effort to obtain the necessary approvals for this License Agreement. If I can provide additional information and/or clarification, then please let me know.

Best regards,

John E. Stroope
Director of Associate Company Relations

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attachments

bcc: R.P.Kenney

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**BFGoodrich Licensees for Clean Reactor Technology,
VCM Stripping Process, and the
Hydraulic Reactor Cleaning System**

CLEAN REACTOR TECHNOLOGY

<u>Licensees</u>	<u>Location</u>
Large U.S. Producer who does not wish to be identified	U.S.A.
China Gulf Plastics	Taiwan
Formosa Plastics Corp.	Taiwan
British Industrial Plastics	England

Trial Licensees

Hoechst AG	W. Germany
Firestone Plastics	U.S.A.
Tenneco Chemicals	U.S.A.
Borden Chemical	U.S.A.
Shell International	Holland
(informed us trial agreement will be signed in Oct. 1977)	

VCM STRIPPING PROCESS

<u>Licensees</u>	<u>Location</u>
Large U.S. Producer who does not wish to be identified	U.S.A.
Air Products & Chemicals	U.S.A.
Borden Chemical	U.S.A.
Stauffer Chemical	U.S.A.
KemaNord	Sweden
Montedison	Italy
S.I.R. Consorzio Industriale	Italy
Denka	Japan
British Industrial Plastics	England
DSM	Holland
Large U.S. Producer (sublicensed to Zorka Sabac pending approval by Yugoslav government)	Yugoslavia

HYDRAULIC REACTOR CLEANER

<u>Licensees</u>	<u>Location</u>
Atlantic Tubing & Rubber	U.S.A.
Conoco Chemicals	U.S.A.
Diamond Shamrock	U.S.A.
Montedison	Italy
Vinatex Limited	England
Standard Oil of Ohio	U.S.A.

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