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PPG INDUSTRIES, INC./20325 CENTER RIDGE RD./CLEVELAND, OHIO 44116/AREA 216/331-4100

October 24, 1974

Regional Sales Office
Industrial Chemical Division

Mr. E. W. Shaw
B. F. Goodrich Chemical Company
6100 Oak Tree Boulevard
Cleveland, Ohio 44131

Dear Mr. Shaw:

SUBJECT: SAFE HANDLING AND STORAGE OF IPP

A unique type of decomposition involving a quantity of stored Di-Isopropyl Peroxydicarbonate (IPP) has recently occurred. We wish to re-emphasize to our customers that IPP, as well as our other undiluted Peroxydicarbonates, should always be maintained at 0 degree F or less during storage. As a cautionary measure, we suggest that you review your plant practices to ensure that IPP is always stored at or below this recommended temperature level. As far as is known by PPG, all previous decompositions of stored IPP have followed a classical pattern:

- 1) Adequate cooling has not been maintained.
- 2) The temperature of the product has increased, and this has been accompanied by normal exothermic decomposition.
- 3) As the product temperature has increased, the rate of decomposition has increased, culminating in an auto-accelerative decomposition.
- 4) The peak of decomposition has frequently been accompanied by fire, started either by an external ignition source or by auto-ignition of the flammable decomposition products.

The most recent decomposition involved 650 pounds of IPP that was stored in an insulated shipping chest which utilizes dry ice as the cooling mechanism. The summary of events concerning this decomposition are as follows:

- 1) The chest was assumed to be empty of product and dry ice was not replenished. Loss of cooling has definitely been established as the primary factor causing this decomposition.

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- 2) After several days with no dry ice additions to the storage box, decomposition occurred.
- 3) Fire was observed to accompany the decomposition.
- 4) After a short period of flames issuing from the box, an explosion took place.
- 5) Fortunately, there were no personal injuries involved in this decomposition.

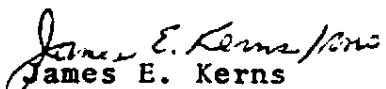
This explosion of stored IPP is totally unprecedented in so far as is known by PPG, but it must now be acknowledged that such an event can occur. The force of the explosion was significant. It completely destroyed the storage chest, and the shed type storage facility was damaged beyond repair. However, an adjacent well-iced chest of IPP (750 Pounds) was extensively damaged, but the contents did not decompose.

To reiterate, we do recommend that all IPP consumers again inspect their storage facilities, review plant procedures and practices to ensure that storage temperatures are maintained at 0 degree F or less. Any storage facility that is smoking, burning or obviously contains decomposing Percarbonates, should not be approached until all signs of activity have disappeared.

If you have further questions concerning this incident or would like to discuss Safe Handling And Storage Procedures, please call on us.

Very truly yours,

PPG Industries, Inc.
Industrial Chemical Division


James E. Kerns
Regional SalesManager

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