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TEXAS DIVISION
FREEPORT, TEXAS 77541

ENVIRONMENTAL HEALTH REPORT

ATMOSPHERIC SURVEY FOR HYDROGEN FLUORIDE
CHLORINE V, BUILDING A-1324

FILE NO. A13-716
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CHECKED R. L. Daniel
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Summary

When the asbestos containing Kynar® is heated on an open hot plate, hydrogen fluoride vapors are given off in high concentrations.

It is recommended that this procedure be done in a well vented hood.

It is also recommended that a respirator be furnished in this area that would be effective against both asbestos dust and acid gases.

It is further recommended that the survey be repeated with personnel monitoring after the proper corrections have been made.

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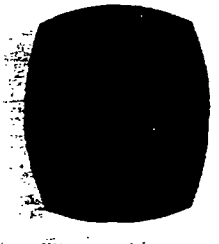

INTRODUCTION

At the request of supervision, an analysis was made on impregnated asbestos to determine if vapors being released when heating were harmful. This survey was made in June, 1975.

METHODOLOGY

The asbestos in question was impregnated with Kynar® which contains vinylidene fluoride. The label states that the temperature should not be raised above 600°F when Kynar® is used and under ordinary conditions this does not happen, but the samples taken for analyses are often dried on a hot plate. The temperature of the hot plate reaches 1100-1200°F.

Two grams of the impregnated asbestos was placed in a glass tube and heated while passing nitrogen over it. The effluent was trapped in liquid nitrogen traps.

The traps were washed out with 4 mls. of water and made up to 50 mls. Fluoride ion and pH determinations were made by Charley Norman of Central Laboratory, B-2406.

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RESULTS

At 500°F the pH of the solution was 7.3 and the fluoride ion was non detectable. When the temperature was raised to 1100°F the pH was 1.8 and the fluoride level was 6500 ppm of hydrogen fluoride.

CONCLUSION

When asbestos containing Kynar® is heated above 600°F, fluoride gas is released. The vapor can be harmful and should not be breathed.

RECOMMENDATIONS

1. If drying of this material is necessary over a hot plate - this should be done within a hood with the hood exhaust vented to the open air. If large quantities are to be heated this way, then the hood vent should be scrubbed to remove the vapors from the atmosphere.

RECOMMENDATIONS (continued)

2. Since the breathing of the asbestos dust is harmful and the vapors also, it is recommended that a respirator be provided in the area where this is heated that would be effective against both dust and acid gases.

3. When corrections have been made, it is recommended that workmen be monitored for personal exposure.

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