

GAF
CHEMICALS
CORPORATION

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INIT 07/14/94

Mr. Louis Borghi, Senior Scientist
Industrial Chemical Information Section
DYNAMAC CORPORATION
The Dynamac Building
11140 Rockville Pike
Rockville, MD 20852



84940000244

Dear Mr. Borghi:

In response to your request for additional information on the environmental and occupational exposure of 2-Pyrrolidone, GAF submits the following data:

Environmental Exposure

As reported in J. Ansell's letter to the ITC, reaction residues from 2-Pyrrolidone manufacture are discharged to either waste disposal wells, or treated in an activated sludge treatment plant. Reactor cleaning water is similarly routed to the respective treatment systems.

Enclosed are monitoring data for a 2-Pyrrolidone run made in 1984 at our Texas City, TX facility. Please note that although 2-Pyrol is currently manufactured only at our Calvert City, KY plant, where the seal pots are not routinely monitored, we believe the Texas City data to be representative of a typical run.

Background:

During the manufacture of 2-Pyrol, the reaction solution is typically stripped of water. The seal water from the jet condenser seal legs on the vacuum towers was sampled three times a day, and analyzed by flash gas chromatography for the presence of "product." Refer to the dates February 23-28 for 2-Pyrrolidone data.

The first column of data, labeled "LT/OH," is the percent of "product" in the condensed overhead stream (waste) from the first distillation tower or "lights tower" (volume is approximately 1600 lbs./hour). The second column, labeled "LTS," represents the "product" content of the condensed steam from the lights tower vacuum jet (volume is approximately 498 lbs./hour). The third column provides the "product" content (volume is approximately 498 lbs./hour) of the condensed steam from the final tower vacuum jet.

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Mr. Louis Borghi, Dynamac Corporation
from J. Fowler, GAF Chemicals Corporation
Page Two

Due to the analytical technique employed, the measurements obtained in the first two columns are predominantly due to the Butyrolactone feedstock, rather than 2-Pyrrolidone. It is the third column measurement that actually provides the amount of 2-Pyrrolidone in the seal pot water.

At Texas City, these streams are discharged into the chemical sewage system and ultimately into a dry disposal (injection) well. At Calvert City, these streams are discharged into an activated sludge treatment plant. The discharge from this treatment plant is routinely monitored to determine organic content (BOD) and has been found to be in conformance with the maximum allowable limits set by the state. As reported to the ITC, the fraction of 2-Pyrrolidone released to the environment is insignificant.

Occupational Exposure

The GAF Environmental Engineering Department has conducted an experimental ambient air monitoring survey to determine airborne concentrations of 2-Pyrrolidone at the Calvert City facility. Although the sampling and analytical methods employed have not been qualified for actual use, the results showed 2-Pyrrolidone present at less than 0.2 ppm. A second survey has been scheduled for October or November of this year using collection and analytical techniques deemed more appropriate for this type of determination. The results of this survey will be forwarded to you when they become available.

In addition, Methyl Pyrrolidone and Vinyl Pyrrolidone ambient air monitoring surveys have shown no exposures to these substances at a limit of 1 ppm. These products, having vapor pressures similar to 2-Pyrrolidone, 0.29 mmHg at 20°C and 0.10 mmHg at 24°C respectively, are manufactured in the same equipment used for 2-Pyrrolidone production.

If there are any questions, please call.

Sincerely,

GAF CHEMICALS CORPORATION



Janet A. Fowler
Supervisor
Product Information Services

JAF:cmb

Enclosure

cc: J. Ansell
L. Blecher

GADSAR
R. Hylan

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SEAL POTS (GC) (Except B31)

AGENCY	DATE	TIME	Once/Shift		Product in Seal		VP	H2D		MPPY/Py		EAST	WEST	BEE	AID
			BIO	LTS	FINAL	LTS		PROD.	VP	LTS	PROD.				
19 84	2/23	2400	002	N					11.6	2.9	008				
	2/24	0600	002	N				3.3	9.3	0.11					
	2-24	1400	003	Nil				2.6	6.9	0.005					
	2/24	2000	001	Nil				2.4	7.5	0.13					
	2-25	0600	001	Nil				1.8	4.3	0.003					
	2-25	1400	004	Nil				2.4	7.1	0.03					
	2/25	2000	Nil	Nil				2.7	1.8	0.012					
	2-26	0600	000	Nil				3.2	9	0.09					
	2-26	1400	007	Nil				2.8	7.2	0.007					
	2/26	2000	006	Nil				3.2	1.0	0.01					
	2/27	0600	Nil	0.004				2.6	9.4	0.01					
	2-27	1400	006	Nil				3.6	1.1	Nil					
	2/28	2000	005	Nil				3.7	1.02	1.2					
	2-28	2130	778	WASH	Hand										
	2/29	0600	001	Nil											
	2/29	1400	001	Nil											
	2/29	2000	002	Nil											
	2/31	0600	000	1000	0.02										
	2/31	1400	001	Nil											
	2/31	2000	001	Nil											
	3/2	0600	000	1000	0.02										
	3/2	1400	000	1800	0.008										
	3/2	2000	009	Nil											
	3/3	0600	005	N											
	REPORT														

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