



FYI-0794-000994



FYI-94-000994
INIT 07/14/94

UNION CARBIDE AGRICULTURAL PRODUCTS COMPANY, INC.
SECTION P-3, OLD RIDGEBURY ROAD, DANBURY, CT 06817

FYI-0794-00994



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(A)

August 5, 1985

Mr. Louis Borghi
Senior Scientist
Industrial Chemical Information Section
Dynamac Corporation
The Dynamac Building
11140 Rockville Pike
Rockville, Maryland 20852

6/10/85

Dear Lou:

My apologies for the delay in getting this material on tetra-hydronaphthalene into your hands. I trust it is still timely enough to be of value.

Very truly yours,

W. C. Nissen, Jr.
Business Manager
Intermediates

WCN/nad
Attachments

cc: J. S. Berry
D. L. Heywood

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I. Description of Process Waste Streams

Tetrahydronaphthalene is present in various process waste streams from the Bisdithiocarbamate, Carbaryl and Acetone units.

A. Bisdithiocarbamate

1. By product fuel tank - This material contains an average of 0.145% tetrahydronaphthalene (range is 0.014% to 0.56%). This material is transferred twice per week to the powerhouse and is burned as fuel in the boilers. The average daily discharge rate for tetrahydronaphthalene is 25 lbs/day.
2. Caustic pretreatment tank - This stream contains an average tetrahydronaphthalene concentration of 0.010% (range is 0 to 0.073%). This stream is discharged to the Wastewater Treatment Unit (WWTU) at an average rate of 96 lbs tetrahydronaphthalene/day.
3. Tetrahydronaphthalene Residue - This material contains approximately 75% tetrahydronaphthalene and is discharged to the powerhouse at an average rate of 130 lbs tetrahydronaphthalene/ day.

B. Acetone

1. Naphthol Residues - This residue contains approximately 0.1 percent tetrahydronaphthalene and is burned at the powerhouse at an average rate of 0.6 lbs tetrahydronaphthalene/day.
2. Miscellaneous Direct Air Emissions - Several pieces of equipment vent directly to the atmosphere and contain tetrahydronaphthalene. Values for this equipment were obtained from the 1981 Air Emission Inventory and are presented on the attached table.

C. Carbaryl

1. Hydrogenation Waste Caustic - This stream contains 16% caustic and 0 to 8 ppm of tetrahydronaphthalene. The stream is discharged to the WWTU and the tetrahydronaphthalene discharge rate is approximately 0.1 lbs/day.
2. Oxidation Decanter, Bottom Layer - This material contains approximately 2.5 percent tetrahydronaphthalene and is sent to the powerhouse for burning. The tetrahydronaphthalene discharge rate is approximately 360 pounds per day.

3. Oxidation Evaporator Residues - These residues contain approximately 0.1 percent tetrahydronaphthalene and is sent to the powerhouse. The tetrahydronaphthalene discharge rate is approximately 14 pounds per day.
4. Naphthol Refining Still Residues - This stream contains trace amounts of tetrahydronaphthalene (0 to 0.05%) and is burned at the powerhouse. The tetrahydronaphthalene discharge rate is very low (450 lbs/yr).
5. Miscellaneous Direct Air Emissions - Several pieces of equipment and tanks vent directly to the atmosphere and contain tetrahydronaphthalene. Values for this equipment were obtained from the 1981 Air Emission Inventory and are presented on the attached table.

II. Monitoring Information - Table I is a summary of tetrahydronaphthalene emissions to the environment from the Institute Plant.

TABLE I

Source	Conc. of Tetrahydronaphthalene(%)	Tetrahydronaphthalene Discharge Rate (lbs/yr)	Control Device	Reduction ¹ Efficiency (%)	Tetrahydronaphthalene Emitted to Air (lbs/yr)	Tetrahydronaphthalene Emitted to Water (lbs/yr)
A. Bisdithiocarbamate						
1. By product fuel tank	0.145	9000	Powerhouse	99.99	0.9	-
2. Caustic Pretreatment Tk	0.010	35,040	WMTU	99.93	-	35
3. Tetrahydronaphthalene Residue	75	47,906	Powerhouse	99.99	4.8	-
B. Acetone						
1. Naphthol Residues	0.1	232	Powerhouse	99.99	0.02	-
2. East Jet ²	100	720	-	-	720	-
3. Center Jet ²	100	720	-	-	720	-
4. West Jet ²	100	720	-	-	720	-
C. Carbaryl¹						
1. Hyd. Waste Caustic	4 ppm	36	WMTU	99.93	-	0.04
2. Oxid. Decanter Bottom Layer	2.5	131,250	Powerhouse	99.99	13	-
3. Oxid. Evap. Res.	0.1	5,250	Powerhouse	99.99	0.5	-
4. Naphthol Ref. Still Res.	0-0.05	450	Powerhouse	99.99	0.05	-
5. Hydrogen Blowoff ²	90.6	50,000	-	-	50,000	-
6. Sulfide Ox. Vent ²	34.8	8,540	-	-	8,540	-
7. Reactor Blowoff ²	nil	5,600	-	-	5,600	-
8. TSS Jet ²	100	2,350	-	-	2,350	-
9. Evap. Jet ²	100	890	-	-	890	-
10. TRCS Jet ²	100	1,140	-	-	1,140	-
11. TRFS Jet ²	100	1,450	-	-	1,450	-
12. 14 Storage Tanks ²	-	2,890	-	-	2,890	-
					75,039	35

1 Best engineering estimate

2 From the 1981 Air Emission Inventory

3 Based on actual data generated during 1Q 1985