

217/782-2113

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT

PERMITTEE

DSM-Desotech, Inc.
Attn: Jill Ryan
1022 St. Charles Street
Elgin, Illinois 60120

Application No.: 02070031

I.D. No.: 089807AAA

Applicant's Designation:

Date Received: July 1, 2002

Subject: R&D of UV and Electron Beam Coatings and Resins

Date Issued:

Expiration Date:

Location: 1022 St. Charles Street, Elgin

This permit is hereby granted to the above-designated Permittee to OPERATE emission source(s) and/or air pollution control equipment consisting of:

- 3 Process Reactors (R-2101, R-2201, R-2301)
- 3 Pilot Reactors (R-2701, R-2801, R-2901)
- 3 Weigh Tanks (WT-1101, WT-1201, WT-1301)
- 5 Blend Tanks (B-3201, B-3301, B-3401, B-3501, B-3601)
- 2 Product Filling Lines (A, B)
- 2 Natural Gas Boilers (B-01, B-02)
- 1 Emergency Generator

pursuant to the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

- 1a. This federally enforceable state operating permit is issued to limit the emissions of air pollutants from the source to less than major source thresholds (i.e., 25 tons/year for VOM, 10 ton/year individual HAP, 25 ton/year combined HAP). As a result the source is excluded from the requirement to obtain a Clean Air Act Permit Program (CAAPP) permit. The maximum emissions of this source, as limited by the conditions of this permit, are described in Attachment A.
- b. Prior to issuance, a draft of this permit has undergone a public notice and comment period.
- c. This permit supersedes all operating permits issued for this location.
2. This permit is issued based on the source (R&D of UV and electron beam coatings and resins) complying with the requirements of 35 Ill. Adm. Code 218, Subpart RR by meeting the control requirements of 35 Ill. Adm. Code 218.966(c) (1) and (2).
3. The emissions of Hazardous Air Pollutants (HAPs) as listed in Section 112(b) of the Clean Air Act shall not equal or exceed 10 tons per year of any single HAP or 25 tons per year of any combination of such HAPs, or such lesser quantity as USEPA may establish in rule which would require the Permittee to obtain a CAAPP permit from the Illinois EPA. As a result of this condition, this permit is issued based on the emissions of any HAP from this source not triggering the requirement to obtain a CAAPP permit from the Illinois EPA.

- 4a. Emissions and operation of the 3 Process Reactors (R-2101, R-2201, R-2301) shall not exceed the following limits:

<u>Throughput Rate</u>		<u>Volatile Organic Material Emissions</u>	
<u>(Gallon/Month)*</u>	<u>(Gallon/Year)</u>	<u>(Ton/Month)*</u>	<u>(Ton/Year)</u>
36,191*	434,292	0.20*	2.4

These limits are based on maximum emission rates at the maximum material usage indicated in the application. Compliance with annual limits shall be determined from a running total of 12 months of data.

- b. Emissions and operation of the 3 Pilot Reactors (R-2701, R-2801, R-2901) shall not exceed the following limits:

<u>Throughput Rate</u>		<u>Volatile Organic Material Emissions</u>	
<u>(Gallon/Month)*</u>	<u>(Gallon/Year)</u>	<u>(Ton/Month)*</u>	<u>(Ton/Year)</u>
70*	840	0.002*	0.024

These limits are based on maximum emission rates at the maximum material usage indicated in the application. Compliance with annual limits shall be determined from a running total of 12 months of data.

- c. Emissions and operation of the Blend Tanks (B-3101, B-3201, B-3301, B-3401, B-3501, B-3601) operations shall not exceed the following limits:

<u>Throughput Rate</u>		<u>Volatile Organic Material Emissions</u>	
<u>(Gallon/Month)*</u>	<u>(Gallon/Year)</u>	<u>(Ton/Month)*</u>	<u>(Ton/Year)</u>
34,666*	415,993	0.34*	4.1

These limits are based on maximum emission rates at the maximum material usage indicated in the application. Compliance with annual limits shall be determined from a running total of 12 months of data.

- d. Emissions and operation of the Weigh Tanks (WT-1101, WT-1201, WT-1301) operations shall not exceed the following limits:

<u>Throughput Rate</u>		<u>Volatile Organic Material Emissions</u>	
<u>(Gallon/Month)*</u>	<u>(Gallon/Year)</u>	<u>(Ton/Month)*</u>	<u>(Ton/Year)</u>
11,440*	137,280	0.03*	0.36

These limits are based on maximum emission rates at the maximum material usage indicated in the application. Compliance with annual limits shall be determined from a running total of 12 months of data.

- e. Emissions and operation of the Product Filling operations shall not exceed the following limits:

Throughput Rate		Volatile Organic Material Emissions	
(Gallon/Month)*	(Gallon/Year)	(Ton/Month)*	(Ton/Year)
36,191*	434,292	0.020*	2.4

These limits are based on maximum emission rates at the maximum material usage indicated in the application. Compliance with annual limits shall be determined from a running total of 12 months of data.

* The monthly limits shall be determined each month as a rolling average of the previous 12 months of data.

5. Emissions and operation from the all natural gas fuel combustion units shall not exceed the following limits:

Natural Gas Usage		E M I S S I O N S									
(mmscf/Mo) (mmscf/Year)		NO _x		CO		PM-10		SO ₂		VOM	
(T/Mo)	(T/Yr)	(T/Mo)	(T/Yr)	(T/Mo)	(T/Yr)	(T/Mo)	(T/Yr)	(T/Mo)	(T/Yr)	(T/Mo)	(T/Yr)
24.3	243	1.22	12.2	1.02	10.21	0.09	0.92	0.007	0.07	0.07	0.67

These limits are based on maximum firing rate at continuous operation and AP-42 emission factors. Compliance with annual limits shall be determined from a running total of 12 months of data.

6. Emissions and operation of the diesel engine/generators shall not exceed the following limits:

Diesel Fuel Usage		E M I S S I O N S									
(Gallon/Hour) (Gallon/Year)		NO _x		CO		VOC		PM ₁₀		SO ₂	
(lb/hr)	(T/Yr)	(lb/hr)	(T/Yr)	(Lb/Hr)	(T/Yr)	(Lb/Hr)	(T/Yr)	(Lb/Hr)	(T/Yr)	(Lb/Hr)	(T/Yr)
10.52	46,080	4.10	8.97	1.09	2.38	0.10	0.23	0.13	0.28	0.52	1.13

These limits are based on AP-42 emission factors and use of diesel fuel. Compliance with annual limits shall be determined from a running total of 12 months of data.

7. Diesel fuel shall be the only fuel fired in the engine/generators. The use of any other fuel shall require a revised permit.
8. The Permittee shall maintain the recordkeeping required as specified in 35 Ill. Adm. Code 218.966(c) (1) and (2):
 - a. Repair any component from which a leak of VOL can be observed. The repair shall be completed as soon as practicable but no later than 15 days after the leak is found, unless the leaking component cannot be repaired until the process unit is shut down, in which case the leaking component must be repaired before the unit is restarted.
 - b. For any leak which cannot be readily repaired within one hour after detection, the following records, as set forth in this subsection, shall be kept. These records shall be maintained by the Permittee for a minimum of two years after the date on which they are made. Copies of the records shall be made available to the Illinois EPA or USEPA upon verbal or written request.
 - i. The name and identification of the leaking component;
 - ii. The date and time the leak is detected;
 - iii. The action taken to repair the leak; and
 - iv. The date and time the leak is repaired.
9. The Permittee shall maintain monthly records of the following items:
 - a. The name and identification of each VOM/HAP containing material produced;
 - b. Throughput of each process (gallon/month and gallon/year);
 - c. Natural Gas usage (mmscf/month and mmscf/year);
 - d. Diesel fuel usage (gallon/month and gallon/year); and
 - e. VOM and HAP emissions with supporting calculations (ton/month and ton/year).
10. All records and logs required by this permit shall be retained at a readily accessible location at the source for a period of 5 years for inspection and copying by the Illinois EPA or USEPA upon request. Any records retained in an electronic format (e.g., computer) shall be capable of being retrieved and printed on paper during normal source office hours so as to be able to respond to the Illinois EPA request for records during the course of a source inspection.
11. If there is an exceedance of the requirements of this permit as determined by the records required by this permit, the Permittee shall submit a report to the Illinois EPA's Compliance Section in

Springfield, Illinois within 30 days after the exceedance. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance or violation and efforts to reduce emissions and future occurrences.

12. Two (2) copies of required reports and notifications concerning equipment operation or repairs, performance testing or a continuous monitoring system shall be sent to:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Compliance Section (#40)
P.O. Box 19276
Springfield, Illinois 62794-9276

and one (1) copy shall be sent to the Illinois EPA's regional office at the following address unless otherwise indicated:

Illinois Environmental Protection Agency
Division of Air Pollution Control
9511 West Harrison
Des Plaines, Illinois 60016

13. The Permittee shall submit the following additional information with the Annual Emissions Report, due May 1st of each year: annual VOM, individual HAP and combined HAP emissions. If there have been no exceedances during the prior calendar year, the Annual Emission Report shall include a statement to that effect.

If you have any questions on this permit, please call John Blazis at 217/782-2113.

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

DES:JPB:jar

cc: Illinois EPA, FOS Region 1
Illinois EPA, Compliance Section
USEPA

Attachment A - Emission Summary

This attachment provides a summary of the maximum emissions from operation of this UV and Electron Beam Coatings and Resins plant operating in compliance with the requirements of this federally enforceable permit. In preparing this summary, the Illinois EPA used the annual operating scenario that results in maximum emissions from such a plant. The resulting maximum emissions are well below the levels (i.e., 100 tons/year for VOM, 10 ton/year individual HAP, 25 ton/year combined HAP) at which this source would be considered a major source for purposes of the Clean Air Act Permit Program. Actual emissions from this source will be less than predicted in this summary to the extent that less material is handled and control measures are more effective than required in this permit.

1. Emissions and operation of the 3 Process Reactors (R-2101, R-2201, R-2301) shall not exceed the following limits:

Throughput Rate		Volatile Organic Material Emissions	
<u>(Gallon/Month) *</u>	<u>(Gallon/Year)</u>	<u>(Ton/Month) *</u>	<u>(Ton/Year)</u>
36,191*	434,292	0.20*	2.4

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Throughput Rate		Volatile Organic Material Emissions	
<u>(Gallon/Month) *</u>	<u>(Gallon/Year)</u>	<u>(Ton/Month) *</u>	<u>(Ton/Year)</u>
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Throughput Rate		Volatile Organic Material Emissions	
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4. Emissions and operation of the Weigh Tanks (WT-1101, WT-1201, WT-1301) operations shall not exceed the following limits:

Throughput Rate		Volatile Organic Material Emissions	
<u>(Gallon/Month) *</u>	<u>(Gallon/Year)</u>	<u>(Ton/Month) *</u>	<u>(Ton/Year)</u>
11,440*	137,280	0.03*	0.36

5. Emissions and operation of the Product Filling operations shall not exceed the following limits:

Throughput Rate		Volatile Organic Material Emissions	
<u>(Gallon/Month)*</u>	<u>(Gallon/Year)</u>	<u>(Ton/Month)*</u>	<u>(Ton/Year)</u>
36,191*	434,292	0.020*	2.4

6. Emissions and operation from the all natural gas fuel combustion units shall not exceed the following limits:

Natural Gas Usage		E M I S S I O N S											
<u>(mmscf/Mo)</u>		<u>(mmscf/Year)</u>		<u>NO_x</u>		<u>CO</u>		<u>PM-10</u>		<u>SO₂</u>		<u>VOM</u>	
<u>(T/Mo)</u>	<u>(T/Yr)</u>	<u>(T/Mo)</u>	<u>(T/Yr)</u>	<u>(T/Mo)</u>	<u>(T/Yr)</u>	<u>(T/Mo)</u>	<u>(T/Yr)</u>	<u>(T/Mo)</u>	<u>(T/Yr)</u>	<u>(T/Mo)</u>	<u>(T/Yr)</u>	<u>(T/Mo)</u>	<u>(T/Yr)</u>
		24.3	243	1.22	12.2	1.02	10.21	0.09	0.92	0.007	0.07	0.07	0.67

7. Emissions and operation of the diesel engine/generators shall not exceed the following limits:

Diesel Fuel Usage		E M I S S I O N S											
<u>(Gallon/Hour)</u>		<u>(Gallon/Year)</u>		<u>NO_x</u>		<u>CO</u>		<u>VOC</u>		<u>PM₁₀</u>		<u>SO₂</u>	
<u>(lb/hr)</u>	<u>(T/Yr)</u>	<u>(lb/hr)</u>	<u>(T/Yr)</u>	<u>(Lb/Hr)</u>	<u>(T/Yr)</u>	<u>(Lb/Hr)</u>	<u>(T/Yr)</u>	<u>(Lb/Hr)</u>	<u>(T/Yr)</u>	<u>(Lb/Hr)</u>	<u>(T/Yr)</u>	<u>(Lb/Hr)</u>	<u>(T/Yr)</u>
		10.52	46,080	4.10	8.97	1.09	2.38	0.10	0.23	0.13	0.28	0.52	1.13

8. The emissions of Hazardous Air Pollutants (HAPs) as listed in Section 112(b) of the Clean Air Act shall not equal or exceed 10 tons per year of any single HAP or 25 tons per year of any combination of such HAPs, or such lesser quantity as USEPA may establish in rule which would require the Permittee to obtain a CAAPP permit from the Illinois EPA.

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