

PLANT-WIDE EMISSIONS LIMITS (PAL, PSEL)

Imation, Weatherford Oklahoma (Printing and Publishing products for graphics arts and printing industry and Data Storage Products) - plantwide PTE limit for VOC

Process Description

Emissions Monitoring Technique

- Monitoring

- Performance Testing

- Recordkeeping and Reporting

Emissions Calculation

Pollutant Control Technique

Process Description

The Imation facility has a plantwide PTE limit for VOC. The equipment covered by the flexible permit is shown.

Section A

2. Points of emissions and emissions limitations for each point: [OAC 252:100-8-6(a)]

<u>Emission Unit</u>	<u>Emission Point</u>	<u>Description</u>	<u>Control</u>
<i>EUG 1</i>			
1	001-C&D	West Solution Prep. Rm. (Chlorinated)	
2	001-A&B	East Solution Prep. Rm. (Non-chlorinated)	Closed Covering System
<i>EUG 2</i>			
3	001-BB	15W Pump Rm.	none required
4	024-111	15W Coater	Catalytic Oxidizer
<i>EUG 3</i>			
5	001-S	12W Pump Rm.	Solvent Rec. Unit (not required)*
6	023-JJJ	12W Coater	Solvent Rec. Unit (not required)*
<i>EUG 4</i>			
7	insignificant	Emulsion Coating and Making Area	Removed from service
<i>EUG-5</i>			
8	025-KKK	DSD 51 Coater	Thermal Oxidizer
<i>EUG 6</i>			
9		#1 Boiler (30.4 MMBTUH) serial # 14625-1	none required
9		#2 Boiler (30.4 MMBTUH) serial # 14625-2	none required
10		Storage Tanks	See Table Below

*(not required) EUG 3 predates permitting requirements and the control device is not required.

Storage Tank Data

<u>Tank No.</u>	<u>Cap. (gals)</u>	<u>Contents</u>	<u>Dia. (ft.)</u>	<u>Ht/Lgth (ft.)</u>	<u>Inst. Date</u>	<u>Control</u>
T-1	4,300	RCRA Solvent (PPS-SRU)			after 1990	SRU
T-2	10,000	1,1,2 TCA	9	20	1990	SRU
T-3	15,000	MEK	9	30	1990	SRU
T-4	100,000	No. 2 Diesel	30	25	1974	none
T-5a	325	Gasoline	3.5	3.9	1987	none
T-5b	325	No. 2 Diesel	3.5	3.9	1987	none

3. For the purposes of this permit, total usage of VOC containing materials during any consecutive 12-month period is limited to an amount which ensures that the plant-wide emissions (including any excess emissions and fugitive emissions) of volatile organic compounds shall not exceed 249 TPY (the CAP) and shall not exceed 836 PPH.

4. Emissions of criteria pollutants from specific equipment shall be limited as follows:

Scenario 1 Emissions Limit

<u>EU</u>	<u>Description</u>	<u>PM₁₀</u>		<u>SO₂</u>		<u>NO_x</u>		<u>CO</u>		<u>VOC</u>	
		<u>PPH</u>	<u>TPY</u>	<u>PPH</u>	<u>TPY</u>	<u>PPH</u>	<u>TPY</u>	<u>PPH</u>	<u>TPY</u>	<u>PPH</u>	<u>TPY</u>
1	West Sol. Prep. Rm.	-	-	-	-	-	-	-	-	Subject to CAP	
2	East Sol. Prep. Rm.	-	-	-	-	-	-	-	-	Subject to CAP	
3	15W Pump Rm.	-	-	-	-	-	-	-	-	Subject to CAP	
4	15W Coater	-	-	-	-	-	-	-	-	Subject to CAP	
5	12W Pump Rm.	-	-	-	-	-	-	-	-	Subject to CAP	
6	12W Coater	-	-	-	-	-	-	-	-	Subject to CAP	
8	DSD Ther. Oxidizer	-	-	-	-	2.31	10.12	7.02	30.75	Subject to CAP	
P1	PPSD Cat. Oxidizer	0.25	1.10	6.50	28.47	2.54	11.13	0.64	2.80	Subject to CAP	
10	Storage Tanks	-	-	-	-	-	-	-	-	Subject to CAP	

5. Plant wide emissions of the following substances shall not exceed the following rates (PPH):

Toxic Emissions

(Assumes all emissions from one stack and shows maximum emissions allowed with MAAC compliance)

<u>Toxic</u>	<u>CAS No.</u>	<u>Category</u>	<u>Title III HAP</u>	<u>MAAC $\frac{g}{m^3}$</u>	<u>Maximum Allowed PPH</u>
1,1,2 trichloroethane	79-00-5	A	yes	545	54.00
ethyl acrylate	140-88-5	A	yes	200	20.00
acrylonitrile	107-13-1	A	yes	20	2.00
cobalt compounds	7440-48-4	A	yes	0.5	0.05
ethyl alcohol	64-17-5	B	no	38,000	3800.00
glycol ethers	110-80-5	B	yes	36	3.50

methyl methacrylate	80-62-6	B	yes	8,200	820.00
trimethylamine	121-44-8	B	yes	800	80.00
ethyl benzene	100-41-4	C	yes	43,427	4350.00
glycol ethers	108-65-6	C	no	36,000	3500.00
glycol ethers	111-90-0	C	yes	274	27.00
glycol ethers	70657-70-4	C	no	11,000	1100.00
hydrochloric acid	7647-01-0	C	yes	700	70.00
methyl alcohol	67-56-1	C	yes	26,216	2625.00
methyl ethyl ketone	78-93-3	C	yes	59,000	5900.00
methyl isobutyl ketone	108-10-1	C	yes	20,486	2050.00
toluene	108-88-3	C	yes	37,668	3760.00
xylene	1330-20-7	C	yes	43,427	4350.00
ethyl glycol	107-21-1	C	yes	12,695	1269.00
cyclohexanone	108-94-1	C	no	10,036	1004.00
tetrahydrofuran	109-99-9	C	no	58,993	5899.00
isopropyl alcohol	67-63-0	C	no	98,339	9834.00

Emissions Monitoring Technique - Monitoring

The Imation flexible permit includes monitoring to ensure VOC emissions are maintained below the PTE cap. Example permit language is as follows:

Section C

1. The permittee shall maintain accessible monitoring equipment to verify that the 15W Maker (EUG 2) thermal oxidizer is operating at a temperature of at least 1400 °F or that a catalytic oxidizer is operating at a temperature of at least 600 °F. If performance testing shows 95% VOC control efficiency at a lower temperature, that lower temperature will supersede the 600 °F requirement. [OAC 252:100-43 & 40 CFR 64]
2. As an alternative to Section D, Specific Condition No. 3, the permittee may install and operate continuous emissions monitoring systems capable of verifying compliance with emissions limitations. [OAC 252:100-45]
3. The combustion temperature shall be monitored as the site operating parameter for the oxidizer of EUG-5 whenever HAP from magnetic tape manufacturing operations are vented to the control device. The combustion temperature shall be maintained at 1400_°F or higher, arithmetic average over any 3-hr interval [40 CFR 63.704(b)(3), 40 CFR 63.704(b)(8), 40 CFR 63.704(c)(3)(iv), Subsumed ODEQ Permit No. 95-363-O]
4. The combustion temperature of the thermal oxidizer according to Section C, Specific Condition No. 3 shall be measured by a CMS consisting of a thermocouple which has been installed, calibrated, maintained, and operated according to the manufacturer's specifications. The thermocouple calibration shall be verified every 3 months or the thermocouple shall be replaced according to any one of the following intervals: 3 months, or as specified by the manufacturer of the thermocouple, or recommended by National Institute of Standards Technology (NIST, formerly National Bureau of Standards), NBS

Monograph 125, National Bureau of Standards, Washington D.C. 1979. [40 CFR 63.704(c)(2)(ii), 40 CFR 63.704(c)(5), 40 CFR 63.8(c)(1)(iii), 40 CFR 63.705(j)]

5. For any Continuous Monitoring System (CMS) which includes a thermocouple, the following requirements of 40 CFR 63.8 apply to the thermocouple:

Cit. (40 CFR 63)

8(c)(1)(i) A thermocouple shall be replaced immediately upon a malfunction becoming known, and one or more spare thermocouples shall be maintained at the plant site. For purposes of this requirement, the term "immediate" has the following meaning: within 3 days of malfunction

8(c)(2) The thermocouple shall be located to provide representative temperature measurements

8(c)(4) The thermocouple shall be in continuous operation during all periods that there are HAP emissions from the equipment of EUG-5 (except the bulk storage tank for MEK), except during any period of thermocouple malfunction or routine or non-routine replacement of the thermocouple

8(g)(3) Data may be recorded in reduced or non-reduced form

8(g)(4) Data shall be converted into units of the relevant standard for reporting purposes

8(g)(5) Exclude from any data averaging: monitoring data recorded during periods of unavoidable breakdown of the thermocouple or during periods of replacement of the thermocouple.

Emissions Monitoring Technique – Performance Testing

Section D

2. If the permittee wishes to demonstrate that not all solvents used in the 15W Maker are discharged from the process, performance testing by EPA Method 24 of 40 CFR 60, or an equivalent method approved by AQD, shall be used to demonstrate adsorption or retention of solvents in or on products. [OAC 252:100-43]

3. If a catalytic oxidizer is utilized on the 15W Maker, at least once every six months, the permittee shall conduct tests of catalyst effectiveness in accordance with the manufacturer's recommendation on the air pollution controls sufficient to verify that the catalyst is active. Alternatively, catalyst effectiveness may be assessed on the basis of VOC input and emissions rates from the catalytic oxidizer as determined by mass balance and instrument measurement performed according to the manufacturer's recommendations. [OAC 252:100-43]

8. For EUG 5, where emissions are captured through a room, enclosure, or hood, instrumentation shall be installed, calibrated, operated, and maintained as per manufacturer's recommendations as necessary to measure continuously a site-specific operating parameter. [40 CFR 63.704(c)(7)]

9. The initial performance test for the total enclosure shall include a plan with the Compliance Status Report to be submitted to the appropriate authority (U.S. EPA Region VI or DEQ, if granted delegation) within 180 days of the compliance date of December 15, 1997 of 40 CFR 63 Subpart EE. The plan shall identify the operating parameter to be monitored, the rationale for the parameter, and specific monitoring procedures. [40 CFR 63.704(b)(6)]

Emissions Monitoring Technique - Recordkeeping and Reporting

Typical requirements for records related to continuous monitoring systems (CMS) per 40 CFR part 63, subpart A, General Provisions (specifically for section 63.10) are included for the thermocouple for the thermal oxidizer.

Typical reporting requirements consistent with 40 CFR part 63, subpart A are included in the permit for VOC. In addition, plant-wide recordkeeping related to the plant-wide PTE limit must also be maintained.

Section E

3. The following records are required for the 15W Coater. [OAC 252:100-8-6(a)(3)(B)]
- a) Catalyst effectiveness verification in accordance with the manufacturer specifications, or alternatively, through determination of VOC loading on the oxidizer and emissions from the oxidizer using instrumentation similar or equal to that which exists as of the date of this permit. Said instrumentation, where elected for use, shall be calibrated and maintained according to the specifications of the instrument manufacturer.
 - b) Afterburner temperature (daily).
 - c) Each occasion during which organic solvents from the 15W Maker are vented directly to the atmosphere. Records shall indicate the dates of venting, duration, and VOC emissions rates.
 - d) Usage of chlorinated solvents (daily).
 - e) Emissions of non-chlorinated solvents, calculated as shown in Section B (daily).

- f) Records of thermocouple maintenance according to Section C, Specific Condition 4 of this permit.
- g) VOC emissions shall be recorded (daily and cumulative annual). Upon request from the appropriate regulatory authority, the permittee shall make available an hourly emissions calculation.

5. The permittee shall keep records of the cumulative annual solvent throughput of each storage vessel identified under Section A, Specific Condition 2. [OAC 252:100-8-6(a)(3)(B)]

6. The following information shall be recorded for each bypass vent of EUG-5 that could potentially divert a vent stream away from the control device to the atmosphere: [40 CFR 63.706(c)(2)]

- a) Result of each monthly inspection
- b) Times and durations of all periods when the valve position on any bypass line changed to the open position

13. By the last day of each month, the owner/operator shall calculate and record facility-wide total emissions of VOC for the previous calendar month. The file shall include: [OAC 252:100-8-6(a)(3)(B)]

- a) Plant-wide VOC emissions in tons for the previous 12 months
- b) Plant-wide daily VOC emissions in pounds per day, averaged over the preceding month (hourly emissions if requested by the appropriate regulatory authority)
- c) Appropriate calculations that demonstrate a and b above

Emissions Calculation

The Imation flexible permit requires the facility to calculate and record facility-wide total emissions for VOC. Example permit language is shown below.

Section B

6. VOC emissions from the East and West Solution Prep. Rooms (EUG 1) shall be calculated on a mass balance daily. Solvent emissions shall be calculated as the amount of solvents used minus any solvents which the permittee can demonstrate to the

satisfaction of AQD are not emitted to the atmosphere. [OAC 252:100-8-6(a)(3)(B) & 40 CFR 64]

8. VOC emissions from the 15W Maker (EUG 2) shall be calculated on a mass-balance daily. Solvent emissions shall be calculated as the amount of solvents used minus any solvent which are not emitted to the atmosphere (such as reclaimed solvents or solvents which are retained in the products after coating curing). [OAC 252:100-37]

Section E

13. By the last day of each month, the owner/operator shall calculate and record facility-wide total emissions of VOC for the previous calendar month. The file shall include: [OAC 252:100-8-6(a)(3)(B)]

- a) Plant-wide VOC emissions in tons for the previous 12 months
- b) Plant-wide daily VOC emissions in pounds per day, averaged over the preceding month (hourly emissions if requested by the appropriate regulatory authority)
- c) Appropriate calculations that demonstrate a and b above

Pollutant Control Technique

The Imation flexible permit includes a plant-wide PTE limit for VOC. This VOC limit is met in part by using an add-on control technique/device. Example permit language indicating the use of a control technique/device to reduce VOC emissions is shown below.

Section B

7. Except when utilizing chlorinated solvents, all air discharges from the 15W Maker (EUG 2) during coating operations shall be vented to a thermal oxidizer, catalytic oxidizer, or equivalent device. Either an emissions control efficiency of at least 95% shall be maintained for the control device or a VOC emissions level of 25 ppm or less shall be achieved. All discharges utilizing chlorinated solvents shall be vented to a solvent recovery system that shall maintain a control efficiency of at least 95%. [OAC 252:100-8-6(a)(1) & 40 CFR 64]

9. A VOC capture efficiency of 80% for the 15W Maker (EUG 2) shall be maintained and shall be determined using an on-line measure at the duct that leads to the control

device. Solvents captured shall be determined on the basis of the amount of solvent routed to the control device plus the amount of solvents retained in the products after coating curing. Capture efficiency shall be the total amount of solvents captured divided by the total amount of solvents used. [OAC 252:100-37]

11. Tanks of 400 gallons capacity or greater (EUG 6) storing an organic material with a vapor pressure greater than or equal to 1.5 psia under actual storage conditions shall be equipped with submerged fill pipes or organic vapor recovery systems. [OAC 252:100-37]

12. Displaced vapors from the 15,000 gallon MEK tank (Tank T-3), and the 10,000 gallon 1,1,2 TCA tank (Tank T-2) shall be ducted to existing carbon adsorption units or an equivalent control device. Displaced vapors from the 4300-gallon RCRA solvent tank (Tank T-1) may be vented through a conservation vent or ducted to the existing carbon adsorption units or an equivalent control device, according to the option of the permittee. [OAC 252:100-37, 63.703(c)]

13. Except as stated otherwise, the equipment of EUG-5 shall be controlled through use of one or more total enclosures, with all total enclosures vented to a thermal oxidizer which provides an overall HAP control efficiency of ≥ 95 percent or which results in an outlet HAP concentration of no greater than 20 parts per million by volume (ppmv) by compound on a dry basis [63.703(c)(1), 63.703(c)(2)]

Section H, Subsection 1

1. Preapproved activities that are authorized by this permit include:

d) EUG-5-alternative control devices as allowed by MACT

- Use of alternative control devices, or
- Combined usage of low-VOC coatings and a control device
