217/782-2113

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT - REVISED -- NSPS SOURCE

PERMITTEE

Reichhold, Inc.
Attn: Stan Ogrodnick, Global Environmental Manager
6350 East Collins Road
Morris, Illinois 60450

Application No.: 96030183 I.D. No.: 063806AAA
Applicant's Designation: Date Received: January 7, 2010
Subject: Chemical Manufacturing, Latex Emulsions, Polyester Resins
Date Issued: April 1, 2010 Expiration Date: May 6, 2013
Location: 6350 East Collins Road, Morris, Grundy County, 60450

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

One (1) 53 mmBtu/hour Natural Gas-Fired Boiler (Boiler #1);
One (1) 75 mmBtu/hour Natural Gas/No. 6 Residual Oil-Fired Boiler (Boiler #2);
One (1) 28.7 mmBtu/hour Natural Gas-Fired Hot Oil Heater;
One (1) 40,000 Gallon Phthalic Anhydride Storage Tank (S-580);
Two (2) 40,000 Gallon Styrene Storage Tanks (S-585 and S-587);
One (1) 46,500 Gallon Maleic Anhydride Storage (Tank S-589);
Eight (8) Polyester Resin Manufacturing Reactors (R-1 through R-7, and M-1) Controlled by Thermal Oxidizer (H102) or Thermal Oxidizer/Glycol Recovery System or Secondary Thermal Oxidizer (HTO) or Temporary Mobile Emergency Thermal Oxidizer (H-TEMP);
Seven (7) Polyester Thin Tanks (TT-1 through TT-7) Controlled by Thermal Oxidizer (H102) or Secondary Thermal Oxidizer (HTO) or Temporary Mobile Emergency Thermal Oxidizer (H-TEMP);
Nine (9) Polyester Blend Tanks (BT-1 through BT-5, and BT-8 through BT-11) Controlled by Thermal Oxidizer (H102) or Secondary Thermal Oxidizer (HTO) or Temporary Mobile Emergency Thermal Oxidizer (H-TEMP);
One (1) Polyester Blend Tank (BT-16) Controlled by Thermal Oxidizer (H102) or Secondary Thermal Oxidizer (HTO) or Temporary Mobile Emergency Thermal Oxidizer (H-TEMP);
Four (4) 50,000 Gallon Polyester Base Resin Storage Tanks (TK-4 through TK-7) Controlled by Controlled by Thermal Oxidizer (H102) or Secondary Thermal Oxidizer (HTO) or Temporary Mobile Emergency Thermal Oxidizer (H-TEMP);
Two (2) 23,000 Gallon Polyester Base Resin Storage Tanks (TK-11 and TK-12) Controlled by Thermal Oxidizer (H102) or Secondary Thermal Oxidizer (HTO) or Temporary Mobile Emergency Thermal Oxidizer (H-TEMP);
Two (2) 27,000 Gallon Polyester Base Resin Storage Tanks (TK-13 and TK-14) Controlled by Thermal Oxidizer (H102) or Secondary Thermal Oxidizer (HTO) or Temporary Mobile Emergency Thermal Oxidizer (H-TEMP);
Six (6) 25,000 Gallon Polyester Base Resin Storage Tanks (TK-17 through TK-22) Controlled by Thermal Oxidizer (H102) or Secondary Thermal Oxidizer (HTO) or Temporary Mobile Emergency Thermal Oxidizer (H-TEMP);

Six (6) Polyester Truck Loading Bays (TL-1 through TL-6) Controlled by Thermal Oxidizer (H102) or Secondary Thermal Oxidizer (HTO) or Temporary Mobile Emergency Thermal Oxidizer (H-TEMP);
Two (2) Polyester Drum Loading Lines (DL-1 through DL-2) Controlled by Thermal Oxidizer (H102) or Secondary Thermal Oxidizer (HTO) or Temporary Mobile Emergency Thermal Oxidizer (H-TEMP);
Two (2) 32,000 Gallon Vinyl Acetate Storage Tanks (S-501 and S-514);
Three (3) 20,000 Gallon Butyl Acrylate Storage Tanks (S-502, S-504, and S-517);
Two (2) 20,000 Gallon Methyl Methacrylate Storage Tanks (S-503 and S-516);
One (1) 9,500 Gallon Styrene Emulsion Storage Tank (S-552);
Three (3) Emulsion Monomer Tanks (M-501 through M-503) Controlled by Forbo's Regenerative Thermal Oxidizer (PUR-RTO);
Two (2) Synthetic Resin Emulsion Reactors (R-101 and R-102) Controlled by Forbo's Regenerative Thermal Oxidizer (PUR-RTO);
Two (2) Synthetic Resin Emulsion Cool Down Tanks (M-505 and M-510) Controlled by Forbo's Regenerative Thermal Oxidizer (PUR-RTO);
One (1) Polyurethane Dispersion Amine Tank (T-217);
One (1) Polyurethane Dispersion Tank (T-407A) Vented to the Rotoclone Scrubber (WSC-510) for Industrial Hygiene Purposes and controlled by Forbo's Regenerative Thermal Oxidizer (PUR-RTO);
One (1) Polyurethane Dispersion Manufacturing Reactor (R-307) vented to the Rotoclone Scrubber (WSC-510) for Industrial Hygiene Purposes and controlled by Forbo's Regenerative Thermal Oxidizer (PUR-RTO);
One (1) Styrene Based Polyurethane Resin and Polystyrene Solution Production Reactor (T-417) controlled by Forbo's Regenerative Thermal Oxidizer (PUR-RTO);
Polyurethane Dispersion Manufacturing Tank Truck and Drum Loading;
Thirteen (13) Catalyst Tanks (M-1 through M-13);
One (1) Polyester Dump Tank (M-15);
One (1) Caustic Tank (M-508)
Three (3) Surfactant Tanks (M-556, M557, and M-558);
One (1) 2-Ethyl Hexyl Acrylate Storage Tank (S-515);
Six (6) Glycol Storage Tanks (S-581 through S-584, S-586, and S-590);
One (1) DCPD Storage Tank (S-588);
Two (2) Fumed Silica Storage Silos (S-591 and S-592);
One (1) Isophthalic Acid Storage Silo (S-593);
One (1) Terephthalic Anhydride Storage Silo (S-594);
Two (2) Isocyanates Storage Tanks (T-171 and T-172);
Two (2) Polyol Storage Tanks (T-173 and T-174);
Four (4) Polyurethane Finished Goods Storage Tanks (T-501 through T-504);
One (1) Polyurethane Foam Over Tank (T-601);
Two (2) N-Methyl Pyrrolidinone (NMP) Storage Tanks (T-152 and T-153);
One (1) 900 HP Diesel-Powered Emergency Generator; and
One (1) 290 HP Diesel-Powered Emergency Pump

as described in 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:

i. To limit emissions from the source to less than major source thresholds, (i.e., to less than 100 tons/year for Nitrogen Oxides

(NO_x), Sulfur Dioxide (SO_2), and Volatile Organic Material (VOM), 10 tons/year for any single HAP and 25 tons/year of any combination of such HAPs). 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.

ii. To establish federally enforceable production and operating limitations, which restrict a potential to emit to less than 10 tons/year for any individual Hazardous Air Pollutant (HAP), and 25 tons/year of any combination of such HAPs so that the source is not subject to the requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Miscellaneous Organic Chemical Manufacturing, 40 CFR 63 Subpart FFFF.

iii. To establish federally enforceable Emission Reduction Market System (ERMS) provisions, including baseline emissions, allotment for each seasonal allotment period, identification of any units deemed to be insignificant activities for the purposes of the ERMS, emissions calculation methodologies, and provisions addressing all other applicable requirements of 35 Ill. Adm. Code Part 205, which are described in Attachment B.

b. For purposes of this FESOP, Reichhold, Inc. is considered a single source with Forbo Adhesives LLC (Forbo), I.D. No. 063806AAL, located at 6352 East Collins Road, Morris. The source has elected to obtain separate FESOPs for these locations.

c. Prior to the initial issuance of this permit, a draft of this permit has undergone a public notice and comment period.

d. This permit supersedes all operating permits issued for this location.

2a. The Natural Gas-Fired Hot Oil Heater is subject to the New Source Performance Standard (NSPS) for Small Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60 Subparts A and Dc. The Illinois EPA is administering NSPS in Illinois on behalf of the United States EPA under a delegation agreement.

b. Pursuant to 40 CFR 60.11(d), at all times, including periods of startup, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Illinois EPA or USEPA which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.

3a. Pursuant to 35 Ill. Adm. Code 212.123(a), no person shall cause or allow the emission of smoke or other particulate matter, with an opacity greater than 30 percent, into the atmosphere from any emission

unit other than those emission units subject to 35 Ill. Adm. Code 212.122.

b. Pursuant to 35 Ill. Adm. Code 212.123(b), the emission of smoke or other particulate matter from any such emission unit may have an opacity greater than 30 percent but not greater than 60 percent for a period or periods aggregating 8 minutes in any 60 minute period provided that such opaque emissions permitted during any 60 minute period shall occur from only one such emission unit located within a 305 m (1000 ft) radius from the center point of any other such emission unit owned or operated by such person, and provided further that such opaque emissions permitted from each such emission unit shall be limited to 3 times in any 24 hour period.

c. Pursuant to 35 Ill. Adm. Code 212.206, no person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period to exceed 0.15 kg of particulate matter per MW-hour of actual heat input from any fuel combustion emission unit using liquid fuel exclusively (0.10 lbs/mmBtu).

d. Pursuant to 35 Ill. Adm. Code 212.301, no person shall cause or allow the emission of fugitive particulate matter from any process, including any material handling or storage activity, that is visible by an observer looking generally toward the zenith at a point beyond the property line of the source.

e. Pursuant to 35 Ill. Adm. Code 212.321(a), no person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit which, either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced on or after April 14, 1972, at a source or premises, exceeds the allowable emission rates specified in 35 Ill. Adm. Code 212.321(c).

4a. Pursuant to 35 Ill. Adm. Code 214.122(b), no person shall cause or allow the emission of sulfur dioxide into the atmosphere in any one hour period from any new fuel combustion source with actual heat input smaller than, or equal to, 73.2 MW (250 mmBtu/hour), burning liquid fuel exclusively:

i. To exceed 1.55 kg of sulfur dioxide per MW-hour of actual heat input when residential fuel oil is burned (0.8 lbs/mmBtu); and

ii. To exceed 0.46 kg of sulfur dioxide per MW-hour of actual heat input when distillate fuel oil is burned (0.3 lbs/mmBtu).

b. Pursuant to 35 Ill. Adm. Code 214.301, except as further provided by 35 Ill. Adm. Code Part 214, no person shall cause or allow the emission of sulfur dioxide into the atmosphere from any process emission unit to excess 2,000 ppm.

c. Pursuant to 35 Ill. Adm. Code 214.304 the emissions from the burning of fuel at process emission units located in the Chicago or St. Louis

(Illinois) major metropolitan areas shall comply with applicable 35 Ill. Adm. Code Part 214 Subparts B through F (i.e., 35 Ill. Adm. Code 214.122(b)(2)).

5. Pursuant to 35 Ill. Adm. Code 216.121, no person shall cause or allow the emission of carbon monoxide (CO) into the atmosphere from any fuel combustion emission source with actual heat input greater than 2.9 MW (10 mmBtu/hour) to exceed 200 ppm, corrected to 50 percent excess air.

6a. Pursuant to 35 Ill. Adm. Code 218.122(a), no person shall cause or allow the discharge of more than 3.6 kg/hour (8 lbs/hour) of organic material into the atmosphere during the loading of any organic material from the aggregate loading pipes of any loading facility having through-put of greater than 151 cubic meters per day (40,000 gallons/day) into any railroad tank car, tank truck or trailer unless such loading facility is equipped with submerged loading pipes, submerged fill, or a device that is equally effective in controlling emissions and is approved by the Illinois EPA according to the provisions of 35 Ill. Adm. Code 201.

b. Pursuant to 35 Ill. Adm. Code 218.122(b), no person shall cause or allow the loading of any organic material into any stationary tank having a storage capacity of greater than 946 liters (250 gallons), unless such tank is equipped with a permanent submerged loading pipe, submerged fill, or an equivalent device approved by the Illinois EPA according to the provisions of 35 Ill. Adm. Code 201 or unless such tank is a pressure tank as described in Section 218.121(a) or is fitted with a recovery system as described in 35 Ill. Adm. Code 218.121(b)(2).

c. Pursuant to 35 Ill. Adm. Code 218.301, no person shall cause or allow the discharge of more than 3.6 kg/hour (8 lbs/hour) of organic material into the atmosphere from any emission source, except as provided in 35 Ill. Adm. Code 218.302, 218.303, 218.304 and the following exception: If no odor nuisance exists the limitation of 35 Ill. Adm. Code 218 Subpart G: Use of Organic Material, shall apply only to photochemically reactive material.

d. Pursuant to 35 Ill. Adm. Code 218.302, emissions of organic material in excess of those permitted by 35 Ill. Adm. Code 218.301 are allowable if such emissions are controlled by one of the following methods:

   i. Flame, thermal or catalytic incineration so as either to reduce such emissions to 10 ppm equivalent methane (molecular weight 16) or less, or to convert 85 percent of the hydrocarbons to carbon dioxide and water; or

   ii. A vapor recovery system which adsorbs and/or condenses at least 85 percent of the total uncontrolled organic material that would otherwise be emitted to the atmosphere.

e. Pursuant to 35 Ill. Adm. Code 218.500(a)(1), the control requirements set forth in 35 Ill. Adm. Code 218.501 shall apply to process vents associated with batch operations at sources identified by any of the

following four-digit standard industrial classification ("SIC") codes, as defined in the 1987 edition of the Federal Standard Industrial Classification Manual: SIC 2821, 2833, 2834, 2861, 2865, 2869, and 2879.

f. Pursuant to 35 Ill. Adm. Code 218.501(a), every owner or operator of a single unit operation with an average flow rate, as determined in accordance with 35 Ill. Adm. Code 218.502(b), below the flow rate value calculated by the applicability equations contained in 35 Ill. Adm. Code 218.500(e), shall reduce uncontrolled VOM emissions from such single unit operation by an overall efficiency, on average, at least 90 percent, or 20 ppmv, per batch cycle.

g. Pursuant to 35 Ill. Adm. Code 218.501(b) every owner or operator of a batch process train with an average flow rate, as determined in accordance with 35 Ill. Adm. Code 218.502(b)(2), below the flow rate value calculated by the applicability equations contained in 35 Ill. Adm. Code 218.500(e), shall reduce uncontrolled VOM emissions from such batch process train by an overall efficiency, on average, of at least 90 percent, or 20 ppmv, per batch cycle. For purposes of demonstrating compliance with the emission limitations set forth in 35 Ill. Adm. Code 218.501, any control device meeting the criteria in 35 Ill. Adm. Code 218.501(c) shall be deemed to achieve a control efficiency of 90 percent, or 20 ppmv, per batch cycle, as applicable.

7. This permit is issued based on the source not being subject to the NSPS for Volatile Organic Compound (VOC) Emissions from the Polymer Manufacturing Industry, 40 CFR 60 Subpart DDD. Pursuant to 40 CFR 60.560(a), the provisions of 40 CFR 60 Subpart DDD apply to affected facilities involved in the manufacture of polypropylene, polyethylene, polystyrene, or poly (ethylene terephthalate) as defined in 40 CFR 60.561.

8a. This permit is issued based upon the source not being subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Miscellaneous Organic Chemical Manufacturing, 40 CFR 63 Subpart FFFF. This is consequence of the federally enforceable production and operating limitations, which restrict the potential to emit to less than 10 tons/year for any individual Hazardous Air Pollutant (HAP), and 25 tons/year of any combination of such HAPs.

b. This permit is issued based upon the source not being subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Chemical Manufacturing Area Sources, 40 CFR 63 Subpart VVVVVV because the source does not use as feedstocks, generate as byproducts, or produce as products any of the hazardous air pollutants (HAP) listed in Table 1 to 40 CFR 63 Subpart VVVVVV.

9. Pursuant to 35 Ill. Adm. Code 212.314, 35 Ill. Adm. Code 212.301 shall not apply and spraying pursuant to 35 Ill. Adm. Code 212.304 through 212.310 and 35 Ill. Adm. Code 212.312 shall not be required when the wind speed is greater than 40.2 km/hour (25 mph). Determination of wind speed for the purposes of this rule shall be by a one-hour average

or hourly recorded value at the nearest official station of the U.S. Weather Bureau or by wind speed instruments operated on the site. In cases where the duration of operations subject to this rule is less than one hour, wind speed may be averaged over the duration of the operations on the basis of on-site wind speed instrument measurements.

10a. Pursuant to 35 Ill. Adm. Code 218.119, the limitations of 35 Ill. Adm. Code 218.120 shall apply to all storage containers of volatile organic liquid (VOL) with a maximum true vapor pressure of 0.5 psia or greater in any stationary tank, reservoir, or other container of 151 cubic meters (40,000 gallons) capacity or greater.

b. Pursuant to 35 Ill. Adm. Code 218.122(c) if no odor nuisance exists the limitations of 35 Ill. Adm. Code 218.122 shall only apply to the loading of VOL with a vapor pressure of 17.24 kPa (2.5 psia) or greater at 294.3°K (70°F).

c. The source is not subject to 35 IAC 218 Subpart Q (Leaks from Synthetic Organic Chemical and Polymer Manufacturing Plants). 35 IAC 218 Subpart Q, does not apply because none of the synthetic organic chemicals listed in Appendix A of 35 Ill. Adm. Code Part 218 are manufactured at this source.

d. Pursuant to 35 Ill. Adm. Code 218.500(c), the following single unit operations and batch process trains are subject to 35 Ill. Adm. Code 218 Subpart V but are considered to be de minimis and are, therefore, exempt from the control requirements of 35 Ill. Adm. Code 218.501. However, the recordkeeping and reporting requirements in 35 Ill. Adm. Code 218.505 shall apply to such de minimis single unit operations and batch process trains:

i. Within a batch operation, any single unit operation with uncontrolled total annual mass emissions of less than or equal to 500 lbs/year of VOM. Such single unit operations are also excluded from the calculation of the total annual mass emissions for a batch process train. If the uncontrolled total annual mass emissions from such exempt single unit operation exceed 500 lbs/year of VOM in any subsequent year, the source shall calculate applicability in accordance with 35 Ill. Adm. Code 218.500(d) for both the individual single unit operation and the batch process train containing the single unit operation; and

ii. Any batch process train containing process vents that have, in the aggregate, uncontrolled total annual mass emissions, as determined in accordance with 35 Ill. Adm. Code 218.502(a), of less than 30,000 lbs/year of VOM for all products manufactured in such batch process train.

e. Pursuant to 35 Ill. Adm. Code Part 218.500(d), the applicability equations in 35 Ill. Adm. Code 218.500(e), which require the calculation of uncontrolled total annual mass emissions and flow rate value, shall be used to determine whether a single unit operation or a batch process train is subject to the control requirements set forth in

35 Ill. Adm. Code 218.501. The applicability equation shall be applied to the following:

i. Any single unit operation with uncontrolled total annual mass emissions that exceed 500 lb/yr and with a VOM concentration greater than 500 ppmv. In this individual determination, no applicability analysis shall be performed for any single unit operation with a VOM concentration of less than or equal to 500 ppmv; and

ii. Any batch process train containing process vents which, in the aggregate, have uncontrolled total annual mass emissions of 30,000 lb/yr or more of VOM from all products manufactured in the batch process train. Any single unit operation with uncontrolled total annual mass emissions exceeding 500 lb/yr, regardless of VOM concentration, shall be included in the aggregate applicability analysis.

f. This permit is issued based on the source not being subject to the control requirements of 35 Ill. Adm. Code 218 Subpart RR (Miscellaneous Organic Chemical Manufacturing Processes). The VOM emissions from the source's process emission units not regulated by 35 Ill. Adm. Code Subparts B, E, F, H, Q, R, S, T, V, X, Y, Z or BB do not exceed the thresholds specified in 35 Ill. Adm. Code 218.960(a)(1)(A) and 35 Ill. Adm. Code 218.960(b)(1)(A) and (B).

11. Pursuant to 35 Ill. Adm. Code 218.107, the operation of any natural gas fired afterburner and capture system used to comply with 35 Ill. Adm. Code Part 218 is not required during the period of November 1 of any year to April 1 of the following year provided that the operation of such devices is not required for purposes of occupational safety or health, or for the control of toxic substances, odor nuisances, or other regulated pollutants.

12a. In the event that the operation of this source results in an odor nuisance, the Permittee shall take appropriate and necessary actions to minimize odors, including but not limited to, changes in raw material or installation of controls, in order to eliminate the nuisance.

b. The thermal oxidizers combustion chambers shall be preheated to at least the manufacturer's recommended temperature but no less than the temperature at which compliance was demonstrated in the most recent compliance test, or 1400°F in the absence of a compliance test. This temperature shall be maintained during operation.

c. The Permittee shall, in accordance with the manufacturer(s) and/or vendor(s) recommendations, perform periodic maintenance on the pollution control equipment covered under this permit such that the pollution control equipment be kept in proper working condition and not cause a violation of the Illinois Environmental Protection Act or regulations promulgated therein.

d. Boiler #1 and the Hot Oil Heater shall only be operated with natural gas as the fuel. The use of any other fuel in Boiler #1 and the Hot Oil Heater requires that the Permittee first obtain a construction permit from the Illinois EPA and then perform stack testing to verify compliance with all applicable requirements.

e. Boiler #2 shall only be operated with natural gas or Number 6 fuel-oil as the fuel. The use of any other fuel in Boiler #2 requires that the Permittee first obtain a construction permit from the Illinois EPA and then perform stack testing to verify compliance with all applicable requirements.

f. The emergency generator and the emergency pump shall only be operated with distillate fuel oil as the fuel. The use of any other fuel in the emergency generator or the emergency pump requires that the Permittee first obtain a construction permit from the Illinois EPA and then perform stack testing to verify compliance with all applicable requirements.

g. The Permittee shall not keep, store or use distillate fuel oil (Grades No. 1 and 2) with a sulfur content greater than the larger of the following two values:

   i. 0.28 weight percent; or

   ii. The wt. percent given by the formula: Maximum wt. percent sulfur = (0.000015) x (Gross heating value of oil, Btu/lb).

h. The Permittee shall not keep, store or use Residual fuel oil (Grade No. 4, 5 and 6) with a sulfur content greater than that given by the formula:

   Maximum Wt percent sulfur = (0.00005) x (Gross heating value of oil, Btu/lb).

i. Organic liquid by-products or waste materials shall not be used in any fuel combustion emission source without written approval from the Illinois EPA.

j. The Illinois EPA shall be allowed to sample all fuels stored at the above location.

13a. Emissions and operation of the Polyester Manufacturing plant shall not exceed the following limits:

   i. Polyester Plant Production:

Item of Equipment	Resin Production (lbs/Month)	(lbs/Year)
Reactors R-1 through R-7 and Polyester Thin Tanks TT-1 through TT-7	20,833,333	250,000,000
Polyester Blend Tanks BT-1 through BT-5, and BT-8 through BT-11	22,000,000	264,000,000

Polyester Blend Tank BT-16	4,867,000	58,400,000
Polyester Base Resin Storage Tanks TK-1 - TK-7, TK-11 - TK-14, and TK-17 - TK-22	2,340,421 Gallons	28,085,057 Gallons
Polyester Truck Loading Bays TL-1 through TL-6	23,000,000	230,000,000
Polyester Drum Loading Lines DL-1 through DL-2	1,916,667	20,000,000

ii. Emissions of volatile organic material (VOM) from the polyester plant (including: reactors, tanks, truck loading stations and automated drum filling line) controlled by the thermal oxidizer shall not exceed the following:

	VOM to Oxidizer		VOM Emissions		
Item of Equipment	(Tons/Mo)	(Tons/Yr)	(lbs/Hr)	(Tons/Mo)	(Tons/Yr)
Polyester Plant	61.75	739	3.4	1.23	14.77

iii. Emissions of hazardous air pollutants (HAP) from the polyester plant (including: reactors, tanks, truck loading stations and automated drum filling line) controlled by the thermal oxidizer shall not exceed the following:

Ethylene Glycol		Maleic Anhydride		Methyl Methacrylate		Phthalic Anhydride		Styrene	
(lb/mo)	(Ton/Yr)	(lb/mo)	(Ton/Yr)	(lb/mo)	(Ton/Yr)	(lb/mo)	(Ton/Yr)	(lb/mo)	(Ton/Yr)
221.67	1.33	43.33	0.26	8.33	0.05	1.67	0.01	71.67	0.43

iv. This permit is issued based on negligible emissions of particulate matters (PM/PM_{10}) from the silos. For this purpose negligible emissions shall not exceed 0.11 lb/hour and 0.50 tons/year.

v. These limits are based on maximum production of the polyester plant operating at 8,760 hours/year, with 98% destruction efficiency from the thermal oxidizer. The limitations of Conditions 11(a)(ii) and (iv) were established in Construction Permit 03040054 pursuant to 35 Ill. Adm. Code Part 203. These limits ensure that the construction/modification addressed in the aforementioned Construction Permit does not constitute a new major source or major modification pursuant to Title I of the Clean Air Act, specifically 35 Ill. Adm. Code Part 203.

b. Emissions and operation of the tanks shall not exceed the following limits:

	Throughput		VOM Emissions		Single HAP Emissions	
Tank	(Gal/Mo)	(Gal/Yr)	(lbs/Mo)	(Tons/Yr)	(lbs/Mo)	(Tons/Yr)
S-501	300,000	3,000,000	192	0.96	192	0.96*
S-502	350,000	3,500,000	22	0.11	--	--
S-503	50,000	500,000	80	0.40	80	0.40**
S-504	350,000	3,500,000	22	0.11	--	--
S-514	300,000	3,000,000	192	0.96	192	0.96*

S-516	50,000	500,000	80	0.40	80	0.40**
S-517	350,000	3,500,000	22	0.11	--	--
S-552	346,750	3,467,500	16	0.08	16	0.08***
S-580	376,215	3,762,147	362	1.81	362	1.81
S-585/587	1,299,200	12,992,000	260	1.30	260	1.30*****
S-589	546,320	5,463,200	140	0.70	140	0.70******
			Totals:	9.27		6.21

* Vinyl Acetate (Total = 1.92 Tons/Year).

** Methyl Methacrylate (Total = 0.40 Tons/Year).

*** Styrene (Total = 0.08 Tons/Year).

**** Phthalic Anhydride (Total = 1.81 Tons/Year).

***** Styrene (Total = 1.30 Tons/Year).

****** Maleic Anhydride (Total = 0.70 Tons/Year).

These limits are based on the maximum throughput of the above tanks, the material stored in the tanks, and the maximum annual emission rate determined by the use of the TANKS Program (Version 4.09D, February 5, 2008).

c. Emissions and operation of the Emulsion Plant shall not exceed the following limits:

i. Emulsion Plant Production:

Item of Equipment	Emulsion Production (Batches/Month)	(Batches/Year)
Monomer Tanks M-501, M-502, and M-503 (Controlled)	293	2,928
Monomer Tank M-501 (Uncontrolled)	13	64
Monomer Tank M-502 (Uncontrolled)	13	64
Monomer Tank M-503 (Uncontrolled)	13	64
Reactors R-101 and R-102 (Controlled)	195	1,952
Reactor R-101 (Uncontrolled)	19	96
Reactor R-102 (Uncontrolled)	19	96
Cool Down Tanks M-505 and M-510 (Controlled)	195	1,952
Cool Down Tank M-505 (Uncontrolled)	19	96
Cool Down Tank M-510 (Uncontrolled)	19	96
Production Reactor T-417	1,212,000 lb	12,120,000 lb

ii. VOM Emissions from the Emulsion Plant:

Item of Equipment	VOM Emissions (lbs/Batch)	(lbs/Month)	(Tons/Year)
M-501*, M-502*, and M-503*	0.42	124	0.62
M-501**	9.38	120	0.30

M-502**	9.38	120	0.30
M-503**	9.38	120	0.30
R-101* and R-102*	0.33	64	0.32
R-101**	8.54	164	0.41
R-102**	8.54	164	0.41
M-505* and M-510*	1.14	222	1.11
M-505**	25.83	496	1.24
M-510**	25.83	496	1.24
T-417*	0.20 lb/Ton	122	0.61
		Total:	6.86

* Emissions controlled by Forbo's RTO.

** Uncontrolled emissions.

iii. HAP emissions from the Emulsion Plant:

Item of Equipment	Acetaldehyde (lb/Mo)	Acetaldehyde (T/Yr)	Methyl Methacrylate (lb/Mo)	Methyl Methacrylate (T/Yr)	Styrene (lb/Mo)	Styrene (T/Yr)	Vinyl Acetate (lb/Mo)	Vinyl Acetate (T/Yr)
M-501*, M-502*,and M-503*	--	--	14	0.07	2	0.01	108	0.54
M-501**	--	0	6	0.03	6	0.03	96	0.24
M-502**	--	0	6	0.03	6	0.03	96	0.24
M-503**	--	0	6	0.03	6	0.03	96	0.24
R-101* and R-102*	10	0.05	4	0.02	2	0.01	48	0.24
R-101**	20	0.05	8	0.02	20	0.10	96	0.24
R-102**	20	0.05	8	0.02	20	0.10	96	0.24
M-505* and M-510*	32	0.16	2	0.01	4	0.02	184	0.92
M-505**	60	0.15	4	0.01	72	0.18	360	0.90
M-510**	60	0.15	4	0.01	72	0.18	360	0.90
T-417*		----		----	86	0.43		----
Totals:		0.61		0.25		1.12		4.70

* Emissions controlled by Forbo's RTO.

** Uncontrolled emissions.

iv. These limits are based on maximum production of the emulsion plant with 95% overall control efficiency from the thermal oxidizer.

d. Emissions and operation of the Polyurethane Dispersion process shall not exceed the following limits:

i. Polyurethane Dispersion Production:

Item of Equipment	Polyurethane Dispersion (lbs/Month)	Polyurethane Dispersion (Lbs/Year)
Polyurethane Dispersion Amine Tank	203,440	2,034,400

T-217		
Polyurethane Dispersion Tank T-407A	2,824,000	28,240,000
Polyurethane Dispersion Manufacturing Reactor R-307	1,594,200	15,942,000
Finished Product Loading (Tank Truck and Drum)	5,834,000	58,340,000

ii. Emissions from Polyurethane Dispersion Production:

Item of Equipment	VOM (lb/Mo)	VOM (T/Yr)	Hydrazine (lb/Mo)	Hydrazine (T/Yr)	Styrene (lb/Mo)	Styrene (T/Yr)	TDI (lb/Mo)	TDI (T/Yr)	Triethylamine (lb/Mo)	Triethylamine (T/Yr)
T-217	2	0.01	2	0.01	----	----	----	----	----	----
R-307* & T-407A*	2,650	17.78	4	0.02	----	----	2	0.01	22	0.11
Finished Product Loading	246	1.23	----	----	122	0.61	----	----	4	0.02
Totals		19.02				0.61		0.01		0.13

These limits are based on the maximum production rates and the maximum emissions from dispersion tank and the reactor.

iii. The above limitations were established in Construction Permits 94110091, 96090041, 07040046, and 10010004 pursuant to 35 Ill. Adm. Code Part 203. These limits ensure that the construction/modification addressed in the aforementioned Construction Permits does not constitute a new major source or major modification pursuant to Title I of the Clean Air Act, specifically 35 Ill. Adm. Code Part 203.

e. Emissions and operation of the Boiler #1, Boiler #2 hot oil heater, and thermal oxidizers (combined) shall not exceed the following limits:

i. Natural Gas Usage:

Emission Unit	Firing Rate (mmBtu/hour)	(mmscf/Month)	(mmscf/Year)
Boiler #1	53.0	38.690	464.28
Boiler #2	75.0	54.750	657.00
Hot Oil Heater	28.7	20.951	251.41
Thermal Oxidizers H-102, HTO, and H-TEMP	5.0 (H-102) 6.0 (HTO) 4 @ 15.0 (H-Temp)	3.650	43.80

ii. No. 6 Fuel Oil Usage:

Emission Unit	Firing Rate (mmBtu/Hour)	(Gal/Month)	(Gal/Year)
Boiler #2	75.0	50,000	500,000

iii. Emissions from the combustion of Natural Gas and No 6. Fuel Oil:

Item of Equipment	CO (T/Mo)	CO (T/Yr)	NO_x (T/Mo)	NO_x (T/Yr)	PM (T/Mo)	PM (T/Yr)	SO_2 (T/Mo)	SO_2 (T/Yr)	VOM (T/Mo)	VOM (T/Yr)
Boiler #1	1.62	19.50	1.93	23.21	0.15	1.76	0.01	0.14	0.11	1.28
Boiler #2	2.30	27.59	2.74	32.85	0.25	2.50	3.74	37.36	0.15	1.81
Hot Oil Heater H-102, HTO, & H-TEMP	0.88	10.56	1.05	12.57	0.08	0.96	0.01	0.08	0.06	0.69
	0.15	1.84	1.65	2.19	0.01	0.16	0.01	0.01	0.01	0.12
Totals		59.49		70.82		5.38		37.59		3.90

These limits are based on the maximum total firing rates, maximum operating hours (8,760 hours/year), the maximum No. 6 fuel oil usage and a heat content of 150,000 Btu/gal for No. 6 fuel oil, standard emission factors (Tables 1.4-1, 1.4-2, 1.3-1, and 1.3-3, AP-42, Fifth Edition, Volume I, Supplement D, July 1998).

f. Emissions and operation of the Diesel-Powered Generator and the Diesel-Powered Emergency Pump shall not exceed the following limits:

i. The total hours of operation for the generator or pump shall not exceed 500 hours per year (each).

ii. Emissions from Generator:

Pollutant	(lbs/hp-Hour)	Emissions (lbs/Hour)	(Tons/Year)
CO	0.0055	4.95	1.24
NO_x	0.024	21.6	5.40
PM	0.0007	0.63	0.16
SO_2	0.00809 S	2.04	0.51
VOM	0.000642	0.63	0.16

These limits represent emission limits based on the engine's rated capacity of 900 hp, maximum operation of 500 hours per year, and standard emission factors (Table 3.4-1, AP-42, Volume I, Fifth Edition, Supplement B, October 1996). S indicates that the weight % of sulfur in the oil should be multiplied by the value given.

iii. Emissions from Emergency Pump:

Pollutant	(lbs/hp-Hour)	Emissions (lbs/Hour)	(Tons/Year)
CO	0.00668	1.94	0.48
NO_x	0.031	8.99	2.25
PM	0.0022	0.64	0.16
SO_2	0.00205	0.59	0.15
VOM	0.0025141	0.73	0.18

These limits represent emission limits based on the rated capacity of 290 hp of the engine, maximum operation of 500 hours per year for each engine and standard emission factors (Table

3.3-1, AP-42, Volume I, Fifth Edition, Supplement B, October 1996).

g. This permit is issued based on negligible emissions of particulate matter and volatile organic materials from Catalyst Tanks M-1 through M-13; Polyester Dump Tank M-15; Caustic Tanks M-508, M556, M-557 and M-558; 2-Ethyle Hexyl Acrylate Storage Tank S-515; Glycol Storage Tanks S-581 through S-584, S-586 and S-590; DCPD Storage Tank S-588, Fumed Silica Storage Silos S-591 and S-592; Isophalaic Acid Storage Silo S-593; Terephthalic Anhydride Storage Silo S-594, Isocyanates Storage Tanks T-171 and T-172; Polyol Storage Tanks T-173 and T-174; Polyurethane Finished Goods Storage Tanks T-501 through T-504; Polyurethane Foam Over Tank T-601; and N-Methyl Pyrrolidinone (NMP) Storage Tanks T-152 and T-153. For this purpose emissions of each pollutant from each emission unit shall not exceed nominal emission rate of 0.1 lb/hour and 0.44 ton/year.

h. Compliance with the annual limits of this permit shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 months total).

12a. Pursuant to 35 Ill. Adm. Code 201.282, every emission source or air pollution control equipment shall be subject to the following testing requirements for the purpose of determining the nature and quantities of specified air contaminant emissions and for the purpose of determining ground level and ambient air concentrations of such air contaminants:

i. Testing by Owner or Operator. The Illinois EPA may require the owner or operator of the emission source or air pollution control equipment to conduct such tests in accordance with procedures adopted by the Illinois EPA, at such reasonable times as may be specified by the Illinois EPA and at the expense of the owner or operator of the emission source or air pollution control equipment. The Illinois EPA may adopt procedures detailing methods of testing and formats for reporting results of testing. Such procedures and revisions thereto, shall not become effective until filed with the Secretary of State, as required by the APA Act. All such tests shall be made by or under the direction of a person qualified by training and/or experience in the field of air pollution testing. The Illinois EPA shall have the right to observe all aspects of such tests.

ii. Testing by the Illinois EPA. The Illinois EPA shall have the right to conduct such tests at any time at its own expense. Upon request of the Illinois EPA, the owner or operator of the emission source or air pollution control equipment shall provide, without charge to the Illinois EPA, necessary holes in stacks or ducts and other safe and proper testing facilities, including scaffolding, but excluding instruments and sensing devices, as may be necessary.

b. Testing required by Conditions 13 and 14 shall be performed upon a written request from the Illinois EPA by a qualified independent testing service.

13. Pursuant to 35 Ill. Adm. Code 212.110(c), upon a written notification by the Illinois EPA, the owner or operator of a particulate matter emission unit subject to 35 Ill. Adm. Code Part 212 shall conduct the applicable testing for particulate matter emissions, opacity, or visible emissions at such person's own expense, to demonstrate compliance. Such test results shall be submitted to the Illinois EPA within thirty (30) days after conducting the test unless an alternative time for submittal is agreed to by the Illinois EPA.

14a. Pursuant to 35 Ill. Adm. Code 218.503(a), upon the Illinois EPA's request, the owner or operator of a batch operation shall conduct testing to demonstrate compliance with 35 Ill. Adm. Code 218.501. The owner or operator shall, at its own expense, conduct such tests in accordance with the applicable test methods and procedures specified in 35 Ill. Adm. Code 218.503(d), (e), and (f).

b. Pursuant to 35 Ill. Adm. Code 218.503(d), the owner or operator of a batch operation that is exempt from the control requirements of 35 Ill. Adm. Code 218.501 shall demonstrate, upon the Illinois EPA's request, the absence of oversized gas moving equipment in any manifold. Gas moving equipment shall be considered oversized if it exceeds the maximum requirements of the exhaust flow rate by more than 30 percent.

c. Pursuant to 35 Ill. Adm. Code 218.503(e), for the purpose of demonstrating compliance with the control requirements in 35 Ill. Adm. Code 218.501, the batch operation shall be run at representative operating conditions and flow rates during any performance test.

d. Pursuant to 35 Ill. Adm. Code 218.503(f), the following methods in 40 CFR 60, Appendix A, incorporated by reference at 35 Ill. Adm. Code 218.112, shall be used to demonstrate compliance with the reduction efficiency requirement set forth in 35 Ill. Adm. Code 218.501:

i. Method 1 or 1A, as appropriate, for selection of the sampling sites if the flow measuring device is not a rotameter. The control device inlet sampling site for determination of vent stream VOM composition reduction efficiency shall be prior to the control device and after the control device;

ii. Method 2, 2A, 2C, or 2D, as appropriate, for determination of gas stream volumetric flow rate flow measurements, which shall be taken continuously. No traverse is necessary when the flow measuring device is an ultrasonic probe;

iii. Method 25A or Method 18, if applicable, to determine the concentration of VOM in the control device inlet and outlet;

A. The sampling time for each run shall be as follows:

I. For batch cycles less than eight hours in length, readings shall be taken continuously over the entire length of the batch cycle with a maximum of 15-minute intervals between measurements if using Method 25A. If using Method 18, readings shall be taken continuously with a maximum of 15-minute intervals between measurements throughout the batch cycle unless it becomes necessary to change the impinger train, in which case a 30-minute interval shall not be exceeded.

II. For batch cycles of eight hours and greater in length, the owner or operator may either test in accordance with the test procedures defined in 35 Ill. Adm. Code 218.503(f)(3)(A)(i) or the owner or operator may elect to perform tests, pursuant to either Method 25A or Method 18, only during those portions of each emission event which define the emission profile of each emission event occurring within the batch cycle. For each emission event of less than four hours in duration, the owner or operator shall test continuously over the entire emission event as set forth in 35 Ill. Adm. Code 218.503(f)(3)(A)(i). For each emission event of greater than four hours in duration, the owner or operator shall elect either to perform a minimum of three one hour test runs during the emission event or shall test continuously over the entire emission event within each single unit operation in the batch process train. To demonstrate that the portion of the emission event to be tested define the emission profile for the emission event, the owner or operator electing to rely on this option shall develop an emission profile for the entire emission event. Such emission profile shall be based upon either process knowledge or test data collected. Examples of information that could constitute process knowledge include, but are not limited to, calculations based on material balances and process stoichiometry. Previous test results may be used provided such results are still relevant to the current process vent stream conditions.

III. For purposes of 35 Ill. Adm. Code 218.503(f)(3), the term “emission event” shall be defined as a discrete period of venting that is associated with a single unit operation. For example, a displacement of vapor resulting from the charging of a single unit operation with VOM will result in a discrete emission event that will last through the duration of the charge and will have an average flow rate equal to the rate of the charge. The expulsion of expanded single unit operation vapor space when the vessel is

heated is also an emission event. Both of these examples of emission events and others may occur in the same single unit operation during the course of the batch cycle. If the flow rate measurement for any emission event is zero, in accordance with 35 Ill. Adm. Code 218.503(f)(2), then such event is not an emission event for purposes of 35 Ill. Adm. Code 218.503.

B. The mass emission rate from the process vent or inlet to the control device shall be determined by combining concentration and flow rate measurements taken simultaneously at sampling sites selected in accordance with 35 Ill. Adm. Code 218.503(f)(1) throughout the batch cycle;

C. The mass emission rate from the control device outlet shall be obtained by combining concentration and flow rate measurements taken simultaneously at sampling sites selected in accordance with 35 Ill. Adm. Code 218.503(f)(1) throughout the batch cycle; and

D. The efficiency of the control device shall be determined by integrating the mass emission rates obtained in 35 Ill. Adm. Code 218.503(f)(3)(B) and (f)(3)(C), over the time of the batch cycle and dividing the difference in inlet and outlet mass flow totals by the inlet mass flow total.

e. Pursuant to 35 Ill. Adm. Code 218.503(i), in the absence of a request by the Illinois EPA to conduct performance testing in accordance with the provisions of 35 Ill. Adm. Code 218.503, a source may demonstrate compliance by the use of engineering estimates or process stoichiometry.

15. Pursuant to 35 Ill. Adm. Code 218.504(a)(2), every owner or operator using an afterburner to comply with 35 Ill. Adm. Code 218.501 shall install, calibrate, maintain and operate, according to manufacturer's specifications, temperature monitoring devices with an accuracy of $\pm$ 1 percent of the temperature being measured expressed in degrees Celsius, equipped with continuous recorders. Where an afterburner other than a catalytic afterburner is used, a temperature monitoring device shall be installed in the combustion chamber.

16a. Pursuant to 40 CFR 60.7(b), any owner or operator subject to the provisions of 40 CFR Part 60 shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected facility; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative.

b. Pursuant to 40 CFR 60.48c(g)(1), except as provided under 40 CFR 60.48c(g)(2) and (g)(3), the owner or operator of each affected

facility shall record and maintain records of the amounts of each fuel combusted during each operating day.

c. Pursuant to 40 CFR 60.48c(i), all records required under 40 CFR 60.48 shall be maintained by the owner or operator of the affected facility for a period of two years following the date of such record.

17. Pursuant to 40 CFR 63.10(b)(3), if an owner or operator determines that his or her stationary source that emits (or has the potential to emit, without considering controls) one or more hazardous air pollutants regulated by any standard established pursuant to Section 112(d) or (f) of the Clean Air Act, and that stationary source is in the source category regulated by the relevant standard, but that source is not subject to the relevant standard (or other requirement established under 40 CFR Part 63) because of limitations on the source's potential to emit or an exclusion, the owner or operator must keep a record of the applicability determination on site at the source for a period of 5 years after the determination, or until the source changes its operations to become an affected source, whichever comes first. The record of the applicability determination must be signed by the person making the determination and include an analysis (or other information) that demonstrates why the owner or operator believes the source is unaffected (e.g., because the source is an area source). The analysis (or other information) must be sufficiently detailed to allow the USEPA and/or Illinois EPA to make a finding about the source's applicability status with regard to the relevant standard or other requirement. If relevant, the analysis must be performed in accordance with requirements established in relevant subparts of 40 CFR Part 63 for this purpose for particular categories of stationary sources. If relevant, the analysis should be performed in accordance with USEPA guidance materials published to assist sources in making applicability determinations under Section 112 of the Clean Air Act, if any. The requirements to determine applicability of a standard under 40 CFR 63.1(b)(3) and to record the results of that determination under 40 CFR 63.10(b)(3) shall not by themselves create an obligation for the owner or operator to obtain a Title V permit.

18. Pursuant to 35 Ill. Adm. Code 212.110(e), the owner or operator of an emission unit subject to 35 Ill. Adm. Code Part 212 shall retain records of all tests which are performed. These records shall be retained for at least three (3) years after the date a test is performed.

19a. Pursuant to 35 Ill. Adm. Code 218.129(f), the owner or operator of each storage vessel specified 35 Ill. Adm. Code 218.119 shall maintain readily accessible records of the dimension of the storage vessel and an analysis of the capacity of the storage vessel. Each storage vessel with a design capacity less than 40,000 gallons is subject to no provisions of this Part other than those required by maintaining readily accessible records of the dimensions of the storage vessel and analysis of the capacity of the storage vessel.

b. Pursuant to 35 Ill. Adm. Code 218.505(a), every owner or operator of a de minimis single unit operation or batch process train exempt under 35 Ill. Adm. Code 218.500(c)(1) or (c)(2) shall keep records of the uncontrolled total annual mass emissions for any de minimis single unit operation or batch process train, as applicable, and documentation verifying these values or measurements. The documentation shall include the engineering calculations, any measurements made in accordance with 35 Ill. Adm. Code 218.503, and the potential or permitted number of batch cycles per year, or, in the alternative, total production as represented in the source's operating permit.

c. Pursuant to 35 Ill. Adm. Code 218.505(b), every owner or operator of a single unit operation exempt under 35 Ill. Adm. Code 218.500 (b) (3) or (d) shall keep the following records:

    i. The uncontrolled total annual mass emissions and documentation verifying these values or measurements. The documentation shall include any engineering calculations, any measurements made in accordance with 35 Ill. Adm. Code 218.503, and the potential or permitted number of batch cycles per year, or, in the alternative, total production as represented in the source's operating permit.

    ii. The average flow rate in scfm and documentation verifying this value.

d. Pursuant to 35 Ill. Adm. Code 218.505(c)(1), every owner or operator of a batch operation subject to the control requirements of 35 Ill. Adm. Code 218.501 shall keep records of the following parameters required to be monitored under 35 Ill. Adm. Code 218.504. If using a thermal or catalytic afterburner to comply with 35 Ill. Adm. Code 218.501, records indicating the average combustion chamber temperature of the afterburner (or the average temperature upstream and downstream of the catalyst bed for a catalytic afterburner), measured continuously and averaged over the same time period as the performance test;

e. Pursuant to 35 Ill. Adm. Code 218.505(d), every owner or operator of a single unit operation claiming a vent stream concentration exemption level, as set forth in 35 Ill. Adm. Code 218.500(d)(1), shall maintain records to indicate the vent stream concentration is less than or equal to 500 ppmv.

f. Pursuant to 35 Ill. Adm. Code 218.505(h), every owner or operator of a batch operation required to keep records under 35 Ill. Adm. Code 218.505 shall maintain such records at the source for a minimum period of three years and shall make all such records available to the Illinois EPA upon request.

20a. The Permittee shall maintain records of the following items so as to demonstrate compliance with the conditions of this permit:

    i. Records addressing use of good operating practices for the pollution control equipment covered under this permit:

A. Records for periodic inspection of the pollution control equipment covered under this permit with date, individual performing the inspection, and nature of inspection; and

B. Records for prompt repair of defects, with identification and description of defect, effect on emissions, date identified, date repaired, and nature of repair.

ii. For each storage tank and each loading rack:

A. Names and identification number of materials transferred and/or stored;

B. Material throughput (gallons/month, gallons/year); and

C. Material true vapor pressure.

iii. Total polyester resin production (lbs/month and lbs/year);

iv. Emulsion plant tank and reactor production rates (batches/month (each unit) and batches/year (each unit));

v. Polyurethane dispersion tank, reactor, and truck/drum product loading production rates (lbs/month (each unit) and lbs/year (each unit);

vii. Natural gas consumption for the boilers, hot oil heater, and thermal oxidizers ($mmft^3$/month and $mmft^3$/year);

viii. No. 6 residual fuel oil consumption for Boiler #2 (gallons/month and gallons/year);

ix. The sulfur content of the residual fuel oil used in Boiler #2 provided by the supplier fuel oil (weight %);

x. The sulfur content of the distillate fuel oil used in diesel-powered generator and the diesel-powered emergency pump provided by the supplier fuel oil (weight %);

xi. The hours of operation of diesel-powered generator and the diesel-powered emergency pump (hours/month (each) and hours/year(each)); and

xii. Monthly and annual CO, NO_x, PM, SO_2 VOM and HAP emissions from the source with supporting calculations (tons/month, tons/year).

b. All records and logs required by this permit shall be retained at a readily accessible location at the source for at least five (5) years from the date of entry and shall be made available for inspection and copying by the Illinois EPA or USEPA upon request. Any records retained in an electronic format (e.g., computer storage device) shall be capable of being retrieved and printed on paper during normal source

office hours so as to be able to respond to an Illinois EPA or USEPA request for records during the course of a source inspection.

21. Pursuant to 35 Ill. Adm. Code 212.110(d), a person planning to conduct testing for particulate matter emissions to demonstrate compliance shall give written notice to the Illinois EPA of that intent. Such notification shall be given at least thirty (30) days prior to the initiation of the test unless a shorter period is agreed to by the Illinois EPA. Such notification shall state the specific test methods from 35 Ill. Adm. Code 212.110 that will be used.

22a. Pursuant to 35 Ill. Adm. Code 218.505(d), every owner or operator of a single unit operation claiming a vent stream concentration exemption level, as set forth in 35 Ill. Adm. Code 218.500(d)(1), shall notify the Illinois EPA in writing if the vent stream concentration at any time equals or exceeds 500 ppmv, within 60 days after such event. Such notification shall include a copy of all records of such event.

b. Pursuant to 35 Ill. Adm. Code 218.505(g), the owner or operator of a de minimis single unit operation or batch process train exempt from the control requirements of 35 Ill. Adm. Code 218.500(c) shall notify the Illinois EPA in writing if the uncontrolled total annual mass emissions from such de minimis single unit operation or batch process train exceed the threshold in 35 Ill. Adm. Code 218.500(c)(1) or (c)(2), respectively, within 60 days after the event occurs. Such notification shall include a copy of all records of such event.

c. Pursuant to 35 Ill. Adm. Code 218.990, upon request by the Illinois EPA, the owner or operator of an emission unit which is exempt from the requirements of 35 Ill. Adm. Code 218 Subparts PP, QQ, RR, TT or 35 Ill. Adm. Code 218.208(b) shall submit records to the Illinois EPA within 30 calendar days from the date of the request that document that the emission unit is exempt from those requirements.

23a. If there is an exceedance of or a deviation from the requirements of this permit as determined by the record 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 or deviation. 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 deviation and efforts to reduce emissions and future occurrences.

b. Two (2) copies of required reports and notifications 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

It should be noted that the provisions of 35 Ill. Adm. Code 201 Subpart F (CAAPP Permits), specifically 35 Ill. Adm. Code 201.210 (Categories of Insignificant Activities or Emission Levels) does not apply to sources excluded from Section 39.5 of the Illinois Environmental Protection Act (Act) under Section 39.5(1.1) of the Act.

It should also be noted that the cooling tower is exempt from permitting pursuant to 35 Ill. Adm. Code 201.146(vv)(2).

It should be noted that this permit has been revised so as to include the operation of the equipment described in Construction Permit 10010004.

If you have any questions on this, please call Jocelyn Stakely at 217/782-2113.

Edwin C. Bakowski, P.E.
Manager, Permit Section
Division of Air Pollution Control

Date Signed: _____

ECB:JRS:jws

cc: Illinois EPA, FOS Region 1
Lotus Notes

Attachment A - Emissions Summary

This attachment provides a summary of the maximum emissions from the Chemical Manufacturing, Latex Emulsions, Polyester 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 which results in maximum emissions from such a plant. The resulting maximum emissions are below the levels, (e.g., 100 tons per year of NO_x, SO_2, and VOM, 10 tons per year for a single HAP, and 25 tons per year for any combination of such 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.

a. Reichhold, Inc., 6350 East Collins Road, Morris (I.D. #063806AAA):

	E M I S S I O N S (Tons/Year)						
						HAPs	
Item of Equipment	CO	NO_x	PM	SO_2	VOM	Single*	Combined
Polyester Plant					14.77	1.33	2.08
Tank S-501					0.96	0.96	0.96
Tank S-502					0.11	----	----
Tank S-503					0.40	0.40	0.40
Tank S-504					0.11	----	----
Tank S-514					0.96	0.96	0.96
Tank S-516					0.40	0.40	0.40
Tank S-517					0.11	----	----
Tank S-552					0.08	0.08	0.08
Tank S-580					1.81	1.81	1.81
Tanks S-585/587					1.30	1.30	1.30
Tank S-589					0.70	0.70	0.70
Tanks M-501, M-502, and M-503 (Controlled)					0.62	0.54	0.62
Tank M-501 (Uncontrolled)					0.30	0.24	0.30
Tank M-502 (Uncontrolled)					0.30	0.24	0.30
Tank M-503 (Uncontrolled)					0.30	0.24	0.30
Reactors R-101 and R-102 (Controlled)					0.32	0.24	0.32
Reactor R-101 (Uncontrolled)					0.41	0.24	0.41
Reactor R-102 (Uncontrolled)					0.41	0.24	0.41
Tanks M-505 and M-510 (Controlled)					1.11	0.92	1.11
Tank M-505 (Uncontrolled)					1.24	0.90	1.24
Tank M-510 (Uncontrolled)					1.24	0.90	1.24
Reactor T-417					0.61	0.43	0.43

	E M I S S I O N S (Tons/Year)						
						HAPs	
Item of Equipment	CO	NO_x	PM	SO_2	VOM	Single*	Combined
Tank T-217					0.01	0.01	0.01
Tank T-407A and Reactor R-307					17.78	0.11	0.14
Finished Product Loading					1.23	0.61	0.63
Boiler #1	19.50	23.21	1.76	0.14	1.28		
Boiler #2	27.59	32.85	2.50	37.36	1.81		
Hot Oil Heater	10.56	12.57	0.96	0.08	0.69		
Thermal Oxidizers H-102, HTO, and H-TEMP	1.84	2.19	0.16	0.01	0.12		
Diesel-Powered Generator	1.24	5.40	0.16	0.51	0.16		
Diesel-Powered Emergency Pump	0.48	2.25	0.16	0.15	0.18		
Fugitive/Miscellaneous Emissions					4.54	2.13	3.87
Tanks M-1 - M-13					5.72		
Tank M-15					0.44		
Tank M-508					0.44		
Tanks M-556, M-557 and M-558					1.32		
Storage Tank S-515					0.44		
Storage Tanks S-581 - S-584, S-586 & S-590					2.64		
Storage Tank S-588					0.44		
Storage Silos S-591 and S-592			0.88				
Storage Silo S-593			0.44				
Storage Silo S-594			0.44				
Storage Tanks T-171 and T-172					0.88		
Storage Tanks T-173 and T-174					0.88		
Storage Tanks T-501 - T-504					1.76		
Tank T-601					0.44		
Storage Tanks T-152 and T-153					0.88		
Subtotals:	61.21	78.47	7.46	38.25	72.21	8.75**	20.02

* Highest single HAP from each item of equipment.

** Total for Vinyl Acetate.

b. Forbo Adhesives LLC, 6352 East Collins Rd., Morris (I.D. #063806AAL):

	E M I S S I O N S (Tons/Year)						
						HAPs	
Item of Equipment	CO	NO_x	PM	SO_2	VOM	Single*	Combined
Reactor/Blend Tank T-204/R-301					0.28	0.27	0.28
Reactor/Blend Tank T-205/R-302					0.37	0.36	0.36
Reactor/Blend Tank T-206/R-303					0.19	0.18	0.18
Reactor/Blend Tank T-207/R-304					0.36	0.35	0.35
Reactor R-305					0.79	0.77	0.77
Dirty Solvent Tank					0.14	0.14	0.14
Clean Solvent Tank					0.02	0.02	0.02
Regenerative Thermal Oxidizer	0.42	0.50	0.04	0.01	0.03	----	----
Solvent Distillation Vessel					0.44	----	----
MDI Storage Tanks T-203 and T-204a					0.88	----	----
Overflow Tank T-212					0.44	----	----
Polyol Storage Tanks T-201 and T-202	----	----	----	----	0.88	----	----
Subtotals:	0.42	0.50	0.04	0.01	4.82	2.09*	2.10

* Highest single HAP (Toluene).

c. Collocated Source Totals:

	E M I S S I O N S (Tons/Year)						
						HAPs	
Plant	CO	NO_x	PM	SO_2	VOM	Single*	Combined
Reichhold, Inc. (063806AAA)	61.21	78.47	7.46	38.25	72.21	8.75*	20.02
Forbo Adhesives LLC (063806AAL)	0.42	0.50	0.04	0.01	4.82	2.09**	2.10
Total:	61.63	78.47	7.50	38.26	77.03	8.75*	22.12

* Vinyl Acetate.

** Toluene.

Attachment B – Emissions Reduction Market System (ERMS)

1. Description of ERMS

The ERMS is a "cap and trade" market system for major stationary sources located in the Chicago ozone nonattainment area. It is designed to reduce VOM emissions from stationary sources to contribute to reasonable further progress toward attainment, as required by Section 182(c) of the Clean Air Act.

The ERMS addresses VOM emissions during a seasonal allotment period from May 1 through September 30. Participating sources must hold "allotment trading units" (ATUs) for their actual seasonal VOM emissions. Each year participating sources are issued ATUs based on allotments set in the sources' permits. These allotments are established from historical VOM emissions or "baseline emissions" lowered to provide the emissions reductions from stationary sources required for reasonable further progress.

By December 31 of each year, the end of the reconciliation period following the seasonal allotment period, each source shall have sufficient ATUs in its transaction account to cover its actual VOM emissions during the preceding season. A transaction account's balance as of December 31 will include any valid ATU transfer agreements entered into as of December 31 of the given year, provided such agreements are promptly submitted to the Illinois EPA for entry into the transaction account database. The Illinois EPA will then retire ATUs in sources' transaction accounts in amounts equivalent to their seasonal emissions. When a source does not appear to have sufficient ATUs in its transaction account, the Illinois EPA will issue a notice to the source to begin the process for Emissions Excursion Compensation.

In addition to receiving ATUs pursuant to their allotments, participating sources may also obtain ATUs from the market, including ATUs bought from other participating sources and general participants in the ERMS that hold ATUs (35 Ill. Adm. Code 205.630) and ATUs issued by the Illinois EPA as a consequence of VOM emissions reductions from an Emissions Reduction Generator or an Intersector Transaction (35 Ill. Adm. Code 205.500 and 35 Ill. Adm. Code 205.510). During the reconciliation period, sources may also buy ATUs from a secondary reserve of ATUs managed by the Illinois EPA, the "Alternative Compliance Market Account" (ACMA) (35 Ill. Adm. Code 205.710). Sources may also transfer or sell the ATUs that they hold to other sources or participants (35 Ill. Adm. Code 205.630).

2. Applicability

This source is considered a "participating source" for purposes of the ERMS, 35 Ill. Adm. Code Part 205.

3. Obligation to Hold Allotment Trading Units (ATUs)

a. Pursuant to 35 Ill. Adm. Code 205.150(c)(1) and 35 Ill. Adm. Code 205.720, and as further addressed by Condition 8 of this Attachment, as of December 31 of each year, this source shall hold ATUs in its account in an amount not less than the ATU equivalent of its VOM emissions during the preceding seasonal allotment period (May 1 - September 30), not including VOM emissions from the following, or the source shall be subject to "emissions excursion compensation," as described in Condition 5 of this Attachment.

i. VOM emissions from emission units that the Illinois EPA determines would qualify as insignificant activities under 35 Ill. Adm. Code 201.Subpart F if the source were a CAAPP source and for which a statement to this effect is contained in the FESOP for a participating or new participating source are exempt from the requirements of 35 Ill. Adm. Code Part 205, in accordance with 35 Ill. Adm. Code 205.220(b);

ii. Excess VOM emissions associated with startup, malfunction, or breakdown of an emission unit for sources permitted to operate during startup, malfunction or breakdown pursuant to 35 Ill. Adm. Code 201.262, in accordance with 35 Ill. Adm. Code 205.225;

iii. Excess VOM emissions to the extent allowed by a Variance, Consent Order, or Compliance Schedule, in accordance with 35 Ill. Adm. Code 205.320(e)(3);

iv. Excess VOM emissions that are a consequence of an emergency as approved by the Illinois EPA, pursuant to 35 Ill. Adm. Code 205.750; and

v. VOM emissions from certain new and modified emission units as addressed by Condition 8(b) of this Attachment, if applicable, in accordance with 35 Ill. Adm. Code 205.320(f).

b. Notwithstanding the above condition, in accordance with 35 Ill. Adm. Code 205.150(c)(2), if a source commences operation of a major modification, pursuant to 35 Ill. Adm. Code Part 203, the source shall hold ATUs in an amount not less than 1.3 times its seasonal VOM emissions attributable to such major modification during the seasonal allotment period, determined in accordance with the construction permit for such major modification or applicable provisions of this permit.

4. Market Transactions

a. The source shall apply to the Illinois EPA for and obtain authorization for a Transaction Account prior to conducting any

market transactions, as specified at 35 Ill. Adm. Code 205.610(a).

b. The Permittee shall promptly submit to the Illinois EPA any revisions to the information submitted for its Transaction Account, pursuant to 35 Ill. Adm. Code 205.610(b).

c. The source shall have at least one account officer designated for its Transaction Account, pursuant to 35 Ill. Adm. Code 205.620(a).

d. Any transfer of ATUs to or from the source from another source or general participant must be authorized by a qualified Account Officer designated by the source and approved by the Illinois EPA, in accordance with 35 Ill. Adm. Code 205.620, and the transfer must be submitted to the Illinois EPA for entry into the Transaction Account database.

5. Emissions Excursion Compensation

Pursuant to 35 Ill. Adm. Code 205.720, if the source fails to hold ATUs in accordance with Condition 3 of this Attachment, it shall provide emissions excursion compensation in accordance with the following:

a. Upon receipt of an Excursion Compensation Notice issued by the Illinois EPA, the source shall purchase ATUs from the ACMA in the amount specified by the notice, as follows:

i. The purchase of ATUs shall be in an amount equivalent to 1.2 times the emissions excursion; or

ii. If the source had an emissions excursion for the seasonal allotment period immediately before the period for the present emissions excursion, the source shall purchase ATUs in an amount equivalent to 1.5 times the emissions excursion.

b. If requested in accordance with paragraph (c) below or in the event that the ACMA balance is not adequate to cover the total emissions excursion amount, the Illinois EPA will deduct ATUs equivalent to the specified amount or any remaining portion thereof from the ATUs to be issued to the source for the next seasonal allotment period.

c. Pursuant to 35 Ill. Adm. Code 205.720(c), within 15 days after receipt of an Excursion Compensation Notice, the owner or operator may request that ATUs equivalent to the amount specified be deducted from the source’s next seasonal allotment by the Illinois EPA, rather than purchased from the ACMA.

6. Quantification of Seasonal VOM Emissions

a. The methods and procedures specified in this permit for determining VOM emissions and compliance with VOM emission limitations shall be used for determining seasonal VOM emissions for purposes of the ERMS, with the following exceptions [35 Ill. Adm. Code 205.315(b)]:

No exceptions

b. The Permittee shall report emergency conditions at the source to the Illinois EPA, in accordance with 35 Ill. Adm. Code 205.750, if the Permittee intends to deduct VOM emissions in excess of the technology-based emission rates normally achieved that are attributable to the emergency from the source's seasonal VOM emissions for purposes of the ERMS. These reports shall include the information specified by 35 Ill. Adm. Code 205.750(a), and shall be submitted in accordance with the following:

i. An initial emergency conditions report within two days after the time when such excess emissions occurred due to the emergency; and

ii. A final emergency conditions report, if needed to supplement the initial report, within 10 days after the conclusion of the emergency.

7. Annual Account Reporting

a. For each year in which the source is operational, the Permittee shall submit, as a component of its Annual Emissions Report, seasonal VOM emissions information to the Illinois EPA for the seasonal allotment period. This report shall include the following information [35 Ill. Adm. Code 205.300]:

i. Actual seasonal emissions of VOM from the source;

ii. A description of the methods and practices used to determine VOM emissions, as required by this permit, including any supporting documentation and calculations;

iii. A detailed description of any monitoring methods that differ from the methods specified in this permit, as provided in 35 Ill. Adm. Code 205.337;

iv. If a source has experienced an emergency, as provided in 35 Ill. Adm. Code 205.750, the report shall reference the associated emergency conditions report that has been approved by the Illinois EPA;

v. If a source's baseline emissions have been adjusted due to a Variance, Consent Order, or CAAPP permit Compliance Schedule, as provided for in 35 Ill. Adm. Code 205.320(e)(3), the report shall provide documentation quantifying the excess VOM emissions during the season that

were allowed by the Variance, Consent Order, or Compliance Schedule, in accordance with 35 Ill. Adm. Code 205.320(e)(3); and

vi. If a source is operating a new or modified emission unit for which three years of operational data is not yet available, as specified in 35 Ill. Adm. Code 205.320(f), the report shall specify seasonal VOM emissions attributable to the new emission unit or the modification of the emission unit.

b. This report shall be submitted by November 30 of each year, for the preceding seasonal allotment period.

8. Allotment of ATUs to the Source

a. i. The allotment of ATUs to this source (includiong both Reichhold, Inc., 6350 East Collins Road, Morris (I.D. #063806AAA) and Forbo Adhesives LLC, 6352 East Collins Road, Morris (I.D. #063806AAL)) is 130 ATUs per seasonal allotment period.

ii. This allotment of ATUs reflects the Illinois EPA's determination that the source's baseline emissions were 14.684 tons per season.

A. This determination includes the use of 2002 as a baseline season, the first season for which VOM emissions exceeded 10 tons.

iii. The source's allotment reflects 88% of the baseline emissions (12% reduction), except for the VOM emissions from specific emission units excluded from such reduction, pursuant to 35 Ill. Adm. Code 205.405, including units complying with MACT or using BAT, as identified in Condition 10 of this Attachment of this permit.

iv. ATUs will be issued to the source's Transaction Account by the Illinois EPA annually. These ATUs will be valid for the seasonal allotment period following issuance and, if not retired in this season, the next seasonal allotment period.

v. Condition 3(a) of this Attachment becomes effective beginning in the seasonal allotment period following the initial issuance of ATUs by the Illinois EPA into the Transaction Account for the source.

b. Contingent Allotments for New or Modified Emission Units

Not applicable.

c. Notwithstanding the above, part or all of the above ATUs will not be issued to the source in circumstances as set forth in 35 Ill. Adm. Code Part 205, including:

i. Transfer of ATUs by the source to another participant or the ACMA, in accordance with 35 Ill. Adm. Code 205.630;

ii. Deduction of ATUs as a consequence of emissions excursion compensation, in accordance with 35 Ill. Adm. Code 205.720; and

iii. Transfer of ATUs to the ACMA, as a consequence of shutdown of the source, in accordance with 35 Ill. Adm. Code 205.410.

9. Recordkeeping for ERMS

The Permittee shall maintain copies of the following documents as its Compliance Master File for purposes of the ERMS [35 Ill. Adm. Code 205.700(a)]:

a. Seasonal component of the Annual Emissions Report;

b. Information on actual VOM emissions, as recorded and as required by Condition 19(a)(vii) of this permit and Condition 6(a) of this Attachment; and

c. Any transfer agreements for the purchase or sale of ATUs and other documentation associated with the transfer of ATUs.

10. Exclusions from Further Reductions

a. VOM emissions from the following emission units shall be excluded from the VOM emissions reductions requirements specified in 35 Ill. Adm. Code 205.400(c) and (e) as long as such emission units continue to satisfy the following [35 Ill. Adm. Code 205.405(a)]:

i. Emission units that comply with any NESHAP or MACT standard promulgated pursuant to the Clean Air Act;

ii. Direct combustion emission units designed and used for comfort heating purposes, fuel combustion emission units, and internal combustion engines; and

iii. An emission unit for which a LAER demonstration has been approved by the Illinois EPA on or after November 15, 1990.

The source has demonstrated in its ERMS application and the Illinois EPA has determined that the following emission units qualify for exclusion from further reductions because they meet the criteria as indicated above [35 Ill. Adm. Code 205.405(a) and (c)]:

Boilers 1 and 2

b. VOM emissions from emission units using BAT for controlling VOM emissions shall not be subject to the VOM emissions reductions requirement specified in 35 Ill. Adm. Code 205.400(c) or (e) as long as such emission unit continues to use such BAT [35 Ill. Adm. Code 205.405(b)].

The source has demonstrated in its ERMS application and the Illinois EPA has determined that the following emission units qualify for exclusion from further reductions because these emission units use BAT for controlling VOM emissions as indicated above [35 Ill. Adm. Code 205.405(b) and (c)]:

None

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