

217/782-2113

CONSTRUCTION PERMIT

PERMITTEE

Engineered Polymer Solutions, Inc.
Attn: Plant Manager
1400 North State Street
Marengo, Illinois 60152

Application No.: 06100033

I.D. No.: 111065AAS

Applicant's Designation:

Date Received: October 12, 2006

Subject: Resin Manufacturing System

Date Issued: May 8, 2008

Location: 1400 North State Street, Marengo, McHenry County

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission source(s) and/or air pollution control equipment consisting of a new resin manufacturing system as described in the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

- 1a. This permit authorizes the following changes associated with the installation of new equipment that will be used as part of a new resin manufacturing system:
 - i. Installation of a new resin manufacturing system, consisting of reactor K-4 (the affected reactor) and associated feed tanks T-41, T-42, T-43, T-44, T-52, and T-53 and swing tank T-221, (the affected process tanks);
 - ii. Installation of four 25,400 gallon storage tanks T-217, T-218, T-219, and T-220, eight 7,500 gallon storage tanks T-222 through T-229, two 30,000 gallon storage tanks T-102, T-104, and one 9,200 gallon storage tank T-109 (new affected storage tanks).
 - iii. Conversion of existing storage tank T-102 to tank T-107 and existing tank T-104 to tank T-108 to store different materials (existing affected storage tanks).
- b. In conjunction with these changes, this permit also establishes limitations on operation and emissions of the source. The purpose of these limitations is to restrict the operation and emissions of the source so that it is not a major source of HAP emissions for purposes of 40 CFR 63, Subpart FFFF, National Emission Standards for Hazardous Air Pollutants (NESHAP) for Miscellaneous Organic Chemical Manufacturing, for which the compliance date for existing sources is May 10, 2008.

- 2a. The affected reactor and process tanks are each subject to 35 IAC 218.301, which provides that no person shall cause or allow the discharge of more than 8 lbs/hour of organic material into the atmosphere from any emission unit, provided, however that if no odor nuisance exists, this limitation shall apply only to photochemically reactive material and emissions in excess of 8 lbs/hour are allowable if emissions are controlled by at least 85%, as further provided by 35 IAC 218.302.
 - b. The affected units are subject to 35 IAC 212.321(b)(1), which provides that 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, either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced after April 14, 1972, at a source or premises, exceeds the allowable emission rates specified in 35 IAC 212.321(c) [35 IAC 212.321(a)].
 - c.
 - i. The new affected storage tanks are subject to New Source Performance Standards (NSPS), 40 CFR 60 Subpart Kb. The Illinois EPA is administering these standards in Illinois on behalf of the United States EPA under a delegation agreement.
 - ii. This permit is issued based on the affected storage tanks not being subject to the control requirements of the NSPS because the capacity of the tanks and the vapor pressure of stored material are below the thresholds for control.
 - d. This permit is issued based on the construction and operation of the affected units not triggering applicability of the Emissions Reduction Market System (ERMS), 35 IAC Part 205, because seasonal emissions of VOM are less than 10 tons.

Note: If seasonal VOM emissions were 10 tons or more, the Permittee would have to comply with the ERMS as a participating source including holding allotment trading units (ATUs) for the plant's VOM emissions during each seasonal allotment period, until and unless the source was excluded from compliance requirements of the ERMS by being subject to and complying with a 15 tons limitation on seasonal VOM emissions.
3. At all times, the Permittee shall maintain and operate all emission units at the plant, including associated emission control measures in a manner consistent with good air pollution control practice for minimizing emissions.
- 4a.
 - i. The affected reactor shall not be used for "high emission products" e.g., solvent based acrylic products.
 - ii. Production by the affected reactor shall not exceed 8,081,500 lbs per month and 80,815,000 lbs per year.
 - b.
 - i. Production by the plant shall not exceed the following limits:

Category of Resin	Throughput (pounds/year)
Vinyl Acrylics	21,816,500
Solvent Based Acrylics	18,556,000
MQ6	10,541,000

- ii. Total production of the plant shall not exceed 15,701,500 lbs /month and 157,015,000 lbs/year.
- c. Compliance with above annual limits and other annual limits in 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 month total).
- 5a. Emissions of VOM from the affected units, in total, shall not exceed 4.0 tons/month and 39 tons/year.
 - b. i. The emissions of Hazardous Air Pollutants (HAP) from the plant shall not equal or exceed 9.8 tons per year of any single HAP or 24.5 tons per year of any combination of such HAPs, or such lesser quantity as USEPA may establish by rule which would require the Permittee to obtain a Clean Air Act Permit Program 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 Clean Air Act Permit Program permit from the Illinois EPA.
 - ii. This permit is issued based on minimal emissions of HAPs from emission units at the plant other than manufacturing operations.
- c. Compliance with the above emission limits shall be determined in accordance with methodology approved or endorsed by USEPA's Emission Inventory Improvement Program (EIIP).
- 6a. Within 90 days of a written request from the Illinois EPA, the Permittee shall have the VOM and HAP emissions from the affected reactor and process tanks and the VOM control efficiency of the associated control devices measured by an independent testing service during conditions that are representative of maximum emissions.
- b. The following methods and procedures shall be used for testing of emissions, as further specified in 35 IAC 218.105: Refer to 40 CFR 60, Appendix A, for USEPA test methods.

Location of Sample Points:	USEPA Method 1
Gas Flow and Velocity:	USEPA Method 2
Flue Gas Weight:	USEPA Method 3
Moisture:	USEPA Method 4
Volatile Organic Material:	USEPA Method 25, 25A if outlet VOM cont. <50 ppmv as C Non CH ₄
Hazardous Air Pollutants	USEPA Method 17

- c. At least 60 days prior to the actual date of testing, a written test plan shall be submitted to the Illinois EPA for review. This plan shall describe the specific procedures for testing, including as a minimum:
 - i. The person(s) who will be performing sampling and analysis and their experience with similar tests.
 - ii. The specific conditions under which testing will be performed, including a discussion of why these conditions will be representative of maximum emissions and the means by which the operating parameters for the emission unit and any control equipment will be determined.
 - iii. The specific determinations of emissions and operation, which are intended to be made, including sampling and monitoring locations.
 - iv. The test method(s), which will be used, with the specific analysis method, if the method can be used with different analysis methods.
 - v. Any minor changes in standard methodology proposed to accommodate the specific circumstances of testing, with justification.
- d. The Illinois EPA shall be notified prior to these tests to enable the Illinois EPA to observe these tests. Notification of the expected date of testing shall be submitted a minimum of 30 days prior to the expected date. Notification of the actual date and expected time of testing shall be submitted a minimum of 5 working days prior to the actual date of the test. The Illinois EPA may at its discretion accept notifications with shorter advance notice provided that the Illinois EPA will not accept such notifications if it interferes with the Illinois EPA's ability to observe testing. [35 IAC 215.410(c)]
- e. Copies of the Final Report(s) for these tests shall be submitted to the Illinois EPA within 45 days after the test results are compiled and finalized. The Final Report shall include as a minimum:
 - i. A summary of results
 - ii. General information
 - iii. Description of test method(s), including description of sampling points, sampling train, analysis equipment, and test schedule
 - iv. Detailed description of test conditions, including:
 - A. Process information, i.e., mode(s) of operation and process rate; and

- B. Control equipment information, i.e., equipment condition and operating parameters during testing.
 - v. Data and calculations, including copies of all raw data sheets and records of laboratory analyses, sample calculations, and data on equipment calibration.
7. The Permittee shall install, operate and maintain a continuous monitoring device to record the temperature of the coolant supply to the condenser and the temperature of the exhaust to the atmosphere.
- 8a. The Permittee shall maintain files containing the following information for manufacturing operations at the plant:
- i. Factors used to determine VOM and HAP emissions associated with different categories of products, with supporting calculations and documentation. These records shall be updated as necessary to address changes in raw materials, processes, and product composition, etc., so as to accurately represent emissions associated with the production of different categories of products.
 - ii. Documentation that new affected storage tanks do not meet the thresholds for control under the NSPS.
- b. The Permittee shall maintain the following operational records for manufacturing operations:
- i. Operating logs, including detailed information describing any periods when emissions are higher than normal or emissions control measures are not fully implemented or effective.
 - ii. Inspection, maintenance, and repair logs.
 - iii. Detailed data for periods of malfunction or upset of the measures that control equipment including an estimate of the additional emissions attributable to such incident.
- c. The Permittee shall maintain monthly records of the following items for manufacturing operations:
- i. Production, by type (tons/month and tons/year).
 - ii. Combined emissions of each individual HAP and total HAPs (tons/month and tons/year), with supporting calculations.
 - iii. VOM emissions (tons/month and tons/year), with supporting calculations.
- d. The Permittee shall keep records of the following items for operations at the plant other than manufacturing operations:

Page 7

Please note that this permit includes operational and emission limits that restrict the source to operation as a minor source of HAP emissions. These limits, with any revisions and enhancements that are appropriate to maintain practical enforceability, must be included in an operating permit for the source to maintain status as a minor source of HAP emissions.

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

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

Date Signed: _____

ECB:KTH:jws

cc: Region 1