

217/782-2113

CONSTRUCTION PERMIT

PERMITTEE

Mapei Corporation
Attn: Monte Lee
530 Industrial Drive
West Chicago, Illinois 60185

Application No.: 09050027

I.D. No.: 043090ABL

Applicant's Designation: Storage Tanks

Date Received: May 18, 2009

Subject: Spray Dryer Upgrade

Date Issued:

Location: 530 Industrial Drive, West Chicago, DuPage County

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

Modification of the existing spray dryer system (EU10) controlled by primary and secondary dust collectors by installing a new 4 mmBtu/hr natural gas-fired air pre-heater to increase total dryer firing rate to 8 mmBtu/hr, new inlet fan, second high pressure pump, new secondary cyclones and new product transport pipes;

Modification of an existing 13,000 gallon storage tank (T-113) controlled by vapor return lines and carbon canister to store vinyl acetate; and

Modification of two (2) existing 7,250 gallon storage tanks (T-124A and T-124B) to store latex.

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

- 1a. This permit is issued based on the emission of Hazardous Air Pollutants (HAP) as listed in Section 112(g) of the Clean Air Act being less than 10 tons/year of any single HAP and 25 tons/year of any combination of such HAPs. As a result, this permit is issued based on the emissions of all HAPs from this source not triggering the requirements of Section 112(g) of the Clean Air Act.
- b. This permit is issued based on the modifications to the existing spray dryer system and the modifications to the three existing storage tanks not constituting a new major source or major modification pursuant to Title I of the Clean Air Act, specifically 35 Ill. Adm. Code Part 203, Major Stationary Sources Construction and Modification. The source has requested that the Illinois EPA establish emission limitations and other appropriate terms and conditions in this permit that limit the volatile organic material (VOM) emissions from the above-listed emission units below the levels that would trigger the applicability of these rules.

- c. Prior to issuance, a draft of this permit has undergone a public notice and comment period.
 - d. Operation of the equipment listed above is allowed under this permit until final action is taken on the Federally Enforceable State Operating Permit (FESOP) application for this source.
- 2a. 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 212.321(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).
3. Pursuant to 35 Ill. Adm. Code 214.301, no person shall cause or allow the emission of sulfur dioxide into the atmosphere from any process emission source to excess 2000 ppm.
- 4a. Pursuant to 35 Ill. Adm. Code 218.122(a), no person shall cause or allow the discharge of more than 3.6 kg/hr (8 lbs/hr) of organic material into the atmosphere during the loading of any organic material from the aggregate loading pipes of any loading area having through-put of greater than 151 cubic meters per day (40,000 gal/day) into any railroad tank car, tank truck or trailer unless such loading area is equipped with submerged loading pipes 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, and further processed consistent with 35 Ill. Adm. Code 218.108.
- 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 l (250 gal), unless such tank is equipped with a permanent submerged loading pipe 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 35 Ill. Adm. Code 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 218.142, no person shall cause or allow the discharge of more than 32.8 ml (2 cu in) of volatile organic liquid with vapor pressure of 17.24 kPa (2.5 psia) or greater at 294.3 K (70 F) into the atmosphere from any pump or compressor in any 15 minute period at standard conditions.
 - d. Pursuant to 35 Ill. Adm. Code 218.301, no person shall cause or allow the discharge of more than 3.6 kg/hr (8 lbs/hr) of organic material into the atmosphere from any emission unit, except as provided in 35 Ill. Adm. Code 218.302, 218.303, or 218.304 and the following exception: If no odor nuisance exists the limitation of 35 Ill. Adm. Code 218 Subpart G shall apply only to photochemically reactive material.
5. This permit is issued based on Storage Tanks T-113, T-124A, and T-124B not being subject to the New Source Performance Standard (NSPS) for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984, 40 CFR 60 Subpart Kb. Pursuant to 40 CFR 60.110b(a), except as provided in 40 CFR 60.110b(b), the affected facility to which 40 CFR 60 Subpart Dc applies is each storage vessel with a capacity greater than or equal to 75 cubic meters (m³) that is used to store volatile organic liquids (VOL) for which construction, reconstruction, or modification is commenced after July 23, 1984.
- 6a. This permit is issued based on Storage Tanks T-113, T-124A, and T-124B not being subject to 35 Ill. Adm. Code 218.120, Control Requirements for Storage Containers for VOL. 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 gal) 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 volatile organic liquid with a vapor pressure of 17.24 kPa (2.5 psia) or greater at 294.3°K (70°F).
 - c. This permit is issued based upon the spray dryer system not being subject to the requirements of 35 Ill. Adm. Code Part 218 Subpart QQ (Miscellaneous Formulation Manufacturing Process), Subpart RR (Miscellaneous Organic Chemical Manufacturing Processes), Subpart TT (Other Emission Units). This is a result of the federally enforceable production and operating limitations, which restrict the aggregate potential to emit for VOM of potentially affected emission units to less than 25 tons/year.
- 7a. 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 Permittee shall, in accordance with the manufacturer(s) and/or vendor(s) recommendations, perform periodic maintenance on the dust collectors associated with the spray dryer system and the vapor return lines and carbon canister associated with Tank T-113 such that the dust collectors, the vapor return lines, and carbon canister are kept in proper working condition and not cause a violation of the Illinois Environmental Protection Act or regulations promulgated therein.
 - c. The spray dryer burners shall only be operated with natural gas as the fuel. The use of any other fuel in the spray dryer 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.
- 8a. Emissions and operation of the spray dryer system shall not exceed the following limits:

Batch Rate		Raw Material Usage		Emissions			
<u>Batches/mo</u>	<u>Batches/yr</u>	<u>Tons/mo</u>	<u>Tons/yr</u>	PM*		VOM	
				<u>Tons/mo</u>	<u>Tons/yr</u>	<u>Tons/mo</u>	<u>Tons/yr</u>
42	412	1,310	13,100	0.65	6.48	2.08	20.78

*Includes PM from combustion emissions.

These limits are based on requested maximum throughputs and emission factors provided in the application (VOM = 0.001598 lb/lb of latex dried, PM = 0.000478 lb/lb of latex dried).

- b. Operation and emission of the natural gas fired spray dryer system combustion equipment shall not exceed the following limits:
 - i. Natural Gas Usage: 6.9 mmscf/month, 68.7 mmscf/year.
 - ii. Emissions from the combustion of natural gas:

<u>Pollutant</u>	Emission Factor	Emissions	
	<u>(lbs/mmscf)</u>	<u>(lb/Mo)</u>	<u>(Tons/Yr)</u>
Carbon Monoxide (CO)	84.0	0.3	2.89
Nitrogen Oxides (NO _x)	100.0	2.00	3.44
Sulfur Dioxide (SO ₂)	0.6	0.01	0.02
Volatile Organic Material (VOM)	5.5	0.11	0.2

These limits are based on the maximum fuel usage and standard emission factors (Tables 1.4-1 and 1.4-2, AP-42, Fifth Edition, Volume I, Supplement D, July 1998).

- c. Emissions and operation of the Raw Material Storage & Wet Finished Goods Storage/Packaging shall not exceed the following limits:

<u>Emission Unit/Activity</u>	<u>Throughput</u>		<u>VOM Emissions</u>	
	<u>Ton/mo</u>	<u>Ton/yr</u>	<u>Ton/mo</u>	<u>Tons/yr</u>
Raw Material Storage & Wet Finished Goods Storage/Packaging	15,650	156,500	0.25	2.46

These limits are based on the requested maximum throughput and use of the TANKS program (Version 4.09D, October 5, 2006).

9. The emissions of Hazardous Air Pollutants (HAPs) as listed in Section 112(b) of the Clean Air Act from this project shall not exceed 0.9 tons/month and 9.0 tons/year of any single HAP and 2.25 tons/month and 22.5 tons/year of any combination of such HAPs. As a result of this condition, this permit is issued based on the emissions of any HAP from this project not triggering the requirements of Section 112(g) of the Clean Air Act.
10. 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 month total).
- 11a. 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 Condition 12 shall be performed upon a written request from the Illinois EPA by a qualified independent testing service.
- 12. 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.
- 13. 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.
- 14. 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.
- 15. Pursuant to 35 Ill. Adm. Code 218.129(f), the owner or operator of each storage vessel specified in 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 35 Ill. Adm. Code Part 218 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.

- 16a. The Permittee shall maintain records of the following items so as to demonstrate compliance with the Conditions in this permit:
- i. Records addressing use of good operating practices for the dust collectors associated with the spray dryer system and the vapor return lines and carbon canister associated with Tank T-113:
 - A. Records for periodic inspection of the dust collectors associated with the spray dryer system and the vapor return lines and carbon canister associated with Tank T-113 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. Total natural gas usage for the two dryers (mmscf/month and mmscf/year);
 - iii. Throughput of raw material in the spray dryer system and the raw material storage and wet finished goods storage/packaging (tons/month and tons/year); and
 - iv. Monthly and annual CO, NO_x, PM, SO₂, VOM and HAP emissions from the Spray Dryer System, Tank T-113, and Tanks T-124A and T-124B, with supporting calculations (tons/month and 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.
17. 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.
18. 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.

19a. If there is an exceedance of or a deviation from the requirements of this permit as determined by the records required by this permit, the Permittee shall submit a report to the Illinois EPA's Compliance Section in Springfield, Illinois within 30 days after the exceedance 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

If you have any questions on this permit, please contact Bruce Beazly at 217/782-2113.

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

Date Signed: _____

ECB:BDB

cc: Region 1