



Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
(800) 451-6027
www.IN.gov/idem

TO: Interested Parties / Applicant
DATE: February 9, 2006
RE: Nanochem Technologies, LLC / 039-21967-00638
FROM: Paul Dubenetzky
Chief, Permits Branch
Office of Air Quality

Notice of Decision: Approval - Registration

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to IC 4-21.5-3-4(d) this order is effective when it is served. When served by U.S. mail, the order is effective three (3) calendar days from the mailing of this notice pursuant to IC 4-21.5-3-2(e).

If you wish to challenge this decision, IC 4-21.5-3-7 requires that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Room 1049, Indianapolis, IN 46204, **within eighteen (18) calendar days of the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

- (1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
- (2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
- (3) The date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

- (1) the name and address of the person making the request;
- (2) the interest of the person making the request;
- (3) identification of any persons represented by the person making the request;
- (4) the reasons, with particularity, for the request;
- (5) the issues, with particularity, proposed for considerations at any hearing; and
- (6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.

Enclosures
FN-REGIS.dot 1/10/05



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We make Indiana a cleaner, healthier place to live.

Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204-2251
(317) 232-8603
(800) 451-6027
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Mr. Jeff Schwartz
Nanochem Technologies, LLC
1179 Kent Street
Elkhart, Indiana 46514

February 9, 2006

Re: Registered Construction and Operation Status,
039-21967-00638

Dear Mr. Schwartz:

The application from Nanochem Technologies, LLC received on October 28, 2005, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-5.1, it has been determined that the following coating manufacturing plant to be located at 4715 Pine Creek Road, Elkhart, Indiana 46516 is classified as registered:

- (a) One (1) coating production process with a maximum production rate of 230,000 gallons of coatings per year and consisting of the following facilities:
 - (1) One (1) dry material handling process with a maximum throughput rate of 3,308 pounds of pigments per hour.
 - (2) Two (2) dispersers.
 - (3) Two (2) mills.
 - (4) One (1) mixer (identified as EU-M1) with 500 gallon capacity.
 - (5) One (1) mixer (identified as EU-M2) with 250 gallon capacity.
 - (6) One (1) filling line.
- (b) QC Room- Research & Development lab mixer and mill.
- (c) QC Room – QC lab spray booth for stain and QC samples.
- (d) Point of sale container filling station with a maximum filling rate of 15 gallons of coating per hour.

The following conditions shall be applicable.

- (a) Pursuant to 326 IAC 5-1-2 (Opacity Limitations) except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following:
 - (1) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

- (2) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor in a six (6) hour period.
- (b) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the particulate from the dry material handling process shall not exceed 5.74 pounds per hour when operating at a process weight rate of 3,308 pounds of pigment per hour and shall be limited by the following:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

This registration is the first air approval issued to this source. The source may operate according to 326 IAC 2-5.5.

An authorized individual shall provide an annual notice to the Office of Air Quality that the source is in operation and in compliance with this registration pursuant to 326 IAC 2-5.1-2(f)(3). The annual notice shall be submitted to:

**Compliance Data Section
Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251**

no later than March 1 of each year, with the annual notice being submitted in the format attached.

An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

Pursuant to Contract No. A305-5-65, IDEM, OAQ has assigned the processing of this application to Eastern Research Group, Inc., (ERG). Therefore, questions should be directed to Ms. Sanober Durrani, ERG, 1600 Perimeter Park Drive, Morrisville, North Carolina 27560, or call (919) 468-7810 to speak directly to Ms. Durrani. Questions may also be directed to Duane Van Laningham at IDEM, OAQ, 100 North Senate Avenue, Indianapolis, Indiana, 46204-2251, or call (800) 451-6027, ask for Duane Van Laningham, or extension 3-6878, or dial (317) 233-6878.

Sincerely,

Original signed by
Nysa L. James, Section Chief
Permits Branch
Office of Air Quality

ERG/SD

cc: File – Elkhart County
Elkhart County Health Department
Air Compliance – Paul Karkiewicz
Northern Regional Office
Permit Tracking
Compliance Data Section

Registration Annual Notification

This form should be used to comply with the notification requirements under 326 IAC 2-5.1-2(f)(3).

Company Name:	Nanochem Technologies, LLC
Address:	4715 Pine Creek Road
City:	Elkhart, Indiana 46516
Authorized individual:	Jeff Schwartz
Phone #:	(574) 262-9927
Registration #:	039-21967-00638

I hereby certify that Nanochem Technologies, LLC is still in operation and is in compliance with the requirements of Registration No. 039-21967-00638.

Name (typed):
Title:
Signature:
Date:

Indiana Department of Environmental Management Office of Air Quality

Technical Support Document (TSD) for a Registration

Source Background and Description

Source Name: Nanochem Technologies, LLC
Location: 4715 Pine Creek Road, Elkhart, Indiana 46516
County: Elkhart
SIC Code: 2851
Registration No.: 039-21967-00638
Permit Reviewer: ERG/SD

The Office of Air Quality (OAQ) has reviewed an application from Nanochem Technologies, LLC relating to the construction and operation of a coating manufacturing plant.

History

On October 28, 2005, Nanochem Technologies, LLC submitted an application to IDEM, OAQ requesting an approval for the construction and operation of a coating manufacturing plant to be located at 4715 Pine Creek Road, Elkhart, Indiana. The source will manufacture wood stains, pre-catalyzed wood topcoats, waterborne topcoats, metal coatings, and primers for bare metal. All coatings will be shipped offsite for sale.

New Emission Units and Pollution Control Equipment

The source consists of the following new emission units and pollution control devices:

- (a) One (1) coating production process with a maximum production rate of 230,000 gallons of coatings per year and consisting of the following facilities:
 - (1) One (1) dry material handling process with a maximum throughput rate of 3,308 pounds of pigments per hour.
 - (2) Two (2) dispersers.
 - (3) Two (2) mills.
 - (4) One (1) mixer (identified as EU-M1) with 500 gallon capacity.
 - (5) One (1) mixer (identified as EU-M2) with 250 gallon capacity.
 - (6) One (1) filling line.
- (b) QC Room- Research & Development lab mixer and mill.
- (c) QC Room – QC lab spray booth for stain and QC samples.
- (d) Point of sale container filling station with a maximum filling rate of 15 gallons of coating per hour.

Unpermitted Emission Units and Pollution Control Equipment

There are no unpermitted emission units operating at this source during this review process.

Existing Approvals

There are no previous approvals issued to this source.

Enforcement Issue

There are no enforcement actions pending.

Recommendation

The staff recommends to the Commissioner that the construction and operation be approved. This recommendation is based on the facts and conditions contained in this document.

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on October 28, 2005, with additional information received on December 16, 2005.

Emission Calculations

See Appendix A of this document for detailed emission calculations (Appendix A, pages 1 through 3).

Potential to Emit of the Source Before Controls

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U.S. EPA, the department, or the appropriate local air pollution control agency.”

Pollutant	Potential to Emit (tons/year)
PM	5.07
PM10	5.07
SO ₂	0.00
VOC	16.0
CO	0.00
NO _x	0.00

HAPs	Potential to Emit (tons/year)
Xylene	9.41
Toluene	5.13
Ethylbenzene	2.89
Methanol	1.71
Total	19.1

- (a) The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of all criteria pollutants are less than 25 tons per year and the potential to emit (as defined in 326 IAC 2-1.1-1(16)) of VOC is greater than 10 tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-5.5. A registration will be issued.
- (b) The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of any single HAP is less than ten (10) tons per year and the potential to emit (as defined in 326 IAC 2-1.1-1(16)) of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7 (Part 70 Permit Program).
- (c) Fugitive Emissions
Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2 and since there are no applicable New Source Performance Standards

that were in effect on August 7, 1980, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD and Emission Offset applicability.

County Attainment Status

The source is located in Elkhart County.

Pollutant	Status
PM10	Attainment
PM2.5	Attainment
SO ₂	Attainment
NO ₂	Attainment
8-Hour Ozone	Nonattainment
1-Hour Ozone	Attainment
CO	Attainment
Lead	Attainment

- (a) Elkhart County has been classified as unclassifiable or attainment for PM2.5. U.S. EPA has not yet established the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 for PM 2.5 emissions. Therefore, until the U.S.EPA adopts specific provisions for PSD review for PM2.5 emissions, it has directed states to regulate PM10 emissions as surrogate for PM2.5 emissions. See the State Rule Applicability – Entire Source section.
- (b) Volatile organic compounds (VOC) and Nitrogen Oxides (NOx) emissions are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NOx emissions are considered when evaluating the rule applicability relating to ozone standards. Elkhart County has been designated as nonattainment for the 8-ozone standard. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Emission Offset. See the State Rule Applicability – Entire Source Section.
- (c) Elkhart County has been classified as attainment or unclassifiable in Indiana for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. See the State Rule Applicability – Entire Source section.

Source Status

New Source PSD Definition (emissions after controls, based on 8760 hours of operation per year at rated capacity and/or as otherwise limited):

Pollutant	Emissions (tons/year)
PM	5.07
PM10	5.07
SO ₂	0.0
VOC	0.0
CO	16.0
NO _x	0.0
Single HAPs	<10
Combination HAPs	<25

- (a) This new source is not a major stationary source because no regulated pollutant (under PSD) is emitted at a rate of 250 tons per year or greater and it is not in one of the 28 listed source categories. Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.
- (b) This new source is not a major stationary source because no regulated pollutant (under Emission Offset) is emitted at a rate of 100 tons per year or greater. Therefore, pursuant to 326 IAC 2-3, the Emission Offset requirements do not apply.

- (c) This status is based on the potential to emit calculations for the source (See Appendix A).

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This new source is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

- (a) each criteria pollutant is less than 100 tons per year,
- (b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
- (c) any combination of HAPs is less than 25 tons per year.

This is the first air approval issued to this source.

Federal Rule Applicability

- (a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) included in this registration for this source.
- (b) The requirements of 40 CFR 60.110, Subpart Kb – Standards of Performance for Volatile Organic Solvent Storage Vessels are not included in this permit for the two (2) mixers because each tank has a capacity less than forty (40) cubic meters and are not used as storage tanks.
- (c) There are no National Emission Standards for Hazardous Air Pollutants (NESHAP)(326 IAC 14, 20 and 40 CFR Part 61, 63) included in this registration for this source.
- (d) The requirements of 40 CFR Part 63, Subpart HHHHH – National Emission Standards for Hazardous Air Pollutants: Miscellaneous Coating Manufacturing are not included in this regulation. This NESHAP is applicable to coating manufacturers that are major sources of Hazardous Air Pollutants (HAPs). For this source, the potential to emit any single HAP is less than 10 tons per year and the potential to emit total HAPs is less than 25 tons per year. Any change that increases the potential to emit HAPs to greater than these thresholds requires prior approval from IDEM, OAQ.

State Rule Applicability – Entire Source

326 IAC 2-2 (Prevention of Significant Deterioration (PSD))

Nanochem Technologies, LLC at Elkhart, Indiana will be constructed in 2006 and is not in one (1) of the twenty-eight (28) source categories. The potential to emit of each regulated pollutant before control is less than the two hundred and fifty (250) tons per year PSD threshold (see Appendix A). Therefore, the source is a minor source under PSD and the provisions of 326 IAC 2-2 do not apply.

3216 IAC 2-3 (Emission Offset)

This source will be constructed in 2006 and the potential to emit of VOC and NOx are less than one hundred (100) tons per year (see Appendix A). Therefore, the source is a minor source under emission offset and the provisions of 326 IAC 2-3 do not apply.

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))

The potential to emit of HAPs from the operation of this stationary coating manufacturing plant is less than ten (10) tons per year of a single HAP and less than twenty-five (25) tons per year of a combination of HAPs. Therefore, the provisions of 326 IAC 2-4.1 do not apply. Any change or modification that would result in potential to emit of HAPs equal to or greater than 10 or 25 tons per year for a single HAP or combination of HAPs, respectively, will trigger 40 CFR 63, Subpart HHHHH and requires prior approval from IDEM, OAQ.

326 IAC 2-6 (Emission Reporting)

This source is not subject to 326 IAC 2-6 (Emission Reporting) because it is not required to have an operating permit under 326 IAC 2-7 (Part 70 Permit Program). Therefore, the provisions of 326 IAC 2-6 do not apply.

326 IAC 5-1 (Opacity Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in the permit:

- (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

State Rule Applicability -- Coating Manufacturing Operations

326 IAC 8-1-6 (New Facilities; General Reduction Requirement)

The Permittee is not subject to the provisions of 326 IAC 8-1-6 (New Facilities; General Reduction Requirement) because the potential VOC emissions from coating manufacturing operations are less than twenty-five (25) tons per year.

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)

Pursuant to 326 IAC 6-3-2 the particulate from the dry material handling process shall not exceed 5.74 pounds per hour when operating at a process weight rate of 3,308 pounds of pigment per hour and shall be limited by the following:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

Based on emission calculations (see page 1 of 3 TSD, Appendix A), the dry material handling process is in compliance with this rule.

State Rule Applicability – QC Room (Mixing and Painting Operations)

326 IAC 8-1-6 (New Facilities, General Reduction Requirement)

The Permittee is not subject to the provisions of 326 IAC 8-1-6 (New Facilities; General Reduction Requirement) because the potential VOC emissions from QC Room (Mixing and Painting Operations) are less than twenty-five (25) tons per year.

Conclusion

The construction and operation of this stationary coating manufacturing plant shall be subject to the conditions of Registration No.: 039-21967-00638.

**Appendix A: Emission Calculations
Paint Manufacturing Processes**

Company Name: Nanochem Technologies, LLC
Address: 4715 Pine Creek Road, Elkhart, Indiana 46516
Permit: 39-21967
Plt ID: 039-00638
Reviewer: ERG/SD
Date: February 2, 2006

Potential To Emit Calculation:

Emission Unit	Coating Material	Density (lb/gal)	Max. Usage Rate (gal/year)	Max. Usage Rate (tons/year)	Emission Factor VOC (lb/ton of product)	PTE of VOC (tons/year)	Weight % Coating Pigment	Emission Factor PM/PM10 (lb/ton of pigment)	** PTE PM/PM10 (tons/year)	** PTE PM/PM10 (lbs/hour)
Mixer	Gray Shop Coat Primer	9.30	230,000	1,070	30	16.0	47.4%	20	5.07	1.16

* PTE calculated is based on the worst case coating with the highest VOC/HAP content.

** Assume all PM emissions are equal to PM10 emissions.

Emission factors are from AP-42, Chapter 6.4 - Paint and Varnish, Table 6.4-1 (May, 1983). Note, 0.5 - 1.0 percent particulate matter is emitted from pigment handling.

METHODOLOGY

PTE of VOC (tons/year) = Max. Usage Rate (gal/year) * Density (lb/gal) * VOC E.F (lb/ton of product) * 1 ton/2000 lbs

PTE of PM/PM10 (tons/year) = Max. Usage Rate (gal/year) * Density (lb/gal) * Weight % Coating Pigments * Particulate E.F (lb/ton of pigment) * 1 ton/2000 lbs

PTE of PM/PM10 (lbs/hour) = Max. Usage Rate (gal/year) * Density (lb/gal) * Weight % Coating Pigments * Particulate E.F (lb/ton of pigment) * 1 ton/2000 lbs * 1 year/8760hours

326 IAC 6-3-2 (Particulate Emission Limit for Manufacturing Processes Calculation):

326 IAC 6-3-2 Compliance Demonstration	Material Used gal/hour/batch	Material Used (tons/hour/batch)	326 IAC 6-3-2 Limit PM (lb/hour)
	750	1.65	5.74

METHODOLOGY

Material Used (tons/hour/batch) = Material Used (gal/hour/batch) * Density (lb/gal) * Weight % Coating Pigment

326 IAC 6-3-2 Limit (Allowable PM in lbs/hour) = 4.10 * [Material Used (tons/hour/batch)]^{0.67}

**Appendix A: Emission Calculations
Paint Manufacturing Processes**

Company Name: Nanochem Technologies, LLC
Address: 4715 Pine Creek Road, Elkhart, Indiana 46516
Permit: 39-21967
Plt ID: 039-00638
Reviewer: ERG/SD
Date: February 2, 2006

Emission Unit	Coating Material	Density (lb/gal)	Max. Usage Rate (gal/year)	Weight % Ethylbenzene	Weight % Xylene	Weight % Toluene	Weight % Methanol	PTE of Ethylbenzene	PTE of Xylene	PTE of Toluene	PTE of Methanol
Mixer	Gray Shop Coat Primer	9.30	230,000	0.27%	0.88%	0.48%	0.16%	2.89	9.41	5.13	1.71

Single Highest HAP (Xylene in tons/year) = 9.41
Combination of HAPs (tons/year) = 19.1

Note: PTE calculated is based on the worst case coating with the highest VOC/HAP content.

METHODOLOGY

PTE of HAP (tons/year) = Max. Capacity (gal/year) * Density (lb/gal) * Weight % HAP * 1 ton/2000 lbs

**Appendix A: Emission Calculations
Summary**

Company Name: Nanochem Technologies, LLC
Address: 4715 Pine Creek Road, Elkhart, Indiana 46516
Permit: 39-21967
Plt ID: 039-00638
Reviewer: ERG/SD
Date: February 2, 2006

Emission Units	PM	PM10	SO₂	NO_x	VOC	CO	HAPs
Paint Production	5.07	5.07	0.00	0.00	16.0	0.00	19.1