



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

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

TO: Interested Parties / Applicant

DATE: December 2, 2008

RE: Nanochem Technologies / 039-27120-00684

FROM: Matthew Stuckey, Branch 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, Suite N 501E, 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 1/2/08



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REGISTRATION OFFICE OF AIR QUALITY

Nanochem Technologies
1203 Kent Street
Elkhart, Indiana 46514

Pursuant to 326 IAC 2-5.1 (Construction of New Sources: Registrations) and 326 IAC 2-5.5 (Registrations), (herein known as the Registrant) is hereby authorized to construct and operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this registration.

Registration No. 039-27120-00684	
Original signed by: Iryn Calilung, Section Chief Permits Branch Office of Air Quality	Issuance Date: December 2, 2008

SECTION A

SOURCE SUMMARY

This registration is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in conditions A.1 and A.2 is descriptive information and does not constitute enforceable conditions. However, the Registrant should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Registrant to obtain additional permits pursuant to 326 IAC 2.

A.1 General Information

The Registrant owns and operates a stationary paint manufacturing source.

Source Address:	1203 Kent Street, Elkhart, Indiana 46514
Mailing Address:	1203 Kent Street, Elkhart, Indiana 46514
General Source Phone Number:	(574) 536-2838
SIC Code:	2851
County Location:	Elkhart
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Registration

A.2 Emission Units and Pollution Control Equipment Summary

This stationary source consists of the following emission units and pollution control devices:

- (a) One (1) surface coating manufacturing operation, approved for construction in 2008, and consisting of the following:
- (1) One (1) raw material handling area for the preparation and weighing of raw materials, identified as H1, with a maximum capacity of 554 pounds of raw material per hour, with particulate matter controlled by filters, and exhausting to the indoors.
 - (2) Two (2) dispersers for the handling of solvent based products, identified as D1 and D2, with a maximum capacity of 340 gallons and 210 gallons and a minimum batch time of 14 hours and 12 hours, respectively, and exhausting to the indoors.
 - (3) Two (2) dispersers for the handling of water based products, identified as DW1 and DW2, with a maximum capacity of 340 gallons and 210 gallons and a minimum batch time of 14 hours and 12 hours, respectively, and exhausting to the indoors.
 - (4) Four (4) mills, identified as MI-1, MI-2, MI-3, and MI-4, exhausting to the indoors.
 - (5) One (1) filling line, identified as F1, exhausting to the indoors.
 - (6) QC Room - One (1) Research & Development lab mixer and mill, identified as RD1, exhausting to the indoors.
 - (7) QC Room - One (1) QC lab spray booth for quality control, identified as RD2, with particulate matter controlled by a dust collector, and exhausting to the indoors.
 - (8) One (1) product dispensing area and packaging area for the preparation of the final product with a filling station, identified as H2, with a maximum capacity of 150 gallons per hour, and exhausting to the indoors.

SECTION B

GENERAL CONDITIONS

B.1 Definitions [326 IAC 2-1.1-1]

Terms in this registration shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, the applicable definitions found in the statutes or regulations (IC 13-11, 326 IAC 1-2 and 326 IAC 2-1.1-1) shall prevail.

B.2 Effective Date of Registration [IC 13-15-5-3]

Pursuant to IC 13-15-5-3, this registration is effective immediately, unless a petition for stay of effectiveness is filed and granted according to IC 13-15-6-3, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

B.3 Registration Revocation [326 IAC 2-1.1-9]

Pursuant to 326 IAC 2-1.1-9 (Revocation), this registration to operate may be revoked for any of the following causes:

- (a) Violation of any conditions of this registration.
- (b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this registration.
- (c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this registration shall not require revocation of this registration.
- (d) For any cause which establishes in the judgment of IDEM, the fact that continuance of this registration is not consistent with purposes of this article.

B.4 Prior Permits Superseded [326 IAC 2-1.1-9.5]

- (a) All terms and conditions of permits established prior to Registration No. 039-27120-00684 and issued pursuant to permitting programs approved into the state implementation plan have been either:
 - (1) incorporated as originally stated,
 - (2) revised, or
 - (3) deleted.
- (b) All previous registrations and permits are superseded by this registration.

B.5 Annual Notification [326 IAC 2-5.1-2(f)(3)] [326 IAC 2-5.5-4(a)(3)]

Pursuant to 326 IAC 2-5.1-2(f)(3) and 326 IAC 2-5.5-4(a)(3):

- (a) An annual notification shall be submitted by an authorized individual to the Office of Air Quality stating whether or not the source is in operation and in compliance with the terms and conditions contained in this registration.
- (b) The annual notice shall be submitted in the format attached no later than March 1 of each year to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003

Indianapolis, IN 46204-2251

- (c) The notification shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

B.6 Source Modification Requirement [326 IAC 2-5.5-6(a)]

Pursuant to 326 IAC 2-5.5-6(a), 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.

B.7 Registrations [326 IAC 2-5.1-2(i)]

Pursuant to 326 IAC 2-5.1-2(i), this registration does not limit the source's potential to emit.

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

Emission Limitations and Standards [326 IAC 2-5.1-2(g)] [326 IAC 2-5.5-4(b)]

C.1 Opacity [326 IAC 5-1]

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 this registration:

- (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.

C.2 Fugitive Dust Emissions [326 IAC 6-4]

The Registrant shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions).

SECTION D.1

OPERATION CONDITIONS

Facility Description [326 IAC 2-5.1-2(f)(2)] [326 IAC 2-5.5-4(a)(2)]:

- (a) One (1) surface coating manufacturing operation, approved for construction in 2008, and consisting of the following:
- (1) One (1) raw material handling area for the preparation and weighing of raw materials, identified as H1, with a maximum capacity of 554 pounds of raw material per hour, with particulate matter controlled by filters, and exhausting to the indoors.
 - (2) Two (2) dispersers for the handling of solvent based products, identified as D1 and D2, with a maximum capacity of 340 gallons and 210 gallons and a minimum batch time of 14 hours and 12 hours, respectively, and exhausting to the indoors.
 - (3) Two (2) dispersers for the handling of water based products, identified as DW1 and DW2, with a maximum capacity of 340 gallons and 210 gallons and a minimum batch time of 14 hours and 12 hours, respectively, and exhausting to the indoors.
 - (4) Four (4) mills, identified as MI-1, MI-2, MI-3, and MI-4, exhausting to the indoors.
 - (5) One (1) filling line, identified as F1, exhausting to the indoors.
 - (6) QC Room - One (1) Research & Development lab mixer and mill, identified as RD1, exhausting to the indoors.
 - (7) QC Room - One (1) QC lab spray booth for quality control, identified as RD2, with particulate matter controlled by a dust collector, and exhausting to the indoors.
 - (8) One (1) product dispensing area and packaging area for the preparation of the final product with a filling station, identified as H2, with a maximum capacity of 150 gallons per hour, and exhausting to the indoors.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-5.1-2(f)(1)] [326 IAC 2-5.5-4(a)(1)]

D.1.1 Particulate [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the particulate emission rate from the raw material handling process (H1) shall not exceed 1.73 pounds per hour when operating at a process weight rate of 0.277 tons per hour.

The pound per hour limitation was calculated with the following equation:

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

$$E = 4.10 P^{0.67}$$

Where E = rate of emission in pounds per hour; and
 P = process weight rate in tons per hour

Compliance Determination Requirements [326 IAC 2-5.1-2(g)] [326 IAC 2-5.5-4(b)]

D.1.2 Particulate Control

To document compliance with Condition D.1.1, the filter(s) for particulate control shall be in operation and control emissions from the raw material handling process (H1) at all times when the raw material handling process (H1) is in operation.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE BRANCH**

**REGISTRATION
ANNUAL NOTIFICATION**

This form should be used to comply with the notification requirements under 326 IAC 2-5.1-2(f)(3) and 326 IAC 2-5.5-4(a)(3).

Company Name:	Nanochem Technologies
Address:	1203 Kent Street
City:	Elkhart, Indiana 46514
Phone Number:	(574) 536-2838
Registration No.:	039-27120-00684

I hereby certify that Nanochem Technologies is :

still in operation.

I hereby certify that Nanochem Technologies is :

no longer in operation.

in compliance with the requirements of Registration No. 039-27120-00684.

not in compliance with the requirements of Registration No. 039-27120-00684.

Authorized Individual (typed):
Title:
Signature:
Phone Number:
Date:

If there are any conditions or requirements for which the source is not in compliance, provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be achieved.

Noncompliance:

Indiana Department of Environmental Management Office of Air Quality

Technical Support Document (TSD) for a Registration

Source Description and Location

Source Name:	Nanochem Technologies
Source Location:	1203 Kent Street, Elkhart, Indiana 46514
County:	Elkhart
SIC Code:	2851
Registration No.:	039-27120-00684
Permit Reviewer:	Brian Williams

On November 5, 2008, the Office of Air Quality (OAQ) has received an application from Nanochem Technologies related to the construction and operation of a new stationary paint manufacturing source.

Existing Approvals

There have been no previous approvals issued to this source.

County Attainment Status

The source is located in Elkhart County.

Pollutant	Designation
SO ₂	Better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
O ₃	Attainment effective July 19, 2007, for the 8-hour ozone standard. ¹
PM ₁₀	Unclassifiable effective November 15, 1990.
NO ₂	Cannot be classified or better than national standards.
Pb	Not designated.
¹ Attainment effective October 18, 2000, for the 1-hour ozone standard for the South Bend-Elkhart area, including Elkhart County, and is a maintenance area for the 1-hour National Ambient Air Quality Standards (NAAQS) for purposes of 40 CFR 51, Subpart X*. The 1-hour standard was revoked effective June 15, 2005. Unclassifiable or attainment effective April 5, 2005, for PM2.5.	

- (a) **Ozone Standards**
 Volatile organic compounds (VOC) and Nitrogen Oxides (NOx) 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. Elkhart County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
- (b) **PM2.5**
 Elkhart County has been classified as attainment for PM2.5. On May 8, 2008 U.S. EPA promulgated the requirements for Prevention of Significant Deterioration (PSD) for PM2.5 emissions, and the effective date of these rules was July 15th, 2008. Indiana has three years from the publication of these rules to revise its PSD rules, 326 IAC 2-2, to include those requirements. The May 8, 2008 rule revisions require IDEM to regulate PM10 emissions as a surrogate for PM2.5 emissions until 326 IAC 2-2 is revised.

- (c) Other Criteria Pollutants
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.

Fugitive Emissions

The fugitive emissions of criteria pollutants and hazardous air pollutants are counted toward the determination of 326 IAC 2-5.1-2 (Registrations) applicability.

Background and Description of Emission Units and Pollution Control Equipment

The Office of Air Quality (OAQ) has reviewed an application, submitted by Nanochem Technologies on November 5, 2008, relating to the construction and operation of a new stationary paint manufacturing source.

The following is a list of the new emission unit(s):

- (a) One (1) surface coating manufacturing operation, approved for construction in 2008, and consisting of the following:
- (1) One (1) raw material handling area for the preparation and weighing of raw materials, identified as H1, with a maximum capacity of 554 pounds of raw material per hour, with particulate matter controlled by filters, and exhausting to the indoors.
 - (2) Two (2) dispersers for the handling of solvent based products, identified as D1 and D2, with a maximum capacity of 340 gallons and 210 gallons and a minimum batch time of 14 hours and 12 hours, respectively, and exhausting to the indoors.
 - (3) Two (2) dispersers for the handling of water based products, identified as DW1 and DW2, with a maximum capacity of 340 gallons and 210 gallons and a minimum batch time of 14 hours and 12 hours, respectively, and exhausting to the indoors.
 - (4) Four (4) mills, identified as MI-1, MI-2, MI-3, and MI-4, exhausting to the indoors.
 - (5) One (1) filling line, identified as F1, exhausting to the indoors.
 - (6) QC Room - One (1) Research & Development lab mixer and mill, identified as RD1, exhausting to the indoors.
 - (7) QC Room - One (1) QC lab spray booth for quality control, identified as RD2, with particulate matter controlled by a dust collector, and exhausting to the indoors.
 - (8) One (1) product dispensing area and packaging area for the preparation of the final product with a filling station, identified as H2, with a maximum capacity of 150 gallons per hour, and exhausting to the indoors.

Enforcement Issues

There are no pending enforcement actions related to this source.

Emission Calculations

See Appendix A of this TSD for detailed emission calculations.

Permit Level Determination – Registration

The following table reflects the unlimited potential to emit (PTE) of the entire source before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Process/ Emission Unit	Potential To Emit of the Entire Source (tons/year)								
	PM	PM10 *	PM2.5	SO ₂	NO _x	VOC	CO	Total HAPs	Worst Single HAP
Solvent Based Paint Manufacturing Process (D1)	4.32	4.32	4.32	0	0	13.66	0	6.83	4.1 Xylene
Solvent Based Paint Manufacturing Process (D2)	3.11	3.11	3.11	0	0	9.84	0	4.92	2.95 Xylene
Water Based Paint Manufacturing Process (DW1)	3.07	3.07	3.07	0	0	0	0	0	0
Water Based Paint Manufacturing Process (DW2)**	see note	see note	see note	0	0	0	0	0	0
R&D Lab Mixer and Mill (RD1)	0.04	0.04	0.04	0	0	0.12	0	0.06	0.04 Xylene
QC Lab Spray Booth	0.2	0.2	0.2	0	0	0.69	0	0.35	0.208 Xylene
Total PTE of Entire Source	10.73	10.73	10.73	0	0	24.31	0	12.16	7.29
Registration Levels	25	25	25	25	25	25	100	25	10
negl. = negligible * Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant". * Maximum of three dispersers can be operated at one time (due to limited availability of scales, clean up stations, and equipment setup). Unlimited PTE of PM/PM10 from solvent and water based paint manufacturing based on the three highest PM/PM10 values (D1,D2, and DW1)									

- (a) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1(16)) of PM, PM10, and VOC are within the ranges listed in 326 IAC 2-5.1-2(a)(1). The PTE of all other regulated criteria pollutants are less than the ranges listed in 326 IAC 2-5.1-2(a)(1). Therefore, the source is subject to the provisions of 326 IAC 2-5.1-2 (Registrations). A Registration will be issued.
- (b) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1(16)) of any single HAP is less than ten (10) tons per year and the PTE of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA) and not subject to the provisions of 326 IAC 2-7.

Federal Rule Applicability Determination

New Source Performance Standards (NSPS)

- (a) There are no New Source Performance Standards (NSPS)(40 CFR Part 60) included in the permit.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- (b) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Miscellaneous Coating Manufacturing, 40 CFR Part 63, Subpart HHHHH are not included in the permit. 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.
- (c) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14, 326 IAC 20 and 40 CFR Part 63) included in the permit.

Compliance Assurance Monitoring (CAM)

- (d) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is not included in the permit, because the unlimited potential to emit of the source is less than the Title V major source thresholds and the source is not required to obtain a Part 70 or Part 71 permit.

State Rule Applicability Determination

- (a) 326 IAC 2-5.1-2 (Registrations)
Registration applicability is discussed under the Permit Level Determination – Registration section above.
- (b) 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))
The potential to emit of any single HAP is less than ten (10) tons per year and the potential to emit of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA) and not subject to the provisions of 326 IAC 2-4.1.
- (c) 326 IAC 2-6 (Emission Reporting)
Pursuant to 326 IAC 2-6-1, this source is not subject to this rule, because it is not required to have an operating permit under 326 IAC 2-7 (Part 70), it is not located in Lake, Porter, or LaPorte County, and it does not emit lead into the ambient air at levels equal to or greater than 5 tons per year. Therefore, 326 IAC 2-6 does not apply.
- (d) 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 this permit:
- (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 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.

- (e) 326 IAC 6-4 (Fugitive Dust Emissions Limitations)
Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions Limitations), the source shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4.
- (f) 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)
Each of the emission units at this source is not subject to the requirements of 326 IAC 8-1-6, since the unlimited VOC potential emissions from each emission unit is less than twenty-five (25) tons per year.

Surface Coating Manufacturing Operation

- (g) 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)
 - (1) Pursuant to 326 IAC 6-3-2, the particulate matter (PM) from the raw material handling process (H1) shall not exceed 1.73 pounds per hour when operating at a process weight rate of 0.277 tons per hour.

The pound per hour limitation was calculated with the following equation:

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:

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

The filter(s) shall be in operation at all times the raw material handling process (H1) is in operation, in order to comply with this limit.

- (2) Pursuant to 326 IAC 6-3-1(b)(15), the QC lab spray booth is exempt from the requirements of 326 IAC 6-3-2(d) because the spray booth applies less than five (5) gallons of coating per day.
- (h) 326 IAC 12 (New Source Performance Standards)
See Federal Rule Applicability Section of this TSD.
- (i) 326 IAC 20 (Hazardous Air Pollutants)
See Federal Rule Applicability Section of this TSD.

Conclusion and Recommendation

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 November 5, 2008.

The construction and operation of this source shall be subject to the conditions of the attached proposed Registration No. 039-27120-00684. The staff recommends to the Commissioner that this Registration be approved.

IDEM Contact

- (a) Questions regarding this proposed permit can be directed to Brian Williams at the Indiana

Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) (234-4375) or toll free at 1-800-451-6027 extension (4-5375).

- (b) A copy of the findings is available on the Internet at: <http://www.in.gov/ai/appfiles/idem-caats/>
- (c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: www.idem.in.gov

**Attachment A: Emission Calculations
Surface Coating Manufacturing VOC, HAPs, and PM/PM10 Emissions**

**Company Name: Nanochem Technologies
Address City IN Zip: 1203 Kent Street, Elkhart, Indiana 46514
Permit Number: 039-27120-00684
Reviewer: Brian Williams**

Emission Unit	Gallons per Batch	Maximum Usage Rate (gal/yr)*	Maximum Density (lb/gal)	Maximum Usage Rate (tons/yr)	VOC Emission Factor (lb/ton)	Unlimited PTE VOC (tons/yr)	HAP Emission Factor (% of VOC emissions)**	Unlimited PTE of Total HAPs (tons/year)	Xylene Emission Factor (% of VOC emissions)	PTE of Xylene (tons/yr)	Formaldehyde Emission Factor (% of VOC emissions)	PTE of Formaldehyde (tons/yr)	Ethylbenzene Emission Factor (% of VOC emissions)	PTE of Ethylbenzene (tons/yr)	Weight % of Coating Pigment	PM/PM10 Emission Factor (lb/ton)	Unlimited PTE of PM/PM10 (lb/hr)	Unlimited PTE of PM/PM10 (tons/yr)***
Solvent Based Paint Manufacturing Process (D1)	340	212743	8.56	910.54	30.0	13.66	50.00%	6.83	30.00%	4.10	0.67%	9.15E-02	1.50%	2.05E-01	47.40%	20.00	0.99	4.32
Solvent Based Paint Manufacturing Process (D2)	210	153300	8.56	656.12	30.0	9.84	50.00%	4.92	30.00%	2.95	0.67%	6.59E-02	1.50%	1.48E-01	47.40%	20.00	0.71	3.11
Water Based Paint Manufacturing Process (DW1)	340	212743	8.56	910.54	0.0	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.00E+00	0.0%	0.00E+00	33.70%	20.00	0.70	3.07
Water Based Paint Manufacturing Process (DW2)	210	153300	8.56	656.12	0.0	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.00E+00	0.0%	0.00E+00	33.70%	20.00	0.50	2.21
R & D Lab Mixer and Mill (RD1)	3	1877	8.56	8.03	30.0	0.12	50.00%	0.06	30.00%	0.04	0.67%	8.07E-04	1.50%	1.81E-03	47.40%	20.00	0.01	0.04
Total						23.62		11.81		7.09		1.58E-01		3.54E-01				10.53

Methodology

Emission Factors are from AP-42, Chapter 6.4 - Paint and Varnish Table 6.4-1 (May 1983)

Unlimited PTE VOC (tons/yr) = Max. Usage Rate (tons/yr) * VOC EF (lb/ton) * 1/2000 (ton/lbs)

Unlimited PTE HAPs (tons/yr) = Unlimited PTE VOC (tons/yr) * HAP EF (% of VOC Emissions)

Unlimited PTE PM/PM10 (tons/yr) = Max. Usage Rate (gal/yr) * Max. Density (lb/gal) * Weight % of Coating Pigment * PM/PM10 EF (lb/ton) * 1/2000 (ton/lbs) * 1/2000 (ton/lbs)

Unlimited PTE of PM/PM10 based on the three highest PM/PM10 values from solvent and water based paint manufacturing.

*Maximum Usage Rate: Max capacity of disperser / hours per batch*8760 (340 gallon dispersers shortest batch is 14 hours; 210 disperser shortest batch is 12 hours)

**HAP emission factor: %HAP%/VOC * VOC emission factor

***Maximum of three dispersers can be operated at one time (due to limited availability of scales, clean up stations, and equipment setup).

**Appendix A: Emissions Calculations
VOC and Particulate
From Surface Coating Operations**

**Company Name: Nanochem Technologies
Address City IN Zip: 1203 Kent Street, Elkhart, Indiana 46514
Permit Number: 039-27120-00684
Reviewer: Brian Williams**

Material	Density (Lb/Gal)	Weight % Volatile (H2O & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/batch)	Maximum (batch/day)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC tons per year	Particulate Potential (ton/yr)	Transfer Efficiency
QC Lab Spray Booth	8.2	46.11%	0.0%	46.1%	0.0%	47.40%	0.25000	4.000	3.79	3.79	0.69	0.20	75%

METHODOLOGY

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/batch) * Maximum (batch/day) * (365 days/yr) * (1 ton/2000 lbs)
Particulate Potential Tons per Year = (units/hour) * (gal/unit) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) *(8760 hrs/yr) *(1 ton/2000 lbs)
Lab Spray Booth: Maximum usage for QC would be 1 quart per batch.
Worst case operations for site would be 4 batches of VOC containing product per day (1 disperser at 2 batches per day and 1 disperser at 1.7 batches per day)
VOC emission factor is based on worst case coating - 3.97 lb/gallon at 8.22 pounds per gallon
Transfer efficiency for PM = 75%

Material	Potential VOC tons per year	HAP Emission Factor (% of VOC emissions)**	Unlimited PTE of Total HAPs (tons/year)	Xylene Emission Factor (% of VOC emissions)	PTE of Xylene (tons/yr)	Formaldehyde Emission Factor (% of VOC emissions)	PTE of Formaldehyde (tons/yr)	Ethylbenzene Emission Factor (% of VOC emissions)	PTE of Ethylbenzene (tons/yr)
QC Lab Spray Booth	0.69	50.00%	0.35	30.00%	0.208	0.67%	0.0046	1.50%	0.0104

Methodology

HAP emission factor is worst case HAP pounds per gallon
Unlimited HAPs (tons/yr) = PTE VOC (tons/yr) * HAP EF (% of VOC emissions)

**Appendix A: Emissions Calculations
Summary of Emissions**

**Company Name: Nanochem Technologies
Address City IN Zip: 1203 Kent Street, Elkhart, Indiana 46514
Permit Number: 039-27120-00684
Reviewer: Brian Williams**

Unlimited Potential to Emit (tons/yr)								
Emission Unit	PM**	PM10**	SO ₂	NOx	VOC	CO	Total HAPs	Single HAP
Solvent Based Paint Manufacturing Process (D1)	4.32	4.32	0.0	0.0	13.66	0.0	6.83	4.10 Xylene
Solvent Based Paint Manufacturing Process (D2)	3.11	3.11	0.0	0.0	9.84	0.0	4.92	2.95 Xylene
Water Based Paint Manufacturing Process (DW1)	3.07	3.07	0.0	0.0	0.0	0.0	0.0	0.0
Water Based Paint Manufacturing Process (DW2)*	see note	see note	0.0	0.0	0.0	0.0	0.0	0.0
R & D Lab Mixer and Mill (RD1)	0.04	0.04	0.0	0.0	0.12	0.0	0.06	0.04 Xylene
QC Spray Booth	0.20	0.20	0.0	0.0	0.69	0.0	0.35	0.208 Xylene
Total	10.73	10.73	0.0	0.0	24.31	0.0	12.16	7.29 Xylene

*Maximum of three dispersers can be operated at one time (due to limited availability of scales, clean up stations, and equipment setup).

**Unlimited PTE of PM/PM10 from solvent and water based paint manufacturing based on the three highest PM/PM10 values (D1,D2, and DW1)