



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: September 28, 2006
RE: Fluoro-Seal International, L.P. / 039-23232-00653
FROM: Nisha Sizemore
Chief, Permits Branch
Office of Air Quality

Notice of Decision – Approval

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 326 IAC 2, this approval was effective immediately upon submittal of the application.

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 from 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
FNPER-AM.dot 03/23/06



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We make Indiana a cleaner, healthier place to live.

Mitchell E. Daniels, Jr.
Governor

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Mr. Paul Crook
Fluoro-Seal International, L.P.
16360 Park 10 Place, #325
Houston, Texas 77084

September 28, 2006

Re: Exempt Construction and Operation Status,
039-23232-00653

Dear Mr. Crook:

The application from Fluoro-Seal International, L.P., received on June 14, 2006, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-1.1-3, it has been determined that the following stationary fluorination plant to be located at 4251 Pine Creek Road, Elkhart Indiana, 46516 is classified as exempt from air pollution permit requirements:

- (a) One (1) vacuum reaction chamber, for fluorination of plastic cores, with a maximum capacity of 10.45 lbs of fluorine gas per day.
- (b) One (1) continuous feed reactor, for fluorination of plastic sheets, with a maximum feed rate of 12 feet of plastic sheet per minute and a maximum gas usage rate of 10.45 lbs of fluorine gas per day.

The following conditions shall be applicable:

- (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:
 - (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.

This exemption is the first air approval issued to this source.

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 Tracy Dehavan Parham, ERG, 1600 Perimeter Park Drive, Morrisville, North Carolina 27560, or call (919) 468-7871 to speak directly to Ms. Parham. 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 and ask for Duane Van Laningham or extension 3-6878, or dial (317) 233-6878.

Sincerely,
Original signed by

Nisha Sizemore, Chief
Permits Branch
Office of Air Quality

Attachments

ERG/TDP

cc: File – Elkhart County
Elkhart County Health Department
Air Compliance Section Inspector – Paul Karkiewicz
Northern Regional Office
Permit Tracking
Compliance Data Section
Program Planning and Policy – Scott Delaney

Indiana Department of Environmental Management Office of Air Quality

Technical Support Document (TSD) for an Exemption

Source Background and Description

Source Name: Fluoro-Seal International, L.P.
Source Location: 4251 Pine Creek Road , Elkhart, Indiana 46516
County: Elkhart
SIC Code: 3089
Exemption No.: E039-23232-00653
Permit Reviewer: ERG/TDP

The Office of Air Quality (OAQ) has reviewed an application from Fluoro-Seal International, L.P. relating to the construction and operation of a stationary fluorination plant.

New Emission Units and Pollution Control Equipment

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

- (a) One (1) vacuum reaction chamber, for fluorination of plastic cores, with a maximum capacity of 10.45 lbs of fluorine gas per day.
- (b) One (1) continuous feed reactor, for fluorination of plastic sheets, with a maximum feed rate of 12 feet of plastic sheet per minute and a maximum gas usage rate of 10.45 lbs of fluorine gas per day.

Unpermitted Emission Units and Pollution Control Equipment

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

Existing Approvals

No previous approvals have been issued to the source.

Enforcement Issue

There are no enforcement actions pending.

Stack Summary

Stack ID	Operation	Height (ft)	Diameter (ft)	Flow Rate (acfm)	Temperature (°F)
Vent	General vent	17	0.3	223	155

Recommendation

The staff recommends to the Commissioner that the construction and operation be approved. This recommendation is based on the following facts and conditions:

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 June 14, 2006, with additional information received on September 12, 2006.

Emission Calculations

See Appendix A of this document for detailed emission calculations (Appendix A, page 1 of 1).

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/yr)
PM	0.00
PM-10	0.00
SO ₂	0.00
VOC	0.00
CO	0.00
NO _x	0.00
HAPs	Potential to Emit (tons/yr)

Hydrogen Fluoride	2.01
Total	2.01

- (a) The potential to emit (as defined in 326 IAC 2-1.1-1(16)) for all criteria pollutants are less than the levels listed in 326 IAC 2-1.1-3(d)(1). Therefore, the source is subject to the provisions of 326 IAC 2-1.1-3. An exemption 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 subject to the provisions of 326 IAC 2-1.1-3. An exemption will be issued.
- (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
PM ₁₀	Attainment
PM _{2.5}	Attainment
SO ₂	Attainment
NO ₂	Attainment
8-hour Ozone	Nonattainment
CO	Attainment
Lead	Attainment

On August 7, 2006, a temporary emergency rule took effect revoking the one-hour ozone standard in Indiana. The Indiana Air Pollution Control Board has approved a permanent rule revision to incorporate this change into 326 IAC 1-4-1. A permanent revision to 326 IAC 1-4-1 will take effect prior to the expiration of the emergency rule.

- (a) Elkhart County has been classified as attainment for PM_{2.5}. 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 - Source section.

- (b) 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 the ozone standards. Elkhart County has been designated as nonattainment for the 8-hour ozone standard. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for nonattainment new source review.
- (c) Elkhart County has been classified as attainment or unclassifiable in Indiana for PM10, NO₂, SO₂, CO and Lead. 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.
- (d) Fugitive Emissions
Since this type of operation is not one of the 28 listed source categories under 326 IAC 2-2 or 2-3 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.

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/yr)
PM	0
PM10	0
SO ₂	0
VOC	0
CO	0
NO _x	0
Single HAP*	2.01
Combination HAPs	2.01

* Hydrogen Fluoride

- (a) This new source is not a major stationary source under 326 IAC 2-2 because no attainment pollutant 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 under 326 IAC 2-3 because the potential to emit VOC and NO_x are less than 100 tons per year. Therefore, the requirements of 326 IAC 2-3 do not apply.

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 exemption.
- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAP)(326 IAC 14, 20 and 40 CFR Part 61, 63) included in this exemption.

State Rule Applicability – Entire Source

326 IAC 2-6 (Emission Reporting)

This source is located in Elkhart County is not required to operate under part 70 permit and has potential lead emissions that are less than five (5) tons per year. Therefore, 326 IAC 2-6 does 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.

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

The operation of vacuum reaction chamber and the continuous feed reactor will emit less than 10 tons per year of a single HAP and less than 25 tons per year of a combination of HAPs. Therefore, 326 IAC 2-4.1 does not apply.

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

This source is not subject to the requirements of 326 IAC 2-2 (PSD) because the potential to emit of all criteria pollutants is less than 250 tons per year. This source is a minor source under PSD for any future modifications.

326 IAC 2-3 (Emission Offset)

Although located in a county that is nonattainment for the eight (8) hour ozone standard, this source is not subject to the requirements of 326 IAC 2-3 because the potential to emit VOC and NOx are less than 100 tons per year. This source is a minor source under Emissions Offset for any future modifications.

State Rule Applicability – Individual Facilities

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

The vacuum reaction chamber and continuous feed reactor are not subject to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes). No particulates are produced in this process.

326 IAC 8-1 (VOC Rules)

326 IAC 8-1 (VOC Rules) are not applicable to this facility. The facility utilizes fluorine gas, which reacts with the surface of plastic components and parts, and is converted to hydrogen fluoride. Hydrogen fluoride is not a VOC.

Conclusion

The construction and operation of this stationary fluorination plant shall be subject to the conditions of the Exemption 039-23232-00653.

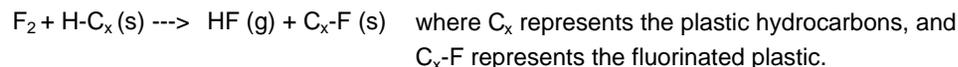
**Appendix A: Emissions Calculations
PTE from Fluorination Reactors**

Company Name: Fluoro-Seal International, L.P
Address: 4251 Pine Creek Road, Elkhart, Indiana 46516
Permit Number: 039-23232-000653
Reviewer: ERG/TDP
Date: September 15, 2006

Maximum Gas Usage: 10.45 lbs F₂/day per reactor

Description of Process:

The reaction chamber is used for the barrier treatment of plastic containers and parts using fluorine gas and to chemically modify the surface of parts to give greater adhesion properties. The continuous feed reactor is used for the surface modification of plastic parts that come in sheet or roll form. Mass balance is used to determine the amount of HF emitted. Fluorine is highly electronegative and is the strongest oxidizer known. Therefore, this reaction always drives to completion. No additional gas is added to the chamber. Fluorine is diatomic; the molecule splits and bonds to carbon atoms within the plastic to produce a fluorinated product. The reaction also releases a hydrogen atom, which recombines with free fluorine ions to produce hydrogen fluoride.



The molecular weight of F₂ is 38. The molecular weight of HF is 20.

Therefore, if 10.45 lbs of F₂ are introduced per day per reactor,

$$\frac{10.45 \text{ lbs } F_2 \times 20 \text{ HF m.w.}}{38 F_2 \text{ m.w.}} = 5.5 \text{ lbs HF produced}$$

$$5.5 \text{ lbs HF/day} \times 365 \text{ days/year} \times 1 \text{ ton/2000 lbs} = 1.00375 \text{ tons HF/yr per reactor}$$

$$1.00375 \text{ tons/yr per reactor} \times \text{two (2) reactors} = 2.01 \text{ tons HF/yr}$$

Note: If a worst-case scenario is assumed in which no plastic product is fluorinated, and all F₂ is converted to HF, two moles of HF are produced for every one mole of F₂. Therefore, 10.45 lbs of F₂/day/reactor would produce 11.01 lbs of HF/day/reactor or 2.01 tons HF/yr/reactor. The worst case PTE for HF for the entire source is 4.02 tons HF/yr, which remains at exemption level.