



Florida Department of Environmental Protection

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Northeast District
8800 Baymeadows Way West, Suite 100
Jacksonville, Florida 32256

PERMITTEE

SiVance, LLC
PO Box 1466
Gainesville, FL 32627

Air Permit No. 0010049-022-AC
Expiration Date: November 2, 2017

Organofunctional silane Production
Process and Equipment

Authorized Representative:

R. Cassidy Carlile, Plant Manager

PROJECT AND LOCATION

The construction permit authorizes the installation of a new production system dedicated to the production of an organofunctional silane product. The proposed work will be conducted at the existing Organic Chemical Manufacturing facility which is categorized under Standard Industrial Classification No. 2869- Industrial Organic Chemicals, Not Elsewhere Classified. The facility is located in Alachua County at 5002 N.E. 54th Place Gainesville, Alachua County, Florida. The UTM coordinates are Zone 17, 377.6 km East, and 3286.7 km North.

This final permit is organized into the following sections: Section 1 (General Information); Section 2 (Administrative Requirements); Section 3 (Emissions Unit Specific Conditions); and Section 4 (Appendices). Because of the technical nature of the project, the permit contains numerous acronyms and abbreviations, which are defined in Appendix A of Section 4 of this permit. As noted in the Final Determination provided with this final permit, only minor changes and clarifications were made to the draft permit.

STATEMENT OF BASIS

This air pollution construction permit is issued under the provisions of: Chapter 403 of the Florida Statutes (F.S.) and Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297 of the Florida Administrative Code (F.A.C.). The permittee is authorized to conduct the proposed work in accordance with the conditions of this permit. This project is subject to the general preconstruction review requirements in Rule 62-212.300, F.A.C. and is not subject to the preconstruction review requirements for major stationary sources in Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

Upon issuance of this final permit, any party to this order has the right to seek judicial review of it under Section 120.68 of the Florida Statutes by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel (Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000) and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The notice must be filed within 30 days after this order is filed with the clerk of the Department.

AIR CONSTRUCTION PERMIT

Executed in Jacksonville, Florida



Richard S. Rachal III, P.G.
Permitting Program Administrator

FILING AND ACKNOWLEDGEMENT & CERTIFICATE OF SERVICE

Filed on this date pursuant to § 120.52, Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged. The undersigned hereby certifies that the Final Air Permit package (including the Final Determination and Final Permit), and all copies were sent before the close of business on May 2, 2016, to the listed persons.

R. Cassidy Carlile, Plant Manager, SiVance, LLC (cassidy.carlile@milliken.com)

David A. Buff, P.E. Golder Associates, Inc. (dbuff@golder.com)

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Clerk

May 2, 2016

Date

SECTION 1. GENERAL INFORMATION

FACILITY DESCRIPTION

Existing Facility

The existing facility operates a Specialty Organic Chemical Manufacturing operation (EU 005) which manufactures customized chemical products, primarily organofunctional silanes and organofluorine intermediates on laboratory and larger scale.

Manufacturing areas consist of:

- 1) Building 5 (Pilot plant) process area
- 2) Building 18 process area;
- 3) Building 20 (Autoclave) process area
- 4) Building 21 (Uracil) process area
- 5) Buildings 25/26 (Prosil) Process Areas;
- 6) Building 32 Process Water and Storm Water Treatment area;
- 7) Building 39 Manufacturing/ammoniation Process Area
- 8) Building 43 (Norbornadiene) Process Area

The air pollutant emissions from the facility are Hazardous Air Pollutants (HAP) Volatile Organic Compounds (VOC) and Ammonia(NH_3). Significant emissions are controlled by a series of control devices as described below.

Control Devices:

Vertical venturi/packed-bed fume scrubbers with demister (WS 18-1, WS 18-2): Vanaire Model VT-550 control emissions from Building No. 18 EP 08 – EP 10 and EP 34. Caustic is used as the scrubbing media to remove chlorosilanes and hydrochloric acids emissions from alkoxysilanes production, or sulfuric acid is used as the scrubbing media to remove ammonia or allylamine emissions. Nominal scrubber flow rate is 17-28 gallons per minute through the venture and 25-55 gallons per minute through the packed bed. The design airflow rate is 2000 acfm. Exhaust gases exit at approximately 100° F from an 11” diameter stack that is 80’ tall.

Vertical venturi scrubber/vertical packed-bed fume scrubbers (WS 39- 1, WS 39- 2): Met-Pro Corp Duall Division control emissions from Building No. 39 from EP 28 and EP 30 Ammoniation processes. Caustic and water is used as the scrubbing media to remove ammonia or allylamine emissions. Nominal scrubber flow rate is 80 gallons per minute. The design airflow rate is 4600 acfm 60’ tall stack height and a 14”stack diameter.

Carbon bed absorber (CA 18-4) used only during Tetramethyl (TMT) production controls emissions from Building No. 18 EP 11. Carbon is used as the scrubbing media with a flow rate of 100-900 acfm.

Caustic vertical pack bed fume scrubber (WS 26-5): Met-Pro Corp Duall Division control emissions from Building No. 26, EP 21. EP 16 through EP 20, EP 22 intermediate device controlled emissions are also vented to this emission unit (WS 26-5). Caustic is used as the scrubbing media to remove chlorosilanes and hydrochloric acids emissions from alkoxysilanes production. Nominal scrubber flow rate is 80 gallons per minute with a design airflow rate is 80 – 200 acfm 76’ tall stack height and a 10”stack diameter.

Flare for Norbornadiene Process Building 43: Manufactured by Zeeco with an air flow rate of 1,985 acfm, 60’ stack and 10” in diameter.

Ammonia emissions from the HMDS process are captured by an ammonia absorber followed by a scrubber. Aqueous ammonium chloride waste is sent offsite for disposal.

SECTION 1. GENERAL INFORMATION

This facility is considered a synthetic Non-Title V source base on federally enforceable facility-wide emissions limits of less than 100 tons per year of VOC, less than 100 tons per year NH₃ less than 10 tons per year of individual HAPs, and less than 25 tons per year of total HAPs emissions.

The existing facility consists of the following emissions units.

| Facility ID No. 0010049 | | | |
|---|------------------------|---------------------------|--|
| Emissions Unit 005: Batch Organic Chemical Manufacturing | | | |
| Building No. | Building Name | Emission Point No. | Emission Point Description |
| 2 | R & D Labs | 01 | Lab fume hood emissions vented to atmosphere or to vertical packed-bed fume scrubbers (west end to WS 2-1 and east end to WS 35-1) |
| 3 | Analytical Wet Lab | | Laboratory |
| 5 | Pilot Plant | 03 | < 50 gallon glass-lined reactors vented to vertical packed bed fume scrubber (WS 5-1) |
| 5 | Pilot Plant | 02 | Reactor emissions vented to vertical packed bed fume scrubber (WS 5-1) |
| 5 | Pilot Plant | 03 | Reactor emissions vented to aspirator/venturi scrubber (WS 5-1) |
| 6 | Analytical Lab | N/A | Fume hood emissions vented to atmosphere |
| 7 | R & D Lab | 04 | Fume hood emissions vented to atmosphere |
| 13 | Oil heater | N/A | 30 HP Hot Oil Heater |
| 15 | Material control | N/A | Shipping/receiving, bottling operations, lab chemical storage |
| 18 | Drum wash | N/A | Pressurized H ₂ O cleaning of empty drums |
| 18 | Manufacturing | N/A | Non-contact H ₂ O chiller |
| 18 | Manufacturing | 06 | Aspirator (A-1 East) emissions vented to atmosphere |
| 18 | Manufacturing | 08 | Various reactors and NH ₃ absorber emissions vented to vertical pack bed fume scrubber w/ demister (WS18-1) |
| 18 | Manufacturing | 09 | Various reactors emissions vented to vertical pack bed fume scrubber w/ demister (WS 18-2) |
| 18 | Manufacturing | 10 | Various reactors emissions vented to vertical pack bed fume scrubber w/ demister (WS18-1 or WS 18-2) |
| 18 | Manufacturing | 11 | Carbon bed absorber (used only during TMT production) (CA-18-4) |
| 18 | Commercial Reactor | 34 | vertical pack bed fume scrubber vents through WS 18-1(WS 18-5) |
| 19 | Haz waste staging area | N/A | Secondary containment drum storage pad |
| 20 South | R & D | 12 | 1 to 20 gal high pressure autoclaves vented to scrubber(WS 20-1) |
| 20a East | Manufacturing | 13 | 200-500 gal high pressure autoclaves vented to scrubber(WS 20-1or WS 20-2) |
| 21 | Building 21 | 14 | Sulfuric acid mist eliminator (WS 21-1) |
| 21 | Building 21 | 15a | Aspirator |

SECTION 1. GENERAL INFORMATION

| | | | |
|-----------|------------------------------------|-----|--|
| 23, 26,33 | Mechanical chiller | N/A | Non-contact H ₂ O cooling with ethyl glycol & H ₂ O |
| 24 | Material storage | N/A | Exterior storage building |
| 25 | Prosil Manufacturing | 16 | Distillation columns: S-4 emissions vented to EP 5 or 15a, S-5, & S-6 emissions vented to EP 5 (ammoniation process) or EP 21 or EP 22(non ammoniation process) |
| 26 | Prosil Manufacturing | 05 | NH ₃ process vents for Buildings 25 & 26 |
| 26 | Prosil Manufacturing | 31 | R-14 Ammonia process vent |
| 26 | Prosil Manufacturing | 17 | Silane absorber (WS 26-1) emissions vented to EP 21 or EP 22 |
| 26 | Prosil Manufacturing | 18 | Venturi vertical pack bed fume scrubber (WS 26-2) vented to EP 21 or EP 22 |
| 26 | Prosil Manufacturing | 19 | R 8 HCL absorber (WS 26-4) vented to EP 21 or EP 22 |
| 26 | Prosil Manufacturing | 20 | R 14 HCL absorber (WS 26-7) vented to EP 21 or EP 22 |
| 26 | Prosil Manufacturing | 21 | Caustic vertical pack bed fume scrubber (WS 26-5) |
| 26 | Prosil Manufacturing | 22 | Caustic vertical pack bed fume scrubber (WS 26-6) |
| 26 | Prosil Manufacturing | 24 | Reactor (R-20) vented to Caustic vertical pack bed fume scrubber EP21 (WS 26-5) or EP22 (WS 26-6) |
| 26 | Prosil Manufacturing | 35 | New Distillation Column (S-2026), which will have a primary and a secondary condenser, vented to Caustic vertical pack bed fume scrubber (WS 26-5) or EP22 (WS 26-6) |
| 28 | Maintenance West | N/A | Batch cold cleaner for cleaning mechanical parts |
| 32 | Process H ₂ O treatment | N/A | Tank & aeration pond for final pH control |
| 32 | Process H ₂ O treatment | 23 | Above ground NaOH & HCl storage tanks, HCl storage tank venturi eductor |
| 32 | Process H ₂ O treatment | N/A | Bulk pH control tanks |
| 32 | Process H ₂ O treatment | 26 | VOC Stripper for process H ₂ O treatment |
| 33 | Research chemical manufacturing | N/A | Manufacture of small quantities of chemicals, counter top & walk in fume hoods vented to atmosphere or vertical packed bed scrubber (WS 33-1) |
| 35 | Manufacturing | 27 | Manufacture of small quantities of catalog chemicals, vented to vertical packed bed scrubber (WS 35-1) |
| 37 | Material control | N/A | Warehouse of drummed & bottled material |

SECTION 1. GENERAL INFORMATION

| | | | |
|----|--|-----|--|
| 38 | Material control | N/A | Drummed material storage pad (raw mat, intermediates & haz waste) |
| 39 | Manufacturing R-10 R-12 process | 28 | Venturi scrubber (WS 39-1) followed by a vertical packed-bed fume scrubber (WS 39-2) |
| 39 | Manufacturing R-10 R-12 Ammoniation process | 30 | Ammoniation process vented to EP 28 or atmosphere |
| 40 | Material control | N/A | Drummed material storage pad (East) |
| 41 | Material control | N/A | Drummed material storage pad (West) |
| 43 | Norbornadiene (NBD) | 29 | Flare for Norbornadiene |

| |
|---|
| Emission Units/Activities exempt from requiring an air construction permit or Non-Title V Operation permit |
|---|

| Building No. | Building Name | Emission Point No. | Emission Point Description |
|--------------|----------------------|--------------------|----------------------------|
| 27 | Steam Generation | 33 | Exempt Boilers |
| 26 | Prosil Manufacturing | 24 | Storage Tanks |

PROPOSED PROJECT

This air construction permit authorizes construction of a new, building (Building 48) to house equipment for organofunctional silane production. The equipment consists of a 200 gallon reactor (R-2148), a centrifuge (F-0148), a 500 gallon still pot (R-2248), a distillation column (S-2248), a two-stage wet scrubber system: a Venturi eductor scrubber in series with a caustic vertical pack bed fume scrubber (WS 48-1) and three storage tanks.

The reactor and distillation column will each vent to an individual condenser. The uncondensed vapors from each of these condensers will be routed into the two-stage wet scrubber system (EP 44) for VOC emissions control.

The centrifuge shall be used to extract the crude organofunctional silane product. The three storage tanks will store crude product, product materials, as well a raw material. The three storage tanks will be of fixed-roof design with a 2-psig cracking pressure check valve, nitrogen blanketed and vent to the two-stage wet scrubber system.

This project shall not cause an increase in the previously established facility-wide emissions limits of less than 100 tons per year of VOC, less than 10 tons per year of Individual Hazardous Air Pollutants, less than 25 tons per year of Total Combined Hazardous Air Pollutants and less than 100 tons per year of Ammonia.

SECTION 1. GENERAL INFORMATION

This project will add the following emissions point at Emissions Unit 005:

| Facility ID No. 0010049 | | | | | |
|-------------------------|--------------------------------------|--------------|---------------------------------|-----------|--|
| EU ID No. | Emission Unit Description | Building No. | Building Name | EP ID No. | Emission Point Description |
| -005 | Batch Organic Chemical Manufacturing | 48 | Organofunctional silane process | 44 | Organofunctional silane production process with a two-stage wet scrubber system (a Venturi eductor scrubber in series with a vertical pack bed fume scrubber, WS 48-1) |

Manufacturing areas consist of:

9) Building 48 – Organofunctional silane production process

Control Devices:

Vertical venturi/packed-bed fume scrubbers in series (WS 48-1): Vanaire, Inc. Model VT-550 controls VOC emissions from the uncondensed vapors from the 200 gallon reactor (R-2148) condenser and the distillation column (S-2248) condenser, and the emissions from fixed-roof storage tanks (T-0148, T-0248, T-0348) located in Building No. 48. An acidic solution is used as the scrubbing media to remove VOC emissions from the organofunctional silane production process. The nominal scrubber liquid recirculation rate is 30 gallons per minute through the scrubber system. The estimated design outlet flow rate at the Venturi is 1,000 actual cubic feet per minute (packed bed scrubber inlet) and 1071 actual cubic feet per minute at the packed bed scrubber outlet. Exhaust gases exit at approximately 100 °F from an 8 inch diameter stack that is 84 feet tall. The scrubber system is primarily for odor control as well as VOC removal.

FACILITY REGULATORY CLASSIFICATION

- The facility **is not** a major source of hazardous air pollutants (HAP). The facility is a synthetic area source of HAP emissions.
- The facility **does not** operate units subject to the acid rain provisions of the Clean Air Act.
- The facility **is not** a Title V major source of air pollution in accordance with Chapter 213, F.A.C. The facility is a synthetic non-Title V Major Source.
- The facility **is not** a major stationary source in accordance with Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

SECTION 2. ADMINISTRATIVE REQUIREMENTS

1. Permitting Authority: The permitting authority for this project is the Northeast District Office, Permitting Program, of the Florida Department of Environmental Protection (Department). The Northeast District Office's mailing address is 8800 Baymeadows Way West, Suite 100, Jacksonville, Florida 32256. All documents related to applications for permits to operate an emissions unit shall be submitted to the Northeast District Office, Permitting Program. The Permitting Authority's telephone number is (904) 256-1700.
2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Northeast District Office, Compliance Assurance at: 8800 Baymeadows Way West, Suite 100, Jacksonville, Florida 32256. The Compliance Authority's telephone number is (904) 256-1700.
3. Appendices: The following Appendices are attached as part of this permit: Appendix A (Citation Formats and Glossary of Common Terms); Appendix B (General Conditions); Appendix C (Common Conditions); and Appendix D (Common Testing Requirements).
4. Applicable Regulations, Forms and Application Procedures: Unless otherwise specified in this permit, the construction and operation of the subject emissions units shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403, F.S.; and Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296 and 62-297, F.A.C. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations.
5. New or Additional Conditions: For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time.
[Rule 62-4.080, F.A.C.]
6. Modifications: The permittee shall notify the Compliance Authority upon commencement of construction. No new emissions unit shall be constructed and no existing emissions unit shall be modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification.
[Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]
7. Construction and Expiration. The expiration date shown on the first page of this permit provides time to complete the physical construction activities authorized by this permit, complete any necessary compliance testing, and obtain an operation permit. Notwithstanding this expiration date, all specific emissions limitations and operating requirements established by this permit shall remain in effect until the facility or emissions unit is permanently shut down. For good cause, the permittee may request that that a permit be extended. Pursuant to Rule 62-4.080(3), F.A.C., such a request shall be submitted to the Permitting Authority in writing before the permit expires.
[Rules 62-4.070(4), 62-4.080 & 62-210.300(1), F.A.C.]

SECTION 2. ADMINISTRATIVE REQUIREMENTS

8. Source Obligation:

- a. Authorization to construct shall expire if construction is not commenced within 18 months after receipt of the permit, if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time. This provision does not apply to the time period between construction of the approved phases of a phased construction project except that each phase must commence construction within 18 months of the commencement date established by the Department in the permit.
- b. At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by virtue of a relaxation in any enforceable limitation which was established after August 7, 1980, on the capacity of the source or modification otherwise to emit a pollutant, such as a restriction on hours of operation, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.
- c. At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by exceeding its projected actual emissions, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification

[Rule 62-212.400(12), F.A.C.]

9. Application for Non-Title V Operation Permit: Subsequent to any construction, reconstruction or modification of a facility or emissions unit authorized by an air construction permit, and demonstration of compliance with the conditions of such air construction permit, the owner or operator of such facility or emissions unit shall obtain an initial air operation permit or revision of an existing air operation permit, whichever is appropriate, in accordance with all applicable provisions of this chapter and Chapter 62-4, F.A.C.

[Rule 62-210.300(2), F.A.C.]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

Subsection A: Emissions Unit 005 Batch Organic Chemical Manufacturing Emissions Point 44- BDEAS Production

This section of the permit addresses the following emissions unit.

| EU ID No. | Emission Unit Description | Building No. | Building Name | EP ID No. | Emission Point Description |
|-----------|--------------------------------------|--------------|---------------------------------|-----------|--|
| -005 | Batch Organic Chemical Manufacturing | 48 | Organofunctional silane process | 44 | <p>Organofunctional silane production process with a two-stage wet scrubber system.</p> <p><i>Controls:</i> Uncondensed vapor from the reactor condenser and the distillation column condenser, and the three fixed-roof storage tanks (T-0148, T-0248, T-0348) shall be routed into a two-stage wet scrubber system (a Venturi eductor scrubber in series with a vertical packed bed fume scrubber, WS 48-1) for VOC emissions control. The scrubber system is manufactured by Vanaire, Inc., Model VT-550 and shall use acidic solution as the scrubbing media. The minimum raw material (a VOC) design control efficiency shall be of at least 99.1%. The scrubber system is primarily for odor control as well as VOC removal.</p> <p><i>Stack Parameters:</i> The stack shall be of vertical design, 8 inches in diameter and at a height of approximately 84 feet above ground. The exit temperature shall be approximately 100° F with an estimated design outlet flow rate at the Venturi of 1,000 actual cubic feet per minute (packed bed scrubber inlet) and of 1071 actual cubic feet per minute at the packed bed scrubber outlet.</p> |

EQUIPMENT

A.1. The permittee is authorized to construct and install the below equipment associated with the organofunctional silane production process to be located in Building 48:

- One, 200 gallon reactor, R-2148
- One, centrifuge, F-0148
- One, 500 gallon still pot, R-2248
- One distillation column, S-2248
- One condenser located at exhaust of R-2148
- One condenser located at the exhaust of S-2248
- One, 2000 gallon, fixed roof, 316 stainless steel pressure vessel for the storage of crude organofunctional silane product, T-0148
- One, 2000 gallon, fixed roof, 316 stainless steel pressure vessel for the storage of raw material, T-0248
- One, 500 gallon fixed roof, 316 stainless steel pressure vessel for the storage of product, T-0348

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

Subsection A: Emissions Unit 005 Batch Organic Chemical Manufacturing Emissions Point 44- BDEAS Production

- j. Associated pumps, piping, pressure relief valves, and other ancillary equipment

[Permitting Note: Each of the fixed roof storage tanks are not subject to NSPS Subpart Kb because they are less than 75 m³ in size.]

[Application No. 0010049-022-AC; 40 CFR 60.110b(a)]

- A.2. Air Pollution Control Equipment:** The permittee shall install a two-stage wet scrubber system for the control of odors as well as emissions of volatile organic compounds from the organofunctional silane production process. The two-stage wet scrubber system shall consist of a Venturi eductor scrubber in series with a vertical pack bed fume scrubber manufactured by Vanaire, Inc., Model VT-550 (or equivalent). Acidic solution shall be used as the scrubbing media with a nominal liquid recirculation flow rate of 30 gallons per minute through the scrubber system. The scrubber system shall have a minimum design control efficiency of at least 99.1% and achieve the emission limits specified in this permit subsection.

The scrubber system shall be on line, functioning properly, and in operation in accordance with the manufacturer's recommendations at all times during which the process equipment associated with the production of organofunctional silane is in operation and under conditions where there is a potential to emit odors, VOCs or any regulated air pollutant, except during periods of malfunctions or mechanical failure.

[Application No. 0010049-022-AC; Rule 62-4.070, F.A.C.- Reasonable Assurance]

PERFORMANCE RESTRICTIONS

- A.3. Restricted Operation:** The hours of operation are not limited (8,760 hours per year).

[Rule 62-4.070, F.A.C.- Reasonable Assurance, Rule 62-210.200(PTE), F.A.C.]

- A.4. Circumvention:** The permittee shall not circumvent the air pollution control equipment or allow the emission of air pollutants without this equipment operating properly.

[Rule 62-210.650, F.A.C.]

OPERATION AND MAINTENANCE

- A.5. Air Pollution Control Equipment- Two-Stage Wet Scrubber System:** Uncondensed vapor from the reactor (R-2148) condenser and the distillation column (S-2248) condenser shall be vented to the two-stage wet scrubber system for odor and VOC emission control. Emissions from the three storage tanks, T-0148, T-0248, T-0348, shall be vented to the two-stage wet scrubber system for odor and VOC emission control.

[Application No. 0010049-022-AC; Rule 62-4.070, F.A.C.- Reasonable Assurance]

- A.6. Air Pollution Control Equipment- Maintenance:** The Permittee shall conduct all necessary maintenance and make all necessary attempts to maintain the air pollution control equipment for this Emissions Point in proper operating condition at all times.

[Rule 62-4.070, F.A.C.- Reasonable Assurance]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

Subsection A: Emissions Unit 005 Batch Organic Chemical Manufacturing Emissions Point 44- BDEAS Production

EMISSIONS STANDARDS

- A.7. General Visible Emissions.** No person shall cause, let, permit, suffer or allow to be discharged into the atmosphere the emissions of air pollutants from any activity equal to or greater than 20% opacity. This regulation does not impose a specific testing requirement. If a special compliance test is required pursuant to Rule 62-297.310(8)(c), F.A.C., the test method for visible emissions shall be EPA Method 9, incorporated and adopted by reference in Chapter 62-297, F.A.C.

[Rule 62-296.320(4)(b)1, F.A.C.]

- A.8. Maximum Allowable Emissions Rate (Facility-wide).** This permit does not change any or establish any new permitting emissions limits for this Emissions Unit. The permitted maximum allowable emission rate for each pollutant is as follows:

| Pollutant | Location | Emissions Rate | FAC Rule |
|---|---------------|--|-----------------|
| Total Volatile Organic Compounds | Facility-wide | Less than 100 tons per year NOTE (1) | 62-210.200(PTE) |
| Individual Hazardous Air Pollutants NOTES (2) | Facility-wide | Less than 10 tons per year NOTE (1) (3) | 62-210.200(PTE) |
| Total Combined Hazardous Air Pollutants NOTES (2) | Facility-wide | Less than 25 tons per year NOTE (1) | 62-210.200(PTE) |
| Ammonia | Facility-wide | Less than 100 tons per year NOTE (1) | 62-210.200(PTE) |

NOTE (1) Limit established to escape Title V classification.

NOTE (2) Hazardous Air Pollutants (HAPs), as defined in Section 112(g) of the Clean Air Act. Emissions are not to exceed the limits specified above.

NOTE (3) Limit established to escape Title III classification.

[Permit No. 0010049-009-AF]

TESTING REQUIREMENTS

- A.9. Initial VOC Performance Tests:** The combined emissions from the reactor (R-2148) and the distillation column (S-2248) condensers and the three storage tanks (T-0148, T-0248, T-0348), shall be tested to determine actual VOC emissions at the scrubber system exhaust stack (WS 48-1) using the test method specified in **Condition A.12**. The initial test shall be conducted not later than 180 days after initial startup of the organofunctional silane production process.

[Rule 62-4.070, F.A.C.- Reasonable Assurance, Rule 62-297.310(8)(b)1., F.A.C.]

- A.10. Subsequent VOC Performance Tests:** By the terms of this permit, subsequent VOC performance testing shall be required for this Emissions point upon Permit Renewal.

[Rule 62-4.070(3), F.A.C., Rule 62-297.310(8)(a)5., F.A.C., Rule 62-297.310(8)(b)1., F.A.C.]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

Subsection A: Emissions Unit 005 Batch Organic Chemical Manufacturing Emissions Point 44- BDEAS Production

- A.11. Test Requirements:** The permittee shall notify the Compliance Authority in writing at least 15 days prior to any required tests. Tests shall be conducted in accordance with the applicable requirements specified in Appendix D (Common Testing Requirements) of this permit.

[Rule 62-297.310(9), F.A.C.]

- A.12. Test Methods:** Required tests shall be performed in accordance with the following reference methods.

| Method | Description of Method and Comments |
|-----------|---|
| 1-4 | Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content |
| 25 or 25A | Method for Determining Gaseous Organic Concentrations (Flame Ionization) |

The above methods are described in Appendices A-1, A-2, A-3, and A-7 of 40 CFR 60 and are adopted by reference in Rule 62-204.800, F.A.C. No other methods may be used unless prior written approval is received from the Department.

[Rules 62-204.800, F.A.C.; and Appendices A-1, A-2, A-3, and A-7 of 40 CFR 60]

NOTIFICATION REQUIREMENTS

- A.13. Commencement of Construction/Operation:** The permittee shall submit to the Compliance Authority written notifications of the date of commencement of construction of the equipment associated with the organofunctional silane production process, the new two-stage wet scrubber, the three storage tanks, and the date of initial operation of this equipment. These notifications shall be submitted or postmarked within as many days prior to the date of construction/operation commencement as practical, but no later than five (5) business days following such date. Submissions may be sent electronically to the Compliance Authority: Christopher.Kirts@dep.state.fl.us.

[Rule 62-4.070(3), F.A.C. - Reasonable Assurance]

MONITORING

- A.14.** The permittee shall operate and maintain monitoring devices for the measurement of the air pressure differential across the wet scrubber system and the scrubbing liquid recirculation rate at least within 10 percent accuracy. The monitoring devices shall be calibrated periodically consistent with the manufacturer's recommendations.

[Rule 62-4.070(3), F.A.C.- Reasonable Assurance,]

RECORDKEEPING REQUIREMENTS

- A.15. Commencement of Construction/Operation Records:** The Permittee shall maintain a record of the date the equipment associated with the organofunctional silane production process, the new two-stage wet scrubber system, and the three storage tanks commence construction along with the date of initial operation of this equipment.

[Rule 62-4.070(3), F.A.C. - Reasonable Assurance]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

Subsection A: Emissions Unit 005 Batch Organic Chemical Manufacturing Emissions Point 44- BDEAS Production

- A.16. Storage Tanks T-0148, T-0248, T-0348- Records:** The permittee shall keep readily accessible records showing the dimensions of each of the storage tanks and an analysis showing the capacity of each storage tank. Records shall be retained for the life of the facility. The permittee shall also keep records sufficient to determine the annual throughput of the various liquids for each of the storage tanks for use in the Annual Operating Report.

[Rule 62-4.070(3) F.A.C. - Reasonable Assurance]

REPORTING REQUIREMENTS

- A.17. Performance Test Reports:** The permittee shall prepare and submit reports for all required tests in accordance with the requirements specified in Appendix D (Common Testing Requirements) of this permit.

[Rule 62-297.310(10), F.A.C.]