

TSE Industries, Inc.
Clearwater, Pinellas County Plants
Facility ID No.: 1030207
Pinellas County

Initial Title V Air Operation Permit
FINAL Permit No.: 1030207-004-AV

Permitting and Compliance Authority:
Florida Department of Environmental Protection
Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619
Telephone: 813/744-6100
Fax: 813/744-6458

**Initial Title V Air Operation Permit
TSE Industries, Inc.
FINAL Permit No.: 1030207-004-AV**

Table of Contents

| <u>Section</u> | <u>Page Number</u> |
|--|---------------------------|
| Placard Page | 1 |
| I. Facility Information | 2 - 3 |
| A. Facility Description. | |
| B. Summary of Emissions Unit ID No(s). and Brief Description(s). | |
| C. Relevant Documents. | |
| II. Facility-wide Conditions | 4 - 9 |
| III. Emissions Unit(s) and Conditions | |
| A. EU 002 and 003 VOC Fugitive Emissions and Batch Reactor System..... | 10 - 12 |
| IV. Appendices and Attachments <i>(listed in sequence as attached)</i> | |
| Appendix I-1, List of Insignificant Emissions Units and/or Activities | |
| Appendix TV-4, Title V Conditions | |
| Appendix FFFF, 40 CFR 63 NESHAP Subpart FFFF (National Emission Standard for Hazardous Air Pollutants - Miscellaneous Organic Chemical Manufacturing) and Appendix A-GP, 40 CFR 63 NESHAP Subpart A (General Provisions) | |
| O&M (Operation and Maintenance) Plans (N ₂ Controls and Toluene Condenser) * | |
| Table 1-1, Summary of Air Pollutant Standards and Terms | |
| Table 2-1, Summary of Compliance Requirements | |
| Table 3-1, Summary of Reporting Requirements | |
| Appendix A-1, Abbreviations, Definitions, Citations, and ID Numbers | |
| Appendix H-1, Permit History/ID Number Transfers | |
| Statement of Basis | |

**Note to electronic reviewers: The O&M Plans document (2 pages) is not available electronically. However, it is on file with the permitting authority and available upon request.*

Permittee:

TSE Industries, Inc.
5260 113th Avenue North
Clearwater, FL 33760

FINAL Permit No.: 1030207-004-AV**Facility ID No.:** 1030207**SIC Nos.:** 30, 3069**Project:** Initial Title V Air Operation Permit

This permit is for the operation of the facility consisting of the TSE Industries, Inc. Clearwater facilities, located at 5260 113th Avenue North and 4370 112th Terrace North in Clearwater, Pinellas County; UTM Coordinates (*for the 113th Ave. main facility*): Zone 17, 332.40 km East and 3084.0 North; and, Latitude: 27° 52' 19" North and Longitude: 82° 42' 09 West.

This Title V Air Operation Permit is issued under the provisions of Chapter 403, Florida Statutes (F.S.), and Florida Administrative Code (F.A.C.) Chapters 62-4, 62-210, and 62-213. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents, attached hereto or on file with the permitting authority, in accordance with the terms and conditions of this permit.

Referenced attachments made a part of this permit:

Appendix I-1, List of Insignificant Emissions Units and/or Activities

APPENDIX TV-4, TITLE V CONDITIONS version dated 02/12/02

Appendix FFFF, 40 CFR 63 NESHAP Subpart C (National Emission Standard for Hazardous Air Pollutants - Miscellaneous Organic Chemical Manufacturing) O&M (Operation and Maintenance) Plans (N₂ Controls and Toluene Condenser)

Effective Date: 07/19/2004**Renewal Application Due Date:** 01/20/2009**Expiration Date:** 07/19/2009

FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION

Gerald J. Kissel, P.E.
District Air Program Administrator
Southwest District

drz/

Section I. Facility Information.

Subsection A. Facility Description.

TSE manufactures, mills, stamps, and molds urethane rubber and plastic. The facility covered by this permit consists of operations at two nearby plants in Clearwater, a main material production facility located at 5260 113th Avenue North, and a secondary facility located at 4370 112 Terrace North, which typically acts as a finishing point for the overall production process of several rubber/plastic products. The regulated air emission source at this facility (located at the 113th Ave. N plant) is a batch reactor system to produce an adhesion promoter for plastic and rubber products.

Also included in this permit are miscellaneous insignificant emissions units and/or activities.

Based on the initial Title V permit application additional information received July 23, 2002, this facility is a major source of hazardous air pollutants (HAPs) (i.e. toluene).

Federal National Emission Standard for Hazardous Air Pollutants (NESHAP) Applicability

40 CFR 63 Subpart FFFF

This facility is subject to 40 CFR 63 National Emission Standard for Hazardous Air Pollutants (NESHAP) Subpart FFFF – Miscellaneous Organic Chemical Manufacturing.

(Compliance Note: This facility must comply with the requirements for existing sources in this subpart no later than November 10, 2006.)

40 CFR 63 Subpart DDDDD* NESHAP Applicability Note:

The facility natural gas fired boiler (1) and process heaters (2), listed as insignificant emission units in this Appendix I-1 (List of Insignificant Emission Units and/or Activities) will be subject* to 40 CFR 63 Subpart DDDDD – NESHAP for Industrial, Commercial and Institutional Boiler and Process Heaters, since they are boilers or process heaters located at a major source of HAPs. All of the listed facility boilers and process heaters are in the “Existing small gaseous fuel boilers and process heaters” category in accordance with the definitions in 40 CFR 63.7575, since they all have a rated heat input capacity of less than 10 MMBtu/hour. As stipulated in 40 CFR 63.7506(c), units in this category are not subject to the initial notification requirements, nor are they subject to any of the requirements in this subpart, or Subpart A, General Provisions, of this part (i.e. they are not subject to the emission limits, work practice standards, performance testing, monitoring, SSM Plans, site-specific monitoring plans, recordkeeping and reporting requirements of this subpart or any other requirements in Subpart A.

*(*NESHAP Status Note: At the time of the issuance of this permit, the final rule of NESHAP Subpart DDDDD had been signed (on 02/26/04), but not yet promulgated in the Federal Register.)*

Subsection B. Summary of Emissions Unit ID No(s). and Brief Description(s).

| <u>E.U. ID No.</u> | <u>Brief Description</u> |
|--------------------|--|
| 002 | VOC Fugitive Emissions |
| 003 | Batch reactor system to produce toluene diisocyanate dimer |

(EU Note: Previous Emission Unit 001 (Rubber Compounding Line) is no longer active.)

Subsection C. Relevant Documents.

The documents listed below are not a part of this permit; however, they are specifically related to this permitting action.

These documents are provided to the permittee for information purposes only:

Appendix A-1: Abbreviations, Acronyms, Citations, and Identification Numbers
Table 1-1, Summary of Air Pollutant Standards and Terms
Table 2-1, Summary of Compliance Requirements
Table 3-1, Summary of Reporting Requirements
Appendix H-1: Permit History/ID Number Changes
Statement of Basis

These documents are on file with permitting authority:

Initial Title V (TV) Permit Application received 05/24/03
Additional TV Information Requests dated 07/23/02, 10/21/02, 02/11/03, 05/01/03, and 12/18/03
Add'l TV Information Responses received 10/04/02, 01/17/03, 04/07/03, 07/17/03 and 01/21/04
Construction permit (AC) application dated 03/03/00
Additional AC information submitted 05/14/02
Additional Operation Permit (AO) Application Information Requests dated 04/17/00, and 06/23/00
Additional AO Application Information Response dated 05/19/00 and 07/24/00

Section II. Facility-wide Conditions.

The following conditions apply facility-wide:

1. APPENDIX TV-4, TITLE V CONDITIONS, is a part of this permit.
(Permitting Note: APPENDIX TV-4, TITLE V CONDITIONS, is distributed to the permittee only. Other persons requesting copies of these conditions shall be provided one copy when requested or otherwise appropriate.)
2. Insignificant Emissions Units and/or Activities. Appendix I-1, List of Insignificant Emissions Units and/or Activities, is a part of this permit.
[Rules 62-213.440(1), 62-213.430(6), and 62-4.040(1)(b), F.A.C.]

Essential Potential to Emit (PTE) Parameters

3. Operating Hours - This facility is permitted for continuous operation (i.e. 8,760 hours/year) for the activities described by this permit.
[Rule 62-210.200(PTE), F.A.C., and construction permit 1030207-003-AC]

Emission Limitations and Operation Requirements

4. VOC Emissions - The maximum emission of volatile organic compounds (VOCs) from the entire facility shall not exceed 29.75 tons for any 12-consecutive-month period.
[Construction permit 1030207-003-AC]
5. HAP Emissions - The maximum emission rate of hazardous air pollutants (HAPs) from the entire facility shall not exceed the following:
 - a. total HAP emissions shall not exceed 29.75 tons for any 12-consecutive-month period;
 - b. toluene emissions shall not exceed 23.75 tons for any 12-consecutive-month period.

[Construction permit 1030207-003-AC]

6. General Pollutant Emission Limiting Standards. Objectionable Odor Prohibited. No person shall cause, suffer, allow, or permit the discharge of air pollutants which cause or contribute to an objectionable odor. An objectionable odor is any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance.
[Rule 62-296.320(2), F.A.C.; Pinellas County Code, Section 58-178; and construction permit 01030207-003-AC]

7. General Particulate Emission Limiting Standards. General Visible Emissions (VE) Standard.

Except for emissions units that are subject to a particulate matter or opacity limit set forth or established by rule and reflected by conditions in this permit, no person shall cause, let, permit, suffer or allow to be discharged into the atmosphere the emissions of air pollutants from any activity, the density of which is equal to or greater than that designated as Number 1 on the Ringelmann Chart (20 percent opacity). EPA Method 9 is the method of compliance pursuant to Chapter 62-297, F.A.C. [Rules 62-296.320(4)(b)1. & 4., F.A.C.]

8. General Pollutant Emission Limiting Standards. Volatile Organic Compounds (VOC) Emissions or Organic Solvents (OS) Emissions. The permittee shall allow no person to store, pump, handle, process, load, unload or use in any process or installation, volatile organic compounds (VOC) or organic solvents (OS) without applying known and existing vapor emission control devices or systems deemed necessary and ordered by the Department as follows:

- a. Maintain tightly fitting cover, lids, etc. on all containers when they are not being handled, tapped, etc.
- b. Where possible and practical, procure/fabricate a tightly fitting cover for any open trough, basin, etc. of VOC so that it can be covered when not in use.
- c. Immediately attend to all spills/waste as appropriate.

[Rule 62-296.320(1)(a), F.A.C.; construction permit 1030207-003-AC]

9. Emissions of Unconfined Particulate Matter. All reasonable precautions shall be taken to prevent and control generation of unconfined (fugitive) emissions of particulate matter in accordance with the provisions in Rule 62-296.320(4)(c)3., F.A.C. These provisions are applicable to any source, including but not limited to, vehicular movement, transportation of materials, construction, alteration, demolition or wrecking, or industrial related activities such as loading, unloading, storing and handling [Rule 62-296.320(4)(c), F.A.C.]

Compliance Recordkeeping Requirements

10. Toluene Inventory Records - The permittee shall maintain a toluene inventory log. It shall identify all process and storage vessels intended to contain toluene or toluene mixtures of more than 5 gallons volume. At the end of each month, record at least the following information regarding inventory and inventory changes:

- a. The facility name, emission unit ID number, and month/year;
 - b. Mass of each vessel's contents (or active volume and specific gravity of contents);
 - c. Mass fraction of toluene in each vessel;
- (continued)*

10. *(continued)*

- d. Mass of toluene in each vessel;
- e. Based on d. above, the total mass of toluene at the facility;
- f. Mass of toluene purchased (or otherwise received) for that month;
- g. Mass of fraction of toluene removed (as still bottoms or otherwise disposed of) for that month;
- h. The net loss of toluene based on mass balance of e, f, and g above;
(Note: This value will be considered as fugitive toluene emissions and used in the VOC/HAP records in the following condition.)
- i. The date of the update;
- j. The name(s) of the person(s) who obtained the measurements and updated the log.

[Rule 62-4.070(3), F.A.C.; construction permit 1030207-003-AC]

11. VOC/HAP Log - A VOC/HAP emission log shall be established and maintained for the facility in order to demonstrate compliance with Specific Condition Nos. 4. and 5. The log shall contain all the necessary measurements required to demonstrate that emissions of VOCs, toluene, and total HAPs do not exceed the respective limits; and it shall be updated on a monthly basis. The log shall be completed no later than 15 days after the end of the month, and it shall show at least the following information:

- a. The facility name, emission unit ID number, and month/year;
- b. The date that the log was updated;
- c. The name of the person who updated the log;
- d. Each month's fugitive toluene emissions (in tons/month), which are assumed to be equal to the change in toluene inventory;
- e. Cumulative (rolling-12-months) fugitive emissions of toluene (in tons/12-continuous-months);
- f. Each month's total fugitive emissions (in tons/month) of VOCs and HAPs;
- g. Cumulative (rolling-12-months) fugitive emissions of VOCs and HAPs (in tons/12-continuous-months).

[Rule 62-4.070(3), F.A.C.; Pinellas County Code Section 58-90; construction permit 1030207-003-AC]

12. Documentation - Appropriate records to support the estimation of VOC/HAP usage and toluene inventory, emission logs (including Material Safety Data Sheets (MSDSs), EPA data sheets, toluene mass-fraction analyses, purchase orders, tank soundings, and distillation-bottom analyses) shall be maintained at the facility. Records verifying the non-VOC or non-HAP quality of other materials shall also be kept.
[Rule 62-4.070(3), F.A.C.; construction permit 1030207-003-AC]

13. Record Retention - All of the records required by this facility shall be kept for the most recent 5 year period and made available to the Department or the Pinellas County Department of Environmental Management upon request.
[Rule 62-213.440(1)(b)2.b, F.A.C.]

14. When appropriate, any recording, monitoring, or reporting requirements that are time-specific shall be in accordance with the effective date of the permit, which defines day one.
[Rule 62-213.440, F.A.C.]

Reporting Requirements

15. Annual Statement of Compliance. The annual statement of compliance pursuant to Rule 62-213.440(3)(a)2., F.A.C., shall be submitted to the Department, the Pinellas County Department of Environmental Management, and the USEPA within 60 (sixty) days after the end of the calendar year using DEP Form No. 62-213.900(7), F.A.C.
[Rules 62-213.440(3) and 62-213.900, F.A.C.]

(Permitting Note: This condition implements the requirements of Rules 62-213.440(3)(a)2. & 3., F.A.C. (see Condition 51. of APPENDIX TV-4, TITLE V CONDITIONS).)

16. Annual Operating Report (AOR). The Annual Operating Report shall be submitted to the Air Program of the Department's Southwest District office and the Air Quality Division of the Pinellas County Department of Environmental Management. (See *Appendix TV-4, Condition 24.*)
[Rule 62-210.370(3), F.A.C.]

17. USEPA Submittals - Any reports, data, notifications, certifications, and requests required to be sent to the United States Environmental Protection Agency, Region 4, should be sent to:

United States Environmental Protection Agency, Region 4
Air, Pesticides & Toxics Management Division
Air and EPCRA Enforcement Branch, Air Enforcement Section
61 Forsyth Street
Atlanta, Georgia 30303
Telephone: 404/562-9155, Fax: 404/562-9163

18. State/Local Notifications/Reports - The permittee shall submit all compliance related notifications and reports required of this permit to the to the Air Compliance Section of the SW District office of the Department and the Pinellas County Dept. of Environmental Management at the addresses shown below:

Department of Environmental Protection
Southwest District Office
3804 Coconut Palm Drive
Tampa, Florida 33619-8218
Telephone: 813/744-6100 Fax: 813/744-6458

Pinellas County Department of Environmental Management,
Air Quality Division
300 South Garden Avenue
Clearwater, FL 30756
Telephone: 727/464-4422 Fax 727/464-4420

Other Requirements

19. Certification by Responsible Official (RO). In addition to the professional engineering certification required for applications by Rule 62-4.050(3), F.A.C., any application form, report, compliance statement, compliance plan and compliance schedule submitted pursuant to Chapter 62-213, F.A.C., shall contain a certification signed by a responsible official that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. Any responsible official who fails to submit any required information or who has submitted incorrect information shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary information or correct information. [Rule 62-213.420(4), F.A.C.]

20. Prevention of Accidental Releases (Section 112(r) of Clean Air Act).

a. The permittee shall submit its Risk Management Plan (RMP) to the Chemical Emergency Preparedness and Prevention Office (CEPPO) RMP Reporting Center when, and if, such requirement becomes applicable. Any Risk Management Plans, original submittals, revisions or updates to submittals, should be sent to:

RMP Reporting Center
Post Office Box 3346
Merrifield, VA 22116-3346
Telephone: 703/816-4434

and,

b. The permittee shall submit to the permitting authority Title V certification forms or a compliance schedule in accordance with Rule 62-213.440(2), F.A.C.

NOTES TO PERMITTEE:

Please reference the Permit No., Facility ID No., and appropriate Emissions Unit(s) ID No(s). on all correspondence, test report submittals, applications, etc.

IMPORTANT: Please note the following Title V submittal requirements contained in Appendix TV-4 (TITLE V CONDITIONS):

- Annual Operating Report (AOR) - see Appendix TV- 4, item 24
- Annual Statement of Compliance - see Appendix TV-4, item 51
- Permit Renewal Application - see Appendix TV-4, item 5

Section III. Emissions Unit(s) and Conditions.

Subsection A. This section addresses the following emissions unit(s).

| <u>E.U. ID No.</u> | <u>Brief Description</u> |
|--------------------|--|
| 003 | Batch reactor system to produce toluene diisocyanate dimer |

This emission unit is a batch reactor system to produce *Thanacure (T9)*, a toluene-diisocyanate dimer that acts as a plastics & rubber adhesion promoter. *Thanacure (T9)* is produced via a catalyzed (tri-n-butylphosphene) reaction of toluene diisocyanate monomer under pressure. The production system consists primarily of (1) a 3300-gallon reactor vessel, (2) two used-toluene storage tanks (one 3700-gallon and another 4000-gallon), (3) a 5700-gallon virgin-toluene storage tank, (4) a 6000-gallon toluene-diisocyanate monomer-storage tank, (5) a centrifuge, (6) a dryer, and associated pumps, valves, and piping. Excess toluene is needed in the reaction to obtain adequate conversion, and the potential emission of toluene, a hazardous air pollutant (HAP), from the batch reactor system is greater than 10 tons per year.

The reactor vessel is typically charged with 6,000 pounds. of monomer and 22,600 pounds of toluene under vacuum. After 12-48 hours of reaction time, the contents of the reactor are fed to a centrifuge in approximately 4,000 pound aliquots. The supernatant and first rinse of the centrifuge's contents are directed back to the "mother liquor" storage tank for subsequent reuse. (Additional rinses of the centrifuge's contents are directed to the "rinse" storage tank.) Then, the centrifuge's content, the product, is dumped into the dryer via a discharge chute, and the centrifuge's drum is scraped clean. Hot oil (heated by a 3.7 MMBtu/hour natural-gas-fired heater) is circulated through the dryer's jacket, and the product is tumbled until dry. Later, the product is dumped into containers for specification testing and resale. A contractor's distillation rig is brought up as needed to recover toluene when the "mother liquor" tank's contents become too laden with unreacted monomer.

Emissions of toluene are reduced by several methods: (1) a nitrogen blanket (N₂ controls) is maintained on the reactor vessel and on all tanks as a safety measure and to limit emissions via the tank vents; and (2) a refrigerated condenser (toluene condenser) is used to collect and condense toluene vapor generated by the dryer. CAM is not applicable to this emission unit.

Fugitive emissions of toluene are expected from the transfer of product into and out of the dryer. Cleaning operations use isopropanol, methyl ethyl ketone, N-methyl pyrrolidone, and ethanol. Laboratory analyses use small quantities of other HAPs (one gallon/year).

IMPORTANT REGULATORY CLASSIFICATIONS - This emission unit is subject to 40 CFR 63 NESHAP Subpart FFFF – National Emission Standard for Miscellaneous Organic Chemical Manufacturing, adopted and incorporated by reference in Rule 62-204.800. (*Note: As an existing source on November 10, 2003, this facility must comply with the requirements for existing sources in this subpart no later than November 10, 2006.*)

The following specific conditions apply to the emissions unit(s) listed above:

Essential Potential to Emit (PTE) Parameters

A1. Maximum Production Rate - This facility is permitted for a maximum toluene-diisocyanate dimer production rate of 300,000 pounds (lbs) per any 12-consecutive-month period.

[Rule 62-210.200(PTE), F.A.C., and construction permit 1030207-003-AC]

Emission Limitations and Operation Requirements

A2. 40 CFR 63 NESHAP Requirements – This emission unit is subject to and shall comply with the applicable requirements of 40 CFR 63 (National Emission Standards for Hazardous Air Pollutants (NESHAP) Subpart FFFF (Miscellaneous Organic Chemical Manufacturing), as well as the applicable provisions of 40 CFR 63 Subpart A (General Provisions for 40 CFR 63 NESHAPs), contained in the attached Appendix FFFF.

→ See the following attached appendix:

- **Appendix FFFF** (Standard Conditions for 40 CFR 63 NESHAP Subpart FFFF - National Emission Standard for Miscellaneous Organic Chemical Manufacturing, which also includes the applicable provisions of 40 CFR 63 Subpart A - General Provisions for 40 CFR 63 NESHAP)

(Compliance Note: In accordance with 40 CFR 63.2445, this facility must comply with the requirements for existing sources in this subpart no later than November 10, 2006.)

[Rules 62-204.800(10)(b)1.; 40 CFR 63 Subparts FFFF and A]

A3. Emission Control System Circumvention and Operation – The permittee shall not circumvent any air pollution control devices or allow the emissions of air pollutants without the applicable air pollution control devices (*i.e. nitrogen (N₂) controls and toluene condenser*) operating properly. Emission control system operating procedures shall include the following.

- a. To verify nitrogen flow, the permittee shall operate and maintain a rotameter or other gas flow meter in the nitrogen-supply line to each process and storage vessel that stores or receives toluene and is equipped with a “conservation vent”.
- b. The permittee shall ensure that adequate nitrogen gas is available on demand to each process and storage vessel and that the nitrogen-supply line to each process and storage vessel that stores or receives toluene is not closed. Each process and storage vessel shall be properly labeled.

[Rules 62-210.650, 62-213.420((3)(e), 62-440(1)(b), and 62-4.070(3) F.A.C.; construction permit 1030207-003-AC]

Operation and Maintenance Plans

A4. O&M Plan - The attached Operation and Maintenance (O&M) Plans (for N₂ Controls and Toluene condenser), and subsequent revisions approved by the PCDEM shall be followed. The O&M Plan documentation logs shall be maintained for a minimum of five years. At a minimum the O&M Plan shall also include (*where applicable*):

- a. The operating parameters of the control device.
- b. Time table for the routine maintenance of the pollution control device as specified by the manufacturer.
- c. Time table of routine periodic observations of the pollution control device sufficient to ensure proper operation
- d. A list of the type and quantity of the required spare parts for the pollution control device which are stored on the premises.
- e. A record log which will indicate, at a minimum:
 1. When maintenance and observations were performed.
 2. What maintenance and observations were performed.
 3. Who performed said maintenance and observations and
 4. Acceptable parameter ranges for each operational check.

[Pinellas County Code, Section 58-128; Rule 62-210.650, F.A.C.; construction permit 1030207-003-AC]

Compliance Recordkeeping Requirements

A5. Production Records - In order to document compliance with the production limitations of Specific Condition No. A1., the permittee shall maintain the following monthly production records:

- a. monthly production of toluene-diisocyanate dimer (lbs or tons/month);
- b. the total production for the most recent 12 consecutive month period (tons/12 consecutive months)

These records shall be completed no later than 15 days after the end of the month.
[Rule 62-4.070(3), F.A.C.; construction permit 1030207-003-AC]