FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest District Office
13051 North Telecom Parkway
Temple Terrace, Florida 33637-0926

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SECRETARY

FINAL PERMITS

PERMITTEE

TSE Industries, Inc.
5260 113th Avenue North
Clearwater, FL 33670

Authorized Representative:
Mr.Richard K. Klingel, President

Air Permit Nos. 1030207-012-AC
1030207-013-AO
Permits Expire: 05/31/2014 (AC)
02/09/2016 (AO)
Minor Air Construction and Operation Permits
Request to increase permitted throughput.

These are the final air construction and operation permits, in one document. Construction Permit 1030207-012-AC is to allow an increase in production of toluene diisocyanate dimer from 150,000 pounds per year (lb/yr) to 300,000 lb/yr while retaining present emissions levels. Operation Permit 1030207-013-AO is for continued operation of this facility and incorporates the terms and conditions of Construction Permit 1030207-012-AC. The work is conducted at the rubber and plastics plant (Standard Industrial Classification No. 3069). The facility is located in Pinellas County at 5260 113th Avenue North (Main Plant) and 4370 112th Terrace North (Secondary Plant) in Clearwater, Florida. The UTM coordinates are Zone 17, 332.11 km East, and 3084.43 km North (Main Plant) and 333.33 km East, and 3084.43 km North (Secondary Plant). As noted in the Final Determination provided with these final permits, no changes or only minor changes and clarifications were made to the draft permits.

This final document is organized by the following sections:

Section 1. General Information

Section 2. Administrative Requirements and Facility-wide Specific Conditions

Section 3. Emissions Unit Specific Conditions

Section 4. Appendices

Due to the technical nature of the project, this document contains numerous acronyms and abbreviations, which are defined in Appendix A of Section 4 of this document.

These air pollution permits are 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 these permits. 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 these final permits, 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.

Executed in Hillsborough County, Florida

_____ _____

Kelley M. Boatwright
District Air Program Administrator
Southwest District

Effective Date

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Final Air Permit package (including the Final Determination, the Final Permits and the Appendices) was sent by electronic mail (or a link to these documents made available electronically on a publicly accessible server) with received receipt requested before the close of business on the date indicated to the persons listed below.

Richard K. Klingel, TSE Industries, Inc., Rick.Klingel@TSE-Industries.com

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Sherrill Culliver, Pinellas County Air Quality Division, sculliver@co.pinellas.fl.us

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to Section 120.52(7), Florida Statutes, with the designated agency clerk, receipt of which is hereby acknowledged.

_____ _____

(Clerk) (Date)

FACILITY AND PROJECT DESCRIPTION

Existing Facility

TSE Industries, Inc. manufactures, mills, stamps, and molds urethane rubber and plastic. The facility covered by this permit consists of operations at two nearby plants in Clearwater: (1) a main material production facility located at 5260 113th Avenue North where the batch reactor system is used to produce an adhesion promoter for plastic and rubber products.; and (2) a secondary facility located at 4370 112th Terrace North, which typically acts as a finishing point for the overall production process of several rubber/plastic products. The existing facility consists of the following emissions units:

Facility ID No. 1030207

EU ID No.	Emissions Unit Description
002	VOC and HAP Emissions
003	Batch reactor system to produce toluene diisocyanate dimer

Project Description and Affected/Proposed Emission Units

This project will allow an increase in production of diisocyanate dimer from 150,000 lb/yr to 300,000 lb/yr while maintaining current emissions limits. This project will modify the following emissions units (EUs).

EU ID No.	Emissions Unit Description
003	Batch reactor system to produce toluene diisocyanate dimer

NOTE: *Please reference the Permit No., Facility ID, and Emission Unit ID in all correspondence, test report submittals, applications, etc.*

Exempt Emission Sources/Activities

Main Facility – 5260 113th Avenue North, Clearwater

a. Two 0.7 MMBtu/hour natural gas fired ovens used to cure millable polyurethane. *

b. One 61,417 Btu/hour natural gas-fired oil heater. *

c. Pilot plant operations with five small reactors (5, 20, 25 and two 250 gallons) used for research and process development of polyurethane products. *

d. One 10-liter skid used in the lab for research and development. *

Auxiliary facility – 4370 112th Terrace North, Clearwater

a. One 3.35 MMBtu/hour natural gas fired boiler used to heat an autoclave (used to cure rubber extrusions). **

b. Rubber compounding process where rubber is worked in mills to enhance pliability for extrusions molds, etc. Cures and additives are introduced into the rubber on an infrequent basis. *

c. Rubber Products manufacturing where uncured rubber is molded in electrically heated presses and then ground to finish tolerances. *

d. Plastics machining where several types of hard plastic are machined to finish specification. *

** Activity is considered exempt from permitting pursuant to the Generic Emissions Unit Exemption in Rule 62-210.300(3)(b)1., F.A.C.*

*** Activity is considered exempt from permitting pursuant to the Categorical Exemptions in Rule 62-210.300(3)(a), F.A.C.*

FACILITY REGULATORY CLASSIFICATION

- The facility is not a major source of hazardous air pollutants (HAPs).
- The facility has no units subject to the acid rain provisions of the Clean Air Act (CAA).
- The facility is not a Title V major source of air pollution in accordance with Chapter 62-213, F.A.C.
- The facility is not a major stationary source in accordance with Rule 62-212.400(PSD), F.A.C.
- This facility is a synthetic non-Title V source for the pollutants Volatile Organic Compounds (VOC) and Hazardous Air Pollutants (HAP). The emission limitations, restriction on the type or amount of material stored or processed in this permit will ensure that the facility's VOC and HAP emissions will be below the threshold for a Title V source.

PERMIT HISTORY/AFFECTED PERMITS

This permit replaces combined Construction/Operation Permit Nos. 1030207-009-AC/1030207-011-AO.

ADMINISTRATIVE REQUIREMENTS

1. Permitting Authority - The permitting authority for this project is the Florida Department of Environmental Protection (Department), Southwest District Office's Air Resource Management Section. The mailing address and phone number is:

Florida Department of Environmental Protection
Southwest District Office
Air Permitting Program
13051 North Telecom Parkway
Temple Terrace, Florida 33637-0926
Telephone: 813-470-5700

All documents related to applications for permits shall be submitted to the above address.

2. Compliance Authority - All documents related to compliance activities such as reports, tests, and notifications shall be submitted to Pinellas County Air Quality Division. The mailing address and phone number is:

Pinellas County Air Quality Division
509 East Avenue South, Suite 138
Clearwater, Florida 33756
Telephone: 727-464-4422

3. Appendices - The following Appendices are attached as part of this permit:

a. Appendix A. Citation Formats and Glossary of Common Terms;
b. Appendix B. General Conditions;
c. Appendix C. Common Conditions; and
d. 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 - Unless otherwise exempt by rule, the permittee shall not initiate any construction, reconstruction, or modification at the facility and shall not install/modify any pollution control device at the facility without obtaining prior authorization from the Department. Modification is defined as: Any physical change or changes in the method of operations or addition to a facility that would result in an increase in the actual emissions of any air pollutant subject to air regulations, including any not previously emitted, from any emission unit or facility.
[Rules 62-210.200 - Definition of "Modification" and 62-210.300(1)(a), F.A.C.]

7. Annual Operating Report - On or before **April 1** of each year, the permittee shall submit a completed DEP Form 62-210.900(5), "Annual Operating Report for Air Pollutant Emitting Facility" (AOR) for the preceding calendar year. The report may be submitted electronically in accordance with the instructions received with the AOR package sent by the Department, or a hardcopy may be sent to the Compliance Authority. [Rule 62-210.370(3), F.A.C.]

8. Operation Permit Renewal Application - A completed application for renewal of the operation permit shall be submitted to the Permitting Authority with a copy to Pinellas County Air Quality Division (Compliance Authority) no later than 60 days prior to the expiration date of the operation permit. To properly apply for an operation permit, the applicant shall submit the following:

a. the appropriate permit application form *(see current version of Rule 62-210.900, F.A.C. (Forms and Instructions), and/or FDEP Division of Air Resource Management website at: http://www.dep.state.fl.us/air/)*;

b. the appropriate operation permit application fee from Rule 62-4.050(4)(a), F.A.C.;

c. copies of the most recent month of records/logs specified in Specific Condition Nos. A.4., B.1. and C.3.; and

d. any proposed revisions to the most recently approved O & M Plan (Pinellas County Air Quality Division).

[Rules 62-4.030, 62-4.050, 62-4.070(3), 62-4.090, 62-210.300(2), and 62-210.900, F.A.C.]

FACILITY-WIDE REQUIREMENTS

9. 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 No. 1030207-012-AC]

A. EU Nos. 002 & 003, VOC and HAP Emissions and Batch reactor system

This section of the permit addresses the following emissions units (EUs).

EU ID No.	Emissions Unit Description
002	VOC and HAP Emissions
003	Batch reactor system to produce toluene diisocyanate dimer

PERFORMANCE RESTRICTIONS

A.1. Restricted Operation - The hours of operation are not limited (8760 hours per year).
[Rules 62-4.070(3) and 62-210.200 (definition of Potential to Emit), F.A.C.]

EMISSIONS STANDARDS

A.2. VOC/HAP Emissions Standard - VOC and HAP emissions from EU Nos. 002 and 003 shall not exceed the following limits:

Pollutant	Allowable Emission (tons per any consecutive 12-month period)
Volatile Organic Compounds (VOCs)	29.75
Total Hazardous Air Pollutants (Total HAPs)	24.5
Any Individual Hazardous Air Pollutant (Individual HAP)	9.9

Permitting note: because the above allowable emissions are very close to the Title V threshold, this facility may not qualify for additional exempt activities.

[Rule 62-210.200, F.A.C.; Construction Permit No. 1030207-012-AC]

RECORDKEEPING AND REPORTING REQUIREMENTS

A.3. Operational Data - The permittee shall maintain adequate records to demonstrate compliance with the emission limitations in Specific Condition No. A.2. See Specific Condition Nos. B.1. and C.3. for additional recordkeeping requirements.
[Rule 62-4.070(3), F.A.C.; Construction Permit No. 1030207-012-AC]

A.4. Daily and/or Monthly Log - The permittee shall complete all daily records required by this permit within ten (10) calendar days and all monthly records shall be completed by the 15th day of the following month. All records required by this permit shall be maintained at the facility for at least three (3) years, and be made available to the Department or PCAQD upon request.
[Rule 62-4.070(3), F.A.C.; Construction Permit No. 1030207-012-AC]

B. EU No. 002 VOC and HAP Emissions

This section of the permit addresses the following emissions unit (EU).

EU ID No.	Emissions Unit Description
002	VOC and HAP Emissions This emissions unit consists of facility-wide fugitive VOC and HAP emissions generated from solvent cleaning activities, quality control, miscellaneous laboratory chemical usage and other associated activities. This emissions unit also includes emissions from laboratory analysis and cleaning activities associated with the TDI Dimer batch reactor system (i.e. EU No. 003) and emissions from the exempt activities (see Pages 3 and 4) that use small amounts of solvents and/or other VOC/HAP-containing material.

RECORDKEEPING AND REPORTING REQUIREMENTS

B.1. Monthly Log for VOC/HAP - The permittee shall demonstrate compliance with the VOC and HAP limitations of Specific Condition No. A.2., by maintaining a monthly VOC and HAP emissions log, which includes the following:

a. Facility name, Facility ID No. (1030207), Emission Unit No. (002);

b. Month and year of the record;

c. The usage of each solvent and other VOC/HAP-containing material;

d. The VOC and HAP content in each solvent and any other VOC/HAP-containing material;

e. The VOC, total HAP and each individual HAP emissions for the month (tons); and

f. The most recent consecutive 12-month total emissions of VOC, total HAP and each individual HAP (tons).

[Rule 62-4.070(3), F.A.C.; Construction Permit No. 1030207-012-AC]

B.2. Documentation - Appropriate records to support the calculations of VOC/HAP emissions, including Material Safety Data Sheets (MSDS), EPA data sheets, mass-fraction analyses, purchase orders, tank soundings, and distillation-bottom analyses shall be maintained at the facility and be made available to the Department and the PCAQD upon request. Records verifying the non-VOC or non-HAP quality of other materials shall also be maintained.
[Rule 62-4.070(3), F.A.C.; Construction Permit No. 1030207-012-AC]

C. EU No. 002 VOC and HAP Emissions

This section of the permit addresses the following emissions unit (EU).

EU ID No.	Emissions Unit Description
003	Batch reactor system to produce toluene diisocyanate dimer This emissions unit is located at the main production plant and consists of a batch reactor system that converts toluene diisocyanate (TDI) monomer to TDI dimer, producing Thanacure T9 (T9), an adhesive used to bond rubber and plastics. T9 is produced via a catalyzed (tri-n-butylphosphine) reaction of toluene-diisocyanate monomer under pressure. The production system consists primarily of the following items: (1) A 500-gallon reactor vessel; (2) Two 500-gallon solvent storage tanks; (3) A 2000-gallon virgin solvent storage tank; (4) A 6000-gallon toluene-diisocyanate monomer-storage tank; (5) A centrifuge; (6) A dryer; (7) A distillation unit; and (8) Associated pumps, condenser, valves, condensation and conservation vents, and piping. The reactor vessel is typically charged with monomer and solvent (toluene or other solvents) under vacuum. After reaction time, the contents of the reactor are fed to a centrifuge in several loads. The rinses of the centrifuge's contents are directed back to the process solvent storage tanks for distillation and subsequent reuse. The centrifuge's content, the product, is then transferred into the dryer via a discharge chute. Hot oil (heated by a 61,417 Btu/hour natural-gas-fired heater) is circulated through the dryer's jacket, and the product is tumbled until dry. Once dried, the product is transferred into containers for testing and distribution. Emissions of the reactor solvent are reduced by the following methods: (1) a nitrogen blanket 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 is used to collect and condense reactor solvent vapor generated by the dryer. Fugitive emissions covered by this emissions unit are emissions of reactor solvent from the transfer of product into and out of the dryer, centrifuge filter changes, and still bottom removal. *Note to compliance staff: Toluene diisocyanate (TDI) is a toxic and highly reactive compound. It should be kept in closed isolated systems and transferred with care. Please discuss safety precautions with the facility prior to inspecting this emissions unit.*

C. EU No. 002 VOC and HAP Emissions

PERFORMANCE RESTRICTIONS

C.1. Permitted Capacity - This emission unit is limited to produce 300,000 lbs of toluene diisocyanate (TDI) dimer per any consecutive 12-month period.
[Rule 62-210.200 (definition of Potential to Emit), F.A.C.; Construction Permit No. 1030207-012-AC]

C.2. 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 blanket and solvent 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 the batch reactor system solvent 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 the batch reactor system is not closed. Each process and storage vessel shall be properly labeled.

[Rules 62-210.650 and 62-4.070(3) F.A.C.; Construction Permit No. 1030207-012-AC]

RECORDKEEPING AND REPORTING REQUIREMENTS

C.3. Monthly Log for TDI Dimer Production - The permittee shall maintain monthly records to document compliance with the limitation of Specific Condition Nos. A.2. and C.1., which include the following:

a. Facility name, Facility ID No. (1030207), Emission Unit ID No. (EU-003)

b. Month and year of the record;

c. Total TDI dimer production (lbs);

d. Total cumulative TDI dimer production for the most recent 12 consecutive month period (lbs).

e. Mass of each vessel's contents (or active volume and specific gravity of contents);

f. Mass fraction of total VOC and each HAP in each vessel;

g. Mass of VOC and each HAP in each vessel;

h. Mass of VOC and each HAP received for the month;

i. Mass of VOC and each HAP removed (as still bottoms or otherwise disposed of) for the month;

j. VOC, each individual HAP and total HAP emissions for the month based on mass balance (tons);

k. VOC, each individual HAP and total HAP emissions for the most recent consecutive 12-month period (tons).

[Rule 62-4.070(3), F.A.C.; Construction Permit No. 1030207-012-AC]

{Permitting Note: Due to the viscosity and adhesiveness of the material produced, it is not always possible to get an accurate volume reading of the contents in each vessel. This leads to readings indicating that there is less toluene in the system than there actually is. These discrepancies normally self-correct when make-up toluene is added to the system, which occurs on an as-needed basis. This can lead to the recordkeeping spreadsheet calculating a negative mass balance entry for the month after an addition as the measurement error is corrected by the process. This has a minimal effect on the annual average used to determine compliance with the permit conditions.}

C.4. Operation and Maintenance (O&M) Plan - The permittee shall submit an O&M Plan for the nitrogen controls and the solvent condenser no later than 60 days after the effective date of this permit. The O&M Plan may be amended with the prior approval of the PCAQD. The O&M Plan documentation logs shall be maintained for a minimum of three years. The logs shall be made available, for inspection by the Department and/or the PCAQD, upon request. At a minimum, the O&M Plan shall include (where applicable):

a. The operating parameters of the control device.

b. Timetable for the routine maintenance of the pollution control device as specified by the manufacturer.

c. Timetable 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.

[Rule 62-210.650, F.A.C.; Pinellas County Code, Section 58-128]