

ENGINEERING ANALYSIS
Hyundai Transys Georgia Seating System, LLC
Automotive Seat Manufacturing

Introduction

On August 26, 2026, the Department received an application from Hyundai Transys Georgia Seating System, LLC (Hyundai Transys) in Montgomery, AL. Hyundai Transys currently manufactures foam seat cushions and assembles seats for automobile applications. With the submittal of this application, Hyundai Transys updated volatile organic compound (VOC) emissions to accurately account for the use of mold release agent and anti-squeak liquid.

Background

Hyundai Transys currently has no air permits. Applications for air permits have been previously submitted. The Department determined that no air permit was required and issued a letter in May of 2022 stating that no air permits were required.

Process Description

The facility's operations include raw materials receiving and storage areas, a polyurethane foam (PU) pouring line, an assembly line, final product storage and shipping areas, and ancillary equipment. The facility is equipped with an 800 kW diesel-fired emergency generator with a 654-gallon diesel storage tank and a 131-kW diesel-fired fire pump with a 240-gallon diesel storage tank.

Automobile seat foam inserts are manufactured using polyols and isocyanates as the foam reactants, which are stored in one of six 8,700-gallon storage tanks. Before the reactants are poured into the molds, the molds are sprayed with a release agent. Once cured, the foam cushions are removed, crushed, trimmed, and sprayed with anti-squeak liquid. The cushions are sent to the assembly line where the seat frames, cushions, seat heating pads, seat control levers, and leather or fabric seat covers are assembled.

Control Equipment

The foam production line utilizes a dust collector system to control particulate emissions. The Wind Tech dust collector (DC01) collects emissions from the pouring, demolding, crushing, and trimming areas and has a designed control efficiency of 99.9%. A voluntary activated carbon tower (BH1) is used for odor control, which the facility does not take VOC and/or hazardous air pollutant (HAP) reduction credit for.

Emissions

The facility generates particulate matter (PM) emissions from the trimming and processing of foam cushions. All PM emissions are assumed to be PM less than 2.5 microns. VOC and HAP emissions from the polyols and isocyanates reactants used in the foam production process are minimal due to their low vapor pressure and polymerization in the foam reaction. VOC and HAP emissions from the application of the mold release agent and anti-squeak are estimated using a mass-balance approach and assuming the volatiles are evaporated and emitted in whole.

Potential to emit (PTE) estimates from each operation of the facility, as well as the total facility-wide emissions estimates, are included in the table below in tons per year (TPY).

Operation	PTE, TPY					
	CO	NO _x	Total PM	SO ₂	VOC	Total HAP
Dust Collector DC01	-	-	1.59	-	-	-
Foam Operation: Release Agent	-	-	-	-	104.14	-
Foam Operation: Anti-Squeak	-	-	-	-	0.44	-
Foam Operation: Foam Reactants	-	-	-	-	6.77E-03	6.77E-03
Fire Pump	0.25	0.29	0.10	4.78E-04	0.11	1.19E-03
Emergency Generator	1.54	2.84	0.10	3.25E-03	0.19	2.96E-03
Tank Emissions	-	-	-	-	0.03	4.00E-04
Total	1.79	3.13	1.79	3.73E-03	104.91	0.01

The estimated facility wide actual VOC emissions for previous operating years can be seen below.

Calendar Year	VOC Emissions (TPY)
2023	3.31
2024	38.41
2025	40.56

The facility's PTE for VOC is above the major threshold for Title V. The facility is requesting a Synthetic Minor Operating Permit to operate under a facility wide VOC emission limit of 95 TPY, which will be achieved by limiting material usage.

Prevention of Significant Deterioration (PSD)

Hyundai Transys does not fall under one of the 28 categories that has a major source threshold of 100 TPY for all regulated pollutants. This facility is not subject to PSD because potential annual emissions are less than 250 tons of regulated pollutants, and automotive seat manufacturing is not a listed source in ADEM Code R. 335-3-14-.04. Therefore, this facility will remain a minor source with respect to PSD.

Title V

To be considered a major source with respect to Title V, a facility must have the potential to emit greater than 100 TPY of any criteria pollutant, greater than 10 TPY of any individual HAP, or greater than 25 TPY of total HAPs. Hyundai Transys has proposed to limit the potential VOC emissions from the facility to 95 TPY by limiting material usage. Therefore, Hyundai Transys would be considered a synthetic minor source with respect to Title V.

New Source Performance Standards (NSPS)

The NSPS, Subpart IIII "Standards of Performance for Compression Ignition Internal Combustion Engines" is applicable to the 800-kW diesel-fired emergency generator and 131-kW diesel-fired fire pump. These units will comply with the recordkeeping and operational limitations as well as any other applicable requirements of Subpart IIII.

The NSPS, Subpart Kb “Standards of Performance for Volatile Organic Liquid Storage Vessels for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984, and On or Before October 4, 2023” is not applicable to the six storage tanks at the facility. Subpart Kb applies to storage tanks with capacities of 75 cubic meters (19,813 gallons). All six tanks at the facility have capacities of 8,700 gallons.

The NSPS, Subpart Kc “Standards of Performance for Volatile Organic Liquid Storage Vessels for Which Construction, Reconstruction, or Modification Commenced After October 4, 2023” is not applicable to the six storage tanks at the facility. Subpart Kc applies to storage tanks with capacities of 20,000 gallons. All six tanks at the facility have capacities of 8,700 gallons.

National Emissions Standards for Hazardous Air Pollutants (NESHAP)

The NESHAP, Subpart ZZZZ “National Emission Standards for Stationary Reciprocating Internal Combustion Engines” is applicable to the 800-kW diesel-fired emergency generator and 131-kW diesel-fired fire pump. These units will comply with requirements of Subpart ZZZZ by satisfying the requirements of NSPS Subpart IIII.

The NESHAP, Subpart OOOOOO “National Emission Standards for Hazardous Air Pollutants for Flexible Polyurethane Foam Production and Fabrication Area Sources” is applicable to the foam production process. As required by §63.11416(c), the owner or operator of a facility subject to this subpart must not use a material containing methylene chloride as an equipment cleaner and must not use a mold release agent containing methylene chloride. Affected facilities should also comply with the requirements of §63.11417.

State Regulations

Hyundai Transys is subject to the opacity limits stated in ADEM Code R. 335-3-4-.01. General operations must also minimize fugitive dust and emissions per ADEM Code R. 335-3-4-.02.

The facility is located in Montgomery County, which is a Class 1 County as stated in Appendix A of ADEM Admin. Code R. 335-3. Therefore, this facility is subject to the process weight curve $E = 3.59P^{0.62}$ (where E is emissions in pounds per hour and P is the process weight per hour in tons per hour), per ADEM Code R. 335-3-4-.04(1).

Montgomery County is currently classified as a Category II County, as stated in Appendix B of ADEM Admin. Code R. 335-3. Therefore, the fuel burning equipment located at the facility is subject to the Category II County sulfur dioxide (SO₂) limit of 4.0 lb/MMBtu.

Public Notice

Hyundai Transys will be a new synthetic minor source. Therefore, the permit would be required to undergo a 15-day public notice period.

Recommendation

Since it appears that the facility will be capable of meeting all applicable state and federal regulations, I recommend that a Synthetic Minor Operating Permit for the automotive seating line operation be issued to Hyundai Transys pending resolution of any comments received during a 15-day public comment period.

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Date

KGP:kgp