

**NORTH CAROLINA DIVISION OF
AIR QUALITY**

Application Review

Issue Date:

Region: Raleigh Regional Office
County: Franklin
NC Facility ID: 3500078
Inspector's Name: Maureen Conner
Date of Last Inspection: 09/14/2017
Compliance Code: 3 / Compliance - inspection

Facility Data Applicant (Facility's Name): Majestic Marble and Glass Company - Youngsville Facility Address: Majestic Marble and Glass Company - Youngsville 117 Franklin Park Drive Youngsville, NC 27596 SIC: 3089 / Plastics Products, Nec NAICS: 326199 / All Other Plastics Product Manufacturing Facility Classification: Before: Title V After: Fee Classification: Before: Title V After:			Permit Applicability (this application only) SIP: 02D .0515, 02D .0521, 02D .1111 (WWW), 02D .1806 NSPS: NESHAP: Subpart WWW PSD: PSD Avoidance: 02Q .0317 NC Toxics: 02D .1100, 02Q .0711 112(r): Other:				
Contact Data			Application Data Application Number: 3500078.15A, 3500078.17A Date Received: 06/24/2015 and 10/31/2017 Application Type: Renewal/Modification Application Schedule: TV-Renewal Existing Permit Data Existing Permit Number: 09566/T01 Existing Permit Issue Date: 05/10/2011 Existing Permit Expiration Date: 04/30/2016				
Facility Contact Bobby Medlin Division manager (919) 761-5090 117 Franklin Park Drive Youngsville, NC 27596	Authorized Contact Bobby Medlin Division manager (919) 761-5090 117 Franklin Park Drive Youngsville, NC 27596	Technical Contact Mike Spence Analyst (919) 761-5132 Jeffrey Way Youngsville, NC 27596					
Total Actual emissions in TONS/YEAR:							
CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2016	---	---	13.09	---	---	13.09	12.94 [Styrene]
2015	---	---	12.99	---	---	12.99	12.90 [Styrene]
2014	---	---	11.77	---	---	11.76	11.67 [Styrene]
2013	---	---	13.40	---	---	13.42	13.28 [Styrene]
2012	---	---	9.98	---	---	9.98	9.87 [Styrene]
Review Engineer: Urva Patel Review Engineer's Signature: Date:					Comments / Recommendations: Issue 09566/T02 Permit Issue Date: Permit Expiration Date:		

1. Purpose of Application:

This Permit Review is a consolidation of two different applications. (**Application Nos. 3500078.15A and 3500078.17A**)

Application ID No. 3500078.15A

Currently, Majestic Marble and Glass Company – Youngsville holds Title V Permit No. 09566T01 with an expiration date of April 30, 2016. The Title V renewal application (**Application No. 3500078.15A**) was received on June 24, 2015, or at least nine months prior to the expiration date of the Title V permit, as required by General Permit Condition 3.K. Therefore, Air Permit No. 09566T01 shall not expire until the renewal permit has been issued or denied. All terms and conditions of the existing permit shall remain in effect until the renewal permit has been issued or denied.

The following modification is requested to the Majestic Marble and Glass Company – Youngsville permit:

- Requested to delete “ES5 – Automated Resin Pouring Machine”.
- To allow higher styrene content in resin from 32% to 34% by weight and decrease allowable gallons per hour processed from 80.8 gallons per hour to 76.1 gallons per hour.

Application ID No. 3500078.17A

This application is submitted for Title V permit 502(b)(10) changes for addition of a spray booth for mold building and repair in accordance with 15A NCAC 02Q .0523. This change is neither a modification under Title I of the Federal Clean Air Act nor cause the allowable emissions under the permit to be exceeded as described in General Permit Condition 3.H. Therefore, the modification qualifies as a 502(b)(10) change.

2. Facility Description:

Majestic Marble and Glass Company – Youngsville is a cultured marble products manufacturing facility located in Youngsville, Franklin County, North Carolina.

Majestic Marble manufactures fiberglass molded cultured marble products such as molded sink tops, spa tubs and shower units using applied gel coat and poured resin (marble/styrene matrix). The fiberglass molds are coated with gel coat by low pressure, airless manual spray guns. The catalyst (MEK-peroxide) is added to the resin and calcium carbonate mixture and applied by an extruder to the gel coated fiberglass molds.

3. History / Background / Application Chronology:

Permit History Since Last Permit Renewal

May 10, 2011 Air Quality Permit No. 09566T01 issued with an expiration date of April 30, 2016.

Application Chronology

June 24, 2015	Received application for Title V renewal.
July 1, 2015	Sent acknowledgement letter indicating that the application for permit renewal was complete.
October 31, 2017	Received application for Title V Permit 502(b)(10) changes.
November 16, 2017	Sent notification letter indicating that the application for Title V Permit 502(b)(10) changes was received and it is an insignificant activity. (On review, it was determined the change is not an insignificant activity. Please, see Section 6 for more detailed information)

4. Summary of Changes to the Existing Permit (Permit No. 09566T01):

Page No.	Section	Description of Changes
Cover Letter	N/A	<ul style="list-style-type: none">• Updated cover letter with application number, permit numbers, dates, fee class, PSD increment statement, and Director name.
Permit Cover	N/A	<ul style="list-style-type: none">• Inserted new issuance and complete application date, application number, facility information.
3	Section 1	<ul style="list-style-type: none">• Addition of gel coat spray booth (ID No. ES8).• Removal of automated resin pouring machine (ID No. ES5).

Page No.	Section	Description of Changes
3	2.1 A. Table	<ul style="list-style-type: none"> Added “State-enforceable only” with TAP limits and Odors limits
4	2.1 A.2.c	<ul style="list-style-type: none"> Modified language of “Monitoring/Recordkeeping” to reflect the most recent shell condition.
5	2.1 B. Table	<ul style="list-style-type: none"> Added “State-enforceable only” with TAP limits and Odors limits Removal of automated resin pouring machine (ID No. ES5).
6	2.2 A	<ul style="list-style-type: none"> Removal of automated resin pouring machine (ID No. ES5). Addition of gel coat spray booth (ID No. ES8)
9	2.2 B.3.b	<ul style="list-style-type: none"> Added noncompliance statement under “Testing”
Permit	Section 2 and Section 3	<ul style="list-style-type: none"> Updating regulation references from “2D” and “2Q” to “02D” and “02Q” to be consistent with regulation nomenclature. Updated General Conditions from version 5.1 to current shell version 5.2

5. Compliance Status:

DAQ has reviewed the compliance status of this facility. During the most recent inspection conducted on September 14, 2017, Maureen Conner of the Raleigh Regional Office indicated that the facility appeared to be in compliance with all applicable requirements. Additionally, a signed Title V Compliance Certification (Form E5) indicating that the facility was in compliance with all applicable requirements was submitted with Application No. 3500078.15A on June 24, 2015.

Five-year Compliance History:

- The facility was inspected on September 14, 2016 and appeared to be in compliance with all applicable air quality regulations.
- The facility was inspected on July 9, 2015 and appeared to be in compliance with all applicable air quality regulations.
- The facility was inspected on October 30, 2013 and appeared to be in compliance with all applicable air quality regulations.
- The facility was inspected on December 12, 2012 and appeared to be in compliance with all applicable air quality regulations.

6. New/Modified Equipment/Changes in Emissions:

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The following modifications are being made to the Majestic Marble and Glass Company – Youngsville permit:

- Deleted “ES5 – Automated Resin Pouring Machine”
- Increased styrene content in resin from 32% to 34% by weight and decrease allowable gallons per hour processed from 80.8 gallons per hour to 76.1 gallons per hour
- No increase in overall emissions.

Emission Calculation:

Calculation of styrene emissions from one resin pouring machine (assuming maximum allowable styrene content):

$$= (76.1 \text{ gallons resin/hour}) \times (9.4 \text{ lbs resin/gallon resin}) \times (34\% \text{ styrene}) \times (3\% \text{ of styrene released as air emissions})$$

$$= 7.29 \text{ pounds styrene/hour}$$

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The facility is going to add a spray booth (**ID No. ES8**) for mold building and repair. This emission is like a previous spray booth (**ID No. ES3**) from their Air Permit No. 09566R00 from 2005 (which was removed for our 2010 renewal). The HAP emission will consist of Styrene and MEK (Methyl Ethyl Ketone). Resin and gelcoat usage will be added to and averaged with current usage to show MACT compliance. The facility anticipated emissions from the new source to begin November 13, 2017.

This spray booth is going to be used for 3 different operations.

1. For Atomized Spray Gel Coat Application (nonvapor-suppressed gel coat). The Emissions Factor (EF) is calculated as $EF = ((1.03646 \times \%HAP) - 0.195) \times 2000$.
 2. For Atomized Mechanical Resin Application (nonvapor-suppressed resin). $EF = ((0.714 \times \%HAP) - 0.18) \times 2000$.
 3. For Manual Resin Application (nonvapor-suppressed resin). $EF = ((0.286 \times \%HAP) - 0.0529) \times 2000$.
- Expected operating schedule: 8 hr/day, 5 day/week, 52 week/year

The potential emissions associated with the spray booth (**ID No. ES8**) are included in the table below.

Air Pollutants	Expected Actual (After Controls/Limits)	Potential Emissions (After Controls/ Limits)	Potential Emissions (Before Controls/ Limits)
Styrene	0.96 tons/yr	0.96 tons/yr	0.96 tons/yr
Methyl Ethyl Ketone	7 lb/yr	-	-

Styrene is a VOC and HAP. The uncontrolled potential emission of styrene from the proposed source is more than 1000 pounds per year (1788 pounds per year) as shown in the table above, the spray booth (**ID No. ES8**) is not considered as an insignificant activity.

The spray booth (**ID No. ES8**) is subject to all facility-wide regulations and no new regulations are added. Please, see Section 7 – Regulatory Review for more detailed information.

7. Regulatory Review

Majestic Marble and Glass Company - Youngsville is subject to the following regulations. An extensive review for each applicable regulation is not included in this document, as the facility's status with respect to these regulations has not changed. See permit review T01 dated May 10, 2011. The permit conditions have been modified to reflect the most current language, as necessary. The facility is expected to be in continued compliance.

- 15A NCAC 02D .0515 "Particulates from Miscellaneous Industrial Processes" (spray booths only)
- 15A NCAC 02D .0521 "Control of Visible Emissions"
- 15A NCAC 02D .1100 "Control of Toxic Air Pollutants" (styrene) [State-enforceable only]
- 15A NCAC 02D .1111 "Maximum Achievable Control Technology" (Subpart WWW)
- 15A NCAC 02D .1806 "Control and Prohibition of Odorous Emissions" [State-enforceable only]
- 15A NCAC 02Q .0317 "Avoidance Condition" (NSR)
- 15A NCAC 02Q .0711 "Requirements for Toxic Air Pollutants" [State-enforceable only]

Changes:

- Deleted "15A NCAC 02D .0958 "Work Practices for Sources of Volatile Organic Compounds""

8. NSPS, NESHAP/MACT, NSR/PSD, 112(r), CAM

NSPS

This facility is subject NOT to New Source Performance Standards (NSPS), 40 CFR 60. This permit renewal does not change this status.

NESHAP/MACT

The facility is subject to the following MACT for all its sources including the new spray booth (**ID No. ES8**).

15A NCAC 2D .1111 "Maximum Achievable Control Technology" (NESHAP Subpart WWW)

The facility is subject to 40 CFR 63 Subpart WWW (proposed August 2, 2001 and finalized April 21, 2003) due to the manufacture of reinforced plastics and HAP (styrene) emissions greater than 10 tons per year. The facility is classified as an existing source (existing equipment was relocated from other facilities in 2005). The resin pouring machine – **ID No. ES4** (commenced operation after August 2, 2001) and new spray booth – **ID No. ES8** (commenced operation after October 31,

2017) are subject to this regulation. The resin pouring machines (**ID Nos. ES4 and ES5**) are considered to be polymer casting operations, and there are no MACT WWW HAP emissions limitations for polymer casting, but they must comply with other provisions of the rule such as initial notifications. The compliance date for MACT Subpart WWW was April 21, 2006 for existing facilities.

As detailed in table 3 of Subpart WWW, the maximum allowable emission rate for organic HAPs varies with the operation and application type. For an open molding - gel coat operation using clear production gel coat, the limit is 522 pounds per ton of resin processed. The emission factors used to calculate (open molding - atomized spray gel coat) the emission rates are determined using the following equations:

<u>HAP content</u>	<u>Equation</u>
% HAP < 33	$0.445 \times \% \text{HAP} \times 2000$
% HAP \geq 33	$[(1.03646 \times \% \text{HAP}) - 0.195] \times 2000$

where %HAP = the concentration of organic HAP in the resin, in weight percent (i.e., if the resin contains 38.5% organic HAP by weight, then %HAP = 0.385)

The Permittee is required to demonstrate compliance by one of the compliance methods in the MACT (options are explained in section 40 CFR 63.5810). The facility demonstrates compliance using the weighted average method. Specifically, this option in section 63.5810(c) of the rule, allows them to demonstrate compliance with a weighted average emissions limit for all open molding operations and a separate weighted average emissions limit for all centrifugal casting operations.

In order to maintain compliance with the 02D .1111 production restrictions, the facility is required to keep records demonstrating the styrene content of the gel coat does not exceed 44.0% for ES1, ES2 and ES8. As can be seen from the above equations, a 44.0% HAP content will be in compliance with the limit of 522 pounds per ton of resin processed for clear production gel coat. The facility has been operating with a gel coat styrene content limit of 41.2% since the issuance of Air Permit No. 09566R00 in September 2005, and appeared to be in compliance with the MACT during the last compliance inspection in September 2017. Continued compliance with MACT Subpart WWW is expected.

NSR/PSD

The facility has a potential to emit greater than 100 tpy of VOCs; however, the facility is minor for NSR purposes since the facility has accepted an enforceable permit condition pursuant to 02Q .0317 that limits VOC emissions to less than 100 tpy. Therefore, NSR review is not be required at this time.

112(r)

This facility is NOT subject to the requirements of the Chemical Accident Release Prevention Program, Section 112(r) of the Clean Air Act requirements because it does not store any of the regulated substances in quantities above the thresholds in 112(r). This permit renewal does not change this status.

Compliance Assurance Monitoring (CAM)

Pursuant to 40 CFR 64.2, the provisions of the Compliance Assurance Monitoring (CAM) rule are applicable to emission units that meet all of the following criteria:

- Criteria #1: The unit is subject to an emission limitation AND uses a control device to achieve compliance with the limit;
- Criteria #2: The unit has pre-control potential emissions that are equal to or greater than 100% of the amount (in tpy) required for a source to be classified as a major source (i.e., 100 tpy of any criteria pollutant or 10 tpy of any HAP); and,
- Criteria #3: The unit is not exempt under 40 CFR 64.2(b).

Emission Unit	Criteria #1: Does the Source Use a Control Device?	Criteria #2: Pre-control PTE \geq 100% of major source thresholds?	Criteria #3: Exempt Under 40 CFR 64.2(b)?	CAM Source?
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ES-1, ES-2, ES4, ES6 and ES8	No	Yes (VOC)	VOC: No	No
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The following table summarizes CAM applicability at Automated Solutions, LLC:
Therefore, the facility is NOT subject to CAM.

9. Facility-Wide Air Toxics:

Majestic Marble and Glass Company - Youngsville facility is subject to this regulation. An air toxic review for this facility was previously done and emission limits were placed in the permit. This renewal does not affect those limits. Continued compliance is anticipated.

The TAPs emissions have been estimated in this application. The following emission analysis indicates addition of spray booth (**ID No. ES8**) can be included in the permit-under the air toxics regulation without posing a risk.

As per 2016 Emission Inventory:

MEK – 257.23 lb/yr

MMA – 284 lb/yr

Styrene – 25888.75 lb/yr = 12.95 tpy

On addition of new source (ES8), it will be

MEK – $257.23 + 7 = 264.23$ lb/yr

MMA – 284 lb/yr

Styrene – $12.95 + 0.96 = 13.91$ tpy

Therefore, the current permit condition for air toxics won't change.

Session Law 2012-91 provides an exemption from North Carolina's air toxics rule for certain TAPs (Toxic Air Pollutants) sources as long as the Division of Air Quality (DAQ) determines these emissions from that facility will not pose an unacceptable risk to human health. This facility is NOT seeking this exemption at this time. Therefore, a state air toxics reevaluation is NOT required.

10. Facility Emission Review:

Actual emissions for 2012 through 2016 are reported in the header of this permit review.

11. Public Notice/EPA and Affected State(s) Review

A notice of the DRAFT Title V Permit shall be made pursuant to 15A NCAC 02Q .0521. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Consistent with 15A NCAC 02Q .0525, the EPA will have a concurrent 45-day review period. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 02Q .0522, a copy of each permit application, each proposed permit and each final permit pursuant shall be provided to EPA. Also, pursuant to 02Q .0522, a notice of the DRAFT Title V Permit shall be provided to each affected State at or before the time notice is provided to the public under 02Q .0521 above. Virginia is affected states within 50 miles of the facility.

12. Other Regulatory Considerations:

- Permit Application fee is NOT required for Permit Applications No. 3500078.15A and 3500078.17A.
- A P.E. Seal is NOT required for these permit applications.
- A zoning consistency determination is NOT required for these permit applications.
- A 30-day public notice and 45-day EPA review is required for the Permit Application No. 3500078.15A.

13. Recommendations/Conclusion:

TBD