

**NORTH CAROLINA DIVISION OF
AIR QUALITY**

Air Permit Review

Permit Issue Date: ??

Region: Raleigh Regional Office
County: Franklin
NC Facility ID: 3500078
Inspector's Name: Brian Bland
Date of Last Inspection: 06/08/2010
Compliance Code: 3 / Compliance - inspection

Facility Data			Permit Applicability (this application only)
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: Title V Fee Classification: Before: Title V After: Title V			SIP: 15A NCAC 2Q .0501(c)(1) NSPS: N/A NESHAP: N/A PSD: N/A PSD Avoidance: N/A NC Toxics: N/A 112(r): N/A Other: N/A
Contact Data			Application Data
Facility Contact	Authorized Contact	Technical Contact	Application Number: 3500078.06A Date Received: 04/07/2006 Application Type: Modification Application Schedule: TV-1st Time Existing Permit Data Existing Permit Number: 09566/R00 Existing Permit Issue Date: 09/29/2005 Existing Permit Expiration Date: 08/31/2010
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Review Engineer: Brian Bland Review Engineer's Signature: _____ Date: ??		Comments / Recommendations: Issue 09566/T01 Permit Issue Date: ?? Permit Expiration Date: ??	

1. Purpose of Application:

Majestic Marble and Glass Company (Majestic) is a facility located in Youngsville, Franklin County, North Carolina. This facility is requesting a first time Title V permit in accordance with 15A NCAC 2Q .0501(c)(1). Application No. 3500078.06A was received by the Division of Air Quality (DAQ) on April 7, 2006 along with the application fee and was considered complete on that date. The previous permit had a "Specific Condition" requiring that this facility submit a permit application one year from the issuance of permit No. 09566R00 (issued September 29, 2005). Application No. 3500078.06A fulfilled that requirement.

Additionally, as requested by Application No. 3500078.10A, this permitting action is a renewal of the existing permit No. 09566R00 (expired on August 31, 2010). The renewal application (App. No. 3500078.10A) was initially received and deemed complete on April 20, 2010. The renewal application was received at least 90 days prior to the expiration date; therefore, the existing permit will not expire until the renewal permit has been issued or denied with submittal of a complete and timely application, and the terms and conditions of the existing permit will remain in effect until the renewal permit has been issued or denied. As part of both applications, the permittee requested that the mold repair booth (ID No. ES3) be removed from the permit. After the renewal application was submitted, the facility also requested changes to the operation restrictions (associated with the 2D .1100 styrene limits) for the coat spray booths (request submitted June 10, 2010) and resin pouring machines (request submitted December 10, 2010).

This permit modification will go through a 30-day public notice and 45-day EPA review.

2. Description of Facility:

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). According to the permit application, the fiberglass molds are coated with gel coat by low

pressure, airless manual spray gun. The catalyst (MEK-peroxide) is added to the resin and calcium carbonate mixture and applied by an extruder to the gel coated fiberglass molds.

Two gel coat spray booths, two resin pouring machines and a resin storage tank are installed and in use at the facility.

3. Permit Modification/Changes

Page(s)	Section	Description of Change(s)
ALL	Entire Permit	+Change permit format from a state only (2Q .0300) permit to the current Title V permit standards (2Q .0500) +Federally enforceable limitations, monitoring, recordkeeping and reporting requirements were added to all permit conditions (with the exception of the "State Enforceable Only" conditions)
3	Section 1 - Equipment Table	+Add 10,000 gallon capacity resin storage tank (ID No. ES6) as it is subject to MACT WWWW +Remove mold repair booth (ID No. ES3)
5	2.2 A	+Add 10,000 gallon capacity resin storage tank (ID No. ES6)
8	2.2 A.2 (15A NCAC 2D .1100)	+As requested by the Permittee, rebalance production restrictions for gel coat spray booths (ID Nos. ES1 and ES2) and resin pouring machines (ID Nos. ES4 and ES5) +Add modeled allowable styrene emission rate for resin storage tank (ID No. ES6) +Remove mold repair booth styrene emission limits and associated production restrictions
Revision R00	Specific Conditions A.10 and A.11	+Remove 15A NCAC 2Q .0504 and 15A NCAC .0507 (Title V permit application requirements)
11-end	Section 3	+Update General Conditions to version 3.3

4. Regulatory Review:

Since no new regulations were added, a regulatory review for these existing requirements will not be included in this document. The facility is currently subject to the following regulations:

- 15A NCAC 2D .0515 "Particulates from Miscellaneous Industrial Processes" (spray booths only)
- 15A NCAC 2D .0521 "Control of Visible Emissions"
- 15A NCAC 2D .0958 "Work Practices for Sources of Volatile Organic Compounds"
- 15A NCAC 2D .1100 "Control of Toxic Air Pollutants" (styrene)
- 15A NCAC 2D .1111 "Maximum Achievable Control Technology" (Subpart WWWW)
- 15A NCAC 2D .1806 "Control and Prohibition of Odorous Emissions"
- 15A NCAC 2Q .0317 "Avoidance Condition" (NSR)
- 15A NCAC 2Q .0711 "Requirements for Toxic Air Pollutants"

As opacity is not expected from the operation of the resin pouring machines (ID Nos. ES4 and ES5), 15A NCAC 2D .0521 "Control of Visible Emissions" was not included in the permit as an applicable regulation for this process.

Majestic is major for HAPs and subject to MACT Subpart WWWW that had a compliance date of April 21, 2006 for existing sources (see Section 6.b. below for more details). The facility also has a potential to emit greater than 100 tpy of VOCs; however, the facility will be minor for NSR purposes since the facility has accepted an enforceable permit condition pursuant to 2Q .0317 that limits VOC emissions to less than 100 tpy.

5. Facility-wide Air Toxics:

Emissions of TAPs from gel coat spray booths (ID Nos. ES1 and ES2) and resin pouring machines (ID Nos. ES4 and ES5) have not changed since the issuance of the previous permit. The installation of these sources at the Youngsville facility in 2005 triggered an air toxics review (See permit review for 09566R00 for further discussion). Styrene emissions modeled in compliance with acceptable ambient level (AAL) per Chuck Buckler's memo dated September 28, 2005. The maximum styrene impacts, based on the maximum emission rates and respective styrene contents provided in the permit application, were approximately 90% of the 1-hour AAL. The resulting styrene emission limits (36.6 lb/hr each for ES-1 and ES-2 and 7.29 lb/hr each for ES-4 and ES-5) were included in 09566R00 and will be carried forward in this revision. As explained at the time of the modeling "Since the maximum production rates were utilized, no monitoring, recordkeeping or reporting will be required for toxics compliance except for keeping the MSDSs of the gel coats and resins available for inspection." With the continued use

of methyl ethyl ketone (MEK) at the facility, the 2Q .0711 limit for MEK will remain in the permit. As operations at the facility are essentially unchanged, compliance continues to be expected.

The 36.6 lbs/hr per gel coat booth and 7.29 lb/hr per pouring machine styrene emission limits won't change, but a limit for the resin storage tank was added. Because of conservative methodology used to calculate the tank's styrene emissions, no monitoring, recordkeeping or reporting will be required. Specifically, the tank was modeled using a one hour fill time (it typically takes ~1.5 hours to fill the entire tank) and assuming the annual breathing losses occurred at the time of filling events, not spread over the entire year. With these assumptions, the tank was determined to contribute 1.91 lbs/hour of styrene. Styrene emissions modeled in compliance with acceptable ambient level (AAL) per Chuck Buckler's memo dated January 18, 2011. With the addition of the resin storage tank, the maximum styrene impacts were approximately 93% of the 1-hour AAL.

The facility requested that gel coat spray booth and resin pouring machine operational restrictions (to ensure compliance with the allowable styrene emission rate for compliance with 2D .1100) be modified. The maximum styrene content of the materials will be increased, but the maximum amount of material that can be processed will be decreased, such that allowable styrene emission rates will not change. Specifically, the maximum application rate of gel coat would decrease from 19.7 gal/hr to 17.5 gal (per booth) while the maximum styrene content would increase from 41.2% to 44.0% and the maximum usage rate of resin would decrease from 86.2 gal/hr to 80.8 gal (per machine) while the maximum styrene content would increase from 30% to 32%.

Calculation of styrene emissions from one resin pouring machine (assuming maximum allowable styrene content):
 $(80.8 \text{ gallons resin/hour}) \times (9.4 \text{ lbs resin/gallon resin}) \times (32\% \text{ styrene}) \times (3\% \text{ of styrene released as air emissions}) = 7.29 \text{ pounds styrene/hour}$

6. NSPS, NESHAP, PSD, and Attainment Status:

a. NSPS

These regulations are not applicable to this modification.

b. NESHAP (MACT)

This modification does not include any changes to the MACT requirements; however, the permit language was updated to reflect current Title V Subpart WWWW language, and the resin tank (ID No. ES6) was added to the permitted equipment list.

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

The facility is still subject to 40 CFR 63 Subpart WWWW (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 only new piece (commenced operation after August 2, 2001) of equipment is the automated resin pouring machine (ID No. ES4). The resin pouring machines (ID Nos. ES4 and ES5) are considered to be a polymer casting operations, and there are no MACT WWWW 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 WWWW was April 21, 2006 for existing facilities.

As detailed in table 3 of Subpart WWWW, 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 plans to demonstrate 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 2D .1100 production restrictions, the facility is required to keep records demonstrating the styrene content of the gel coat does not exceed 44.0% for ES1 and ES2. 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 June 2010. Continued compliance with MACT Subpart WWWW is expected.

c. NSR (PSD/NAA)

The facility has a potential to emit greater than 100 tpy of VOCs; however, the facility will be minor for NSR purposes since the facility has accepted an enforceable permit condition pursuant to 2Q .0317 that limits VOC emissions to less than 100 tpy. Therefore, NSR review will not be required at this time.

d. Attainment

Franklin County is nonattainment for ozone and attainment for all other criteria pollutants.

7. Facility-wide Air Toxics:

This permit modification does not trigger an air toxics review.

8. Facility Emissions Review

There is no change in emissions for this renewal.

The following table represents the latest year's emission inventory from the facility:

Pollutant	2009 Actual Emissions (tpy)
VOC	11.02
Styrene	11.01
MEK	0.01

9. Facility Compliance Status:

The last full inspection of this facility was completed on June 8, 2010 by the Raleigh Regional Office (RRO). At this time, Majestic appeared to be operating in compliance with applicable requirements.

10. Draft Permit Review Summary:

The Raleigh Regional Office was provided a draft permit and draft permit review document on March 4, 2011. Comments were received on March 9, 2011. The comments involved several minor suggested changes to the documents, and most of these changes were made.

Mike Spence of Majestic Marble and Glass Company - Youngsville was provided a draft permit for review on March 4, 2011. No comments were received at the time of permit issuance. In response to facility comments concerning the draft sent February 24, 2011, the MACT WWWW section of the permit was revised to include the weighted average compliance method and some minor errors were corrected.

Ms. Katy Forney and Ms. Gracy DeNois (U.S. EPA, Region IV) were provided a draft permit for review on <DATE>. <SUMMARY OF COMMENTS>.

A 30-day public notice period was initiated on ??, 2011. <SUMMARY OF COMMENTS>.

11. Recommendations

Issue Air Permit No. 09566T01.