

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Self Initiated Inspection

N1975
FY2018
SM CMS

N197544011

FACILITY: MARBELITE CORPORATION		SRN / ID: N1975
LOCATION: 22500 HESLIP, NOVI		DISTRICT: Southeast Michigan
CITY: NOVI		COUNTY: OAKLAND
CONTACT: William Diatkar, Vice President		ACTIVITY DATE: 03/30/2018
STAFF: Iranna Konanahalli	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: FY2018 SM CMS inspection of Marbelite Corporation ("Marbelite")		
RESOLVED COMPLAINTS:		

Marbelite Corporation (N1975)
22500 Heslip Drive
Meadowbrook Roads)
Novi, Michigan 48375-4139

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Permit-to-Install No.: 240-95D (ROP & MACT opt-out) dated November 2, 2005

PTI revision PTI No. 240-95C → PTI No.: 240-95D: I had asked the company to submit an application for administrative amendment of PTI No. 240-95C to correct typographical and minor errors. PTI No. 240-95C was revised to PTI No. 240-95D on November 2, 2005.

ROP Application void: AQD voided Renewable Operating Permit (ROP) Application No. 200400085 dated April 19, 2004 (received by AQD on April 20, 2004); the application was submitted in compliance with April 25, 2004 deadline for ROP application. AQD voided this application on January 4, 2005, pursuant to the void request letter dated December 17, 2005, and approval of PTI No. 240-95C (a MACT and ROP synthetic minor permit).

PTI Voids: 639-88 (05/13/96), 240-95 (4/25/2003), 240-95A (4/12/2001), 240-95B dated April 25, 2003 (07/15/2004), 240-95C dated July 13, 2004 (11/02/2005)

NESHAP / MACT WWW (4W): Marbelite is NOT subject to 40 CFR, Part 63, Subpart WWW, National Emission Standards for Hazardous Air Pollutants: Reinforced Plastic Composites Production. NESHAP / MACT 4W applies only to HAP major sources. Marbelite is not subject to MACT 4W as it obtained, in a timely manner, Synthetic Minor Source conditions via PTI No. 240-95D.

On March 30, 2018, I conducted an annual level-2 **FY2018 SM CMS** inspection of Marbelite Corporation ("Marbelite") located at 22500 Heslip Drive, Novi, Michigan 48375-4139. The inspection was conducted to determine compliance with the Federal Clean Air Act (CAA); Article II, Part 55, Air Pollution Control, of the Natural Resources and Environmental

Protection Act, 1994 (PA 451); Michigan Department of Environmental Quality, Air Quality Division (MDEQ-AQD) administrative rules; federal NESHAP / MACT WWW; and Permit-to-Install No.: 240-95D (ROP & MACT Synthetic Minor).

During the FY 2018 inspection, Mr. William Diatkar (Phone: 248- 348-1900; Cell: 248-802-7634; Fax: 248-348-1934; E-mail: BillD@MarbeliteCorp.com), Vice President, manufacturing, and owner partner, assisted me.

Mr. Rod Lertola, Vice President, technical & marketing, and owner, separated in CY 2009. Messrs. Larry Morrianti, President, Bill Lubahn, VP Sales, Bill Diatkar, VP Operations, bought Lertola's shares of the business. Mr. Randy Tysar, an environmental consultant, was not present. Mr. Tysar wrote the spreadsheet and its formulas to calculate VOC / HAP emissions. . Mr. Tysar continues help Marbelite when needed.

About January 2018, Marbelite sold its Marbelite brand to Carstin Brands, Inc. of Arthur, IL 6911. As a result of this sale, Marbelite is prohibited to use its brand name and also forbidden make cultured marble products. Consequently, use of Alpine (Styrene content - Actual: **24** percent and PTI No. 240-95D, SC 2.2a limit: 30 percent), Biscuit (Styrene content - Actual: **30** percent and PTI No. 240-95D, SC 2.2c limit: 39 percent) and Bone (Styrene content - Actual: **37** percent in Bone and PTI No. 240-95D, SC 2.2d limit: 37 percent) will be eliminated as such products are prohibited by sale agreement. Only Clearcoat (Styrene content - Actual: **37.8** percent and PTI No. 240-95D, SC 2.2b limit: 42 percent) will be used. In addition, Marbelite in in the process of purchasing its neighbor Dura-Sil. New corporate name for Marbelite is not decided yet.

Mr. William Diatkar stated that bathroom vanity business was down 50 percent due to housing, banking and credit crisis (2008-2012). However, the business has picked up since then (2013-present). As result of elimination of Alpine, Biscuit and Bone cultured marble products styrene emissions are expected to be reduced. However, Dura-Sil products will increase some styrene emissions. While Mr. Ray Moriatti retired, Mr. Steve Moriatti joined Marbelite; both of Dura-Sil.

Marbelite manufactures imitation marble bathroom products (vanity tops). The process consists of gelcoat spray application to the desired molds (countertops, sinks, vanities, showers, etc) in the gelcoat booth, baking the gelcoat and spreading on the molds the matrix. While gelcoat on a mold is cured first in a natural gas fired oven, after spreading the matrix on a mold, the matrix is cured on a mold at ambient temperatures utilizing heat of reaction (exothermic).

Gelcoating (EU-Gelcoat) – baked at 80 °F

Gelcoat is sprayed in Gelcoat booth (12 ft. W * 10 ft. D * 10 ft. H) with a backdraft filter system (inexpensive primary flat filters and expensive secondary Andrea filters).

A mold release agent (No.2 Seal Kote) is applied to the desired mold, when the mold is used for the first time. Seal Kote is a wipe-on application; not spray application. A repaired and sanded mold needs sealing as well. The Seal Kote seals the porous surfaces and crevices of a mold and thus prevents adhesion of gelcoat. Seal Kote release agent is applied as a semi-permanent mold release agent every 50-100 (approximately) times mold is used to seal the mold; as cost saving measure, seal application rate is reduced to every 50-100 castings (about 2010) from 30-50. About January 2018, Marbelite changed the ratio once every 250 molds. The sealed mold is placed on a roller track to move in the process line. Gelcoat is

sprayed on the mold in the gelcoat booth equipped with HVLP gun (calibrated to 1 pound per minute). Gelcoat booth is equipped with a back-draft double-layer (primary flat pre-filter and secondary Andrea filter) dry filter system to control gelcoat over-spray particulate matter. Using two layers of filters results in cost savings by reducing particulate matter load on expensive Andrea filters. The Mold is baked to cure the gelcoat at 80 degrees Fahrenheit for about 40-45 minutes. The gelcoat curing oven is natural gas fired (0.2 million BTU per hour). Thus gelcoated and cured mold is transferred to the casting machine roller track.

I asked Mr. Diatkar to install and inspect the filters such that they fit, at all times, snugly without gaps and holes. I also asked him train painters properly so that overspray can be minimized resulting in cost savings due to purchasing less gelcoat.

While Andrea filters (expensive, corrugated, secondary) are changed once per six months (1/6 months), dry filters (inexpensive, flat, primary) are changed once per week (1/week).

Molding bathroom fixtures using casting machine (EU-CastingResin) – Ambient curing

The matrix is mixed in Respecta Model No. DB-22 (bought the machine in 1989) self-contained automated casting machine. The matrix consists of calcium carbonate or lime stone ($\approx 60\%$, powder), inorganic filler ($\approx 10\%$, powder), a resin ($\approx 30\%$, liquid), a catalyst (small amount, $\approx 1-2$ percent, liquid) and a pigment (trace to impart color, liquid). The catalyst is used to catalyze the polymerization (an exothermic chemical reaction) of the resin. The matrix is dispensed on previously gelcoated mold and spread by a skilled technician. The catalyst initiates and promotes the exothermic polymerization reaction that releases sufficient heat to maintain mold warm (135 degrees Fahrenheit). The mold is vibrated to remove air bubbles. The curing continues for one and one half hour under ambient conditions. Although ambient curing is sufficient, natural gas fired curing oven speeds up the curing thus increasing the fixture production rate. However, Marbelite cures cast product at ambient temperatures. On some molds (modular) a top is closed tightly on the mold so that uniform and consistent shape is achieved. It may be noted that cured gelcoat is retained on a product and not on a mold, which is reused to produce another clone (product).

While gelcoat molds are cured in natural gas oven at 80 degrees Fahrenheit for about 40 minutes, cast product (i.e. matrix is on gelcoated mold) is cured at ambient temperature utilizing heat of reaction of polymerization reaction (exothermic).

Upon ambient temperature curing, the matrix material is now set on the mold. The bathroom fixture is removed from the mold and sent to a finishing booth where it is ground and is sanded to give finishing touches. Gelcoat is affixed on the fixture and not on the mold. The fixture with shiny gelcoat is packaged and shipped.

Marbelite is testing lower styrene content polymer (matrix) with a twin goal of reducing costs and emissions.

Grinding / finishing booth (Rule 285(2)(I))

The grinding / finishing booth is equipped with a dry filter with indoor exhaust; i.e. exhaust gases are not released to outside ambient air. Pursuant to Rule 336.1285(2)(I)(vi), the booth is exempt from Rule 336.1201 (Permit-to-Install). In this booth the molds are sanded to give finishing touches. Dust laden air goes through a down-draft exhaust system. Dusty air is filtered in a cartridge filter system and cleaned air is recirculated back into the plant. Filtered air is never exhausted out, even in A/C cooling season (spring / summer). Photohelic

CY 2017 12-month period, cleanup acetone, VOC and methylene chloride emissions are **2.37** tpy acetone (PTI No. 240-95D, SC 3.1.a Limit: 10 tons per year), **0.33** tpy VOC (PTI No. 240-95D, SC 3.1.b Limit: 4.1 tons per year) and **0.00** pounds of methylene chloride per year (no MeCl emergency since 2011) (PTI No. 240-95D, SC 3.2 Limit: 400 pounds per year), respectively. One incident occurred in CY2007 that required use of Methylene Chloride; next in June 2011. No MeCl clean-up since 2011.

S-280 Superflush Cleanup solvent, an alternative to methylene chloride is recovered and disposed of as nonhazardous solid waste (liquid with 0.19 mm Hg vapor pressure at room conditions)

Flash Point (FP) = 172 °F TCC (Tag Closed Cup). Auto Ignition = NA °F. Boiling Point (BP) = 368 °F @ 760 mm Hg. Vapor Pressure (VP) = 19 mm Hg at 68 °F. Specific Gravity (SG, Water = 1.0) = 1.064. Density (ρ) @ 68 °F = 8.86 pounds / gallon (1.064 kg /L). Flammability range = 0.9 %v (LEL) – 8%v (UEL).

FG-FIXTURES

All wastes are handled properly. While Superflush is sent to Superior Oil, Industrial Waste is sent to US Ecology (fka Environmental Quality Company) (PTI No. 240-95D, SC 4.1). The records are kept and calculations are performed (PTI No. 240-95D, SC 4.2 and 4.3).

FG-FACILITY (NESHAP / MACT OPT-OUT HAP LIMITS)

For CY 2017 12-month period, Styrene (any single HAP) emissions are **0.27** (casting) plus **2.3** (gelcoat) = **2.57** (FG-FACILITY) tons per year (PTI No. 240-95D SC 5.1a limit: 9.9 tpy). Styrene is only HAP emitted (**2.57tpy**).

Federal NESHAP / MACT 4W and ROP

Pursuant to approval of Permit-to-Install No.: 240-95C (ROP & MACT Synthetic Minor) dated July 13, 2004, and subsequent PTI modification (PTI No. 240-95C to PTI No. 240-95D), Marbelite's imitation marble manufacturing process is **NOT** subject to 40 CFR, Part 63, Subpart WWWW (4W), National Emission Standards for Hazardous Air Pollutants: Reinforced Plastic Composites Production. The Proposed Rule was published in Federal Register / Vol. 66, No. 149 / Thursday, August 2, 2001 / Proposed Rules. The Final Rule was published in Federal Register / Vol. 68, No. 76 / Monday, April 21, 2003 / Rules and Regulations.

Initially (before obtaining a MACT Synthetic Minor Permit) Marbelite, an existing major MACT source as of June 2004, had to comply with the NESHAP by April 21, 2006. Because Marbelite was a major MACT source since April 25, 2003 and before July 13, 2004, it submitted an administratively complete ROP application to AQD by April 25, 2004. Marbelite mailed on August 18, 2003, the Initial Notification, which stated that Marbelite was subject to the NESHAP / MACT WWWW (4W) as a major source.

Subsequently, Marbelite modified PTI No. 240-95C, which allowed Marbelite to become a non-major (aka area) NESHAP / MACT source, to PTI No. 240-95D dated November 2, 2005. The purpose of this modification was to correct typographical errors discovered during FY 2005 inspection and to increase styrene content to 30 percent from 28 percent for Alpine gelcoat and to 39 percent from 37 percent for Biscuit gelcoat.

As a result, Renewable Operating Permit (ROP) Application No. 200400085 dated April 19, 2004 (received by AQD on April 20, 2004) was submitted in compliance with April 25, 2004 deadline for ROP application. Subsequently, AQD voided this application on January 4, 2005, pursuant to the void request letter dated December 17, 2005, and PTI No. 240-95C (a MACT and ROP synthetic minor permit).

National Emission Standards for Hazardous Air Pollutants (NESHAP) for Reinforced Plastic Composites Production were promulgated on April 21, 2003, and amended on August 25, 2005. This NESHAP applies to reinforced plastic composites production operations located at major sources of emissions of hazardous air pollutants (HAP).

Marbelite is a source with federally enforceable limits (PTI No. 240-95D, SC FG-Facility, 5.1a limit: 9.9 tpy single HAP & PTI No. 240-95D, SC FG-Facility, 5.1b limit: 24.9 aggregate HAPs) below the major source thresholds (<10 tpy single HAP & <25 aggregate HAPs) and is exempt from this MACT rule. Marbelite obtained these limits via PTI No. 240-95D (typographical and minor correction of PTI No. 240-95C dated July 13, 2004) dated November 2, 2005, before the first significant compliance date for this NESHAP. The compliance date is April 21, 2006 for existing sources.

The MACT 4W standard applies only to a Reinforced Plastic Composites Production (promulgated on April 21, 2003, and amended on August 25, 2005) facility located at a plant site that is a major source; a non-major or area HAP source, i.e., actual and potential annual emissions are less than 10 tons of any single HAP and less than 25 tons of all HAP combined, is not subject to the MACT 4W standards. Major MACT sources are defined as those that emit or have the potential to emit at least 10 tons per year of any single HAP or 25 tons per year of any combination of HAP. Current ***once-in-always-in policy*** of US EPA permitted Marbelite to opt out of the requirements of the NESHAP/MACT 4W because Marbelite obtained a synthetic minor permit (limiting HAPs to: (9 tpy [single HAP] and 25 tpy [Aggregate HAPs]) in a timely manner (before final compliance date for existing sources, April 21, 2006). However, US EPA has proposed (Page 69, Federal Register / Vol. 72, No. 1 / Wednesday, January 3, 2007 / Proposed Rules) to replace this policy (May 16, 1995, EPA memorandum entitled "Potential to Emit for MACT Standards – Guidance on Timing Issues" from John Seitz) so that a major MACT source may become an area source any time.

Unified Emission Factors (UEF)

Unified Emission Factors (UEF), as stated in Table I of NESHAP / MACT WWW, were used in the emissions calculations. UEF were incorporated into PTI No. 240-95D. According to Lasco Bathware (800-877-2005), UEF / Table I emission factors under-predict styrene emissions as much as 30 percent for non-atomized mechanical applicators. Per Lasco's President Stuart Leigh, the NESHAP / MACT WWW rules / regulations do not take into account the operating conditions of a typical tub / shower operations. On October 30, 2006, Mr. Leigh wrote a letter to Mr. Steven Chester, Director of Michigan Dept. of Environmental Quality, complaining about competitive disadvantage Lasco is in because it installed VOC / HAP control equipment at its facilities (8). On November 1, 2006, US EPA Region VII responded to Mr. Leigh's concerns and commended Lasco's proactive approach in controlling VOC / HAP emissions. In future, US EPA may revise the NESHAP / MACT WWW standards taking into account Lasco's and American Composites Manufacturers Association's information.

Since Marbelite's styrene emissions are well below the limit of 9.9 tpy (actual: 2.84 tons of styrene per year for October 2008), it is not necessary to make an issued out of unreliability of

the emission factors (UEF), which are incorporated into federal NESHAP regulations and the Permit-to-Install No. 240-95D. The MDEQ-AQD will revisit the emission factors issue when the NESHAP / MACT WWWWW final rule is revised. Ms. Cindy Smith of Permit Section, MDEQ-AQD, concurs with this conclusion per my conversation with her on April 9, 2007.

Styrene emission factor

Per Tom Marza's memo dated September 13, 2000, a mass balance test was performed to develop styrene emission factor. The test did not involve stack emissions. AQD calculated 0.47% as average percent of styrene emissions a percentage of resin. The standard deviation of data set was 0.08%. AQD calculated 1.72% as average percent of styrene emissions as percentage of styrene content of the resin. The standard deviation of the data set was 0.30%

Sill finishing (sanding) booth

As Marbelite is purchasing Dura-Sil, it brought Dura-Sil's molds and sanding machine.

The matrix material is now set on the mold. The window sill fixture is removed from the mold and sent to a finishing booth (completely enclosed) where it is sanded to give finishing touches. Gelcoat is affixed on the fixture and not on the mold.

Finishing booth consists of one Cemco 2000 sanding machine, which is equipped with almost 100 percent capture device (capture efficiency CE \approx 100%) because all sanding is enclosed. The booth dust is controlled by a baghouse (28 bags) and exhaust is recycled into work area (inside the building).

The booth dust is exhausted to a fabric filter system with indoor exhaust. The dust on the bags (28) is removed using a shaker mechanism. The bags (28) are shaken for one minute every time the baghouse is started; about three (3) times per day. The dust captured in the hopper (equivalent to four (4) 55-gallon drums) during the shaking is emptied once every 3-4 weeks and disposed of according to RCRA. The finished window sill fixture is packaged and shipped. Filtered air is released to in-plant environment.

Sanding process is exempt from Rule 336.1201 (Permit-to-Install) pursuant to Rule 336.1285 (2)(l).

Conclusion

I did not find any compliance problem with Permit-to-Install No 240-95D (ROP & MACT Synthetic Minor) dated November 2, 2005. Under-prediction of styrene emissions due to Unified Emission Factors (UEF) is not an issue until the NESHAP / MACT WWWWW is revised. Marbelite is purchasing Dura-Sil (N2949). Per sales agreement with Carstin Brands, Inc., Marbelite is prohibited to use its brand name and, also, forbidden make cultured marble products.

NAME J. S. Hennanahall DATE 04/09/2018 SUPERVISOR Joyce