

DEPARTMENT OF ENVIRONMENTAL QUALITY  
 AIR QUALITY DIVISION  
 ACTIVITY REPORT: Scheduled Inspection

D806545948

FACILITY: Dart Container Corporation of Michigan		SRN / ID: D8065
LOCATION: 432 Hogsback Rd, MASON		DISTRICT: Lansing
CITY: MASON		COUNTY: INGHAM
CONTACT: Donald Wiltse, Regulatory Engineer		ACTIVITY DATE: 08/14/2018
STAFF: Samantha Braman	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Scheduled inspection to determine compliance with MI-ROP-D8065-2014a and all other state air regulations.		
RESOLVED COMPLAINTS:		

**Safety Equipment Needed:** Earplugs, safety glasses, safety-toe boots and hair nets (provided).

**Purpose:** Scheduled inspection for compliance with Renewable Operating Permit MI-ROP-~~N5572-2015~~ <sup>D8065-2014a SB</sup>

**Location:** Dart Container Corporation is in its own industrial park near a residential area outside the city limits of Mason. The closest residence is approximately 350 feet away and the Aurelius and Vevay Drain passes through the Dart complex property.

**Facility Background/Regulatory Overview:** Dart Container production operates 24/7; the engineering and administrative sections operate generally 8am-5pm Monday –Friday. Dart manufactures foam containers from expandable polystyrene (EPS) beads impregnated with pentane. The containers are sold to numerous distributors. There are a total of 8 buildings for the site; Building 1 is the Cup Plant where all manufacturing takes place, Building 2 holds office space for Graphics, Travel, Procurement, etc., Building 3 is an employee recycling center drop off center, Building 4 houses Machinery Manufacturing (Dart builds and fabricates all of its machinery), Building 5 is the old storage building now used for machine design and R&D with truck maintenance garage (most of the equipment housed in Building 4 will be moved to Building 5 relatively soon), Building 6 is the new corporate office with the HR and marketing office, Building 7 is the new warehouse, and Building 8 is for facilities and grounds maintenance.

In 2012, Dart Container purchased the Solo Cup Company. Although the manufacturing plants remain where they were at the time of the acquisition, the Solo corporate headquarters were consolidated with the Dart headquarters in Mason. This consolidation required an increase in office space which was recently completed along with an additional storage and shipment building of approx. 475,000 square feet.

The NAICS code reported to MAERS for the Mason plant is 326140 "Polystyrene Foam Production Manufacturing". Dart Container is an ROP source which is Major for Volatile Organic Compounds (VOC). The primary VOC pollutant is pentane. Pentane is not identified as a HAP according to the EPA. However, it is identified as a Toxic according to state of Michigan AQD toxic rules with an Initial Threshold Screening Level (ITSL) of 17,700 µg/m<sup>3</sup> over an 8-hour average which is the equivalent of 17.7ppm.

**Process Explanation:** Expandable polystyrene (eps) beads (beads look like little glass beads) impregnated with pentane are dumped from large bags and augured into controlled storage bins (this is the first stage of control), the beads are then sifted for size with larger beads separated and recycled; the beads then go into a ~~pre-heater~~ <sup>cascade drier.</sup> and partially expand followed by a cyclone for water drop-out where a pentane CEM is located (this is the last stage of pentane control where all pentane is vented to the onsite boilers, each boiler has pitot tubes installed to determine scfm); after the ~~pre-heater~~ <sup>sifters</sup> the partially expanded beads are sent to the 136 cup mold machines (with 6-12 cavities each) which then use boiler steam heat to completely expand and mold the beads into cups (this is the first stage of EU-CUPSTORAGE); cups are then sent to printing area if required followed by packaging; once packaged the cups are transported throughout to the appropriate storage area. It is estimated that once formed into cups, most of the remaining pentane is emitted within the first 30 days. They calculate this by multiplying their production for the month by the emission factor and that gives them the fugitive emissions from the cup storage.

**MAERS Reporting:** Facility is a Category 1 site in MAERS.  
 NAICS Code: 326140 Polystyrene Foam Production Manufacturing

**Applicable Regulations:**  
 MI-ROP-D8065-2014a

SB 10/11/18

The pentane is then routed to a... SB

cascade drier. SB

40CFR63 Subpart N

**Inspection:**

Arrived: 9 AM

Departed: 3:30 PM

Weather 67°F; wind SW at <5 MPH; UV Index-low

There were no visible emissions from the facility upon arrival. No odors were identified.

This was a scheduled, announced, initial contact (as new inspector), full compliance evaluation inspection. Upon entering the parking lot and the building, I did not detect any odors or see any visible emissions.

Brad Myott and I were greeted by Don Wiltse, Regulatory Engineer. Don met us at Building 6 where we signed in then took us over to Building 1 to a conference room where we also met with Dennis Archer, Plant Services Manager. We talked a little bit about the things we would need to see and the records we would need to look at. Don and Dennis gave us a background of the company, an overview of the process, and explained the various buildings on campus. Don and Dennis then took us on a tour of the Building 1 (Cup Plant- Section 1 of ROP) to look at the different Emission Units outline in Table 1-1. Following the tour, we returned to the conference room where Don and Dennis pulled up various record keeping items up on the projector screen. We then went on a Tour of Building 4 (Machinery Manufacturing – Section 2 of ROP). Lastly, we returned to the conference room to review record keeping materials for Part 2 and 3 of the ROP.

**Table 1-1:** MAERS Emission Unit List, Section 1 in ROP, Building 1 emission units.

No.	Emission Unit	Description	Comp. Status
1	EU-RECYCEXTRUDER-S1	Recycle extruder: includes extruder used in the recycle center to recycle foam polystyrene, both pre and post-consumer; since the rest of the process consists of cleaning and sorting with no VOC use, it is exempt per 336.1281(e) and 336.212 (2). Installed 7/1/1990	C
2	EU-CUP-S1	Cup manufacturing process: Dart produces foam containers made from expandable polystyrene (eps) beads impregnated with pentane using a steam chest molding process. Installed 4/1/1960	C
3	EU-CUPCOLDCLNRS-S1	All Cold Cleaners covered by Section 1 of ROP. Installed <del>2/7/1992</del> 11/1989 SB	C
4	EU-UVPRINT&CLEAN-S1	UV ink printing of foam containers. Includes ink and Isopropyl alcohol clean up. Installed 4/1/1960	C
5	EU-BOILER5-S1	Steam Boiler: <del>700</del> 600 hp boiler used to produce steam for cup mfg process. Primary fuel is natural gas with #2 fuel oil as backup. Installed 1/1/1970	C
6	EU-BOILER7-S1	Steam Boiler: Boiler #7 is a 600 hp steam boiler which is used to produce steam for the cup mfg. process. The boilers primary fuel is natural gas with No.2 fuel oil as backup. Installed <del>1/1/1970</del> 6	C
7	EU-BOILER8-S1	Steam Boiler: 800 hp boiler used for steam production for container mfg process. Primary fuel is natural gas; no backup fuel. Installed 1/1/1970-1987	C
8	EU-CUPLIGHTS-S1	Emergency generator for Cup Plant lights. Installed 4/1/1980	C
9	EU-CUPSTORAGE-S1	Pentane emissions from the storage of cups. The actual installation date of the process is 04/01/1960, which coincides with the original cup manufacturing process. Emissions were quantified by testing pentane content in cups	C

10/11/18  
SB

		post production and then again 30 days later. In 2014 AQD determined that the emissions should be reported to MAERs starting in 2013. Installed 1/1/2013	
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Table 1-2: MAERS Emission Unit List, Section 2 in ROP, Building 4 emission units.

No.	Emission Unit	Description	Comp. Status
1	EU-CHROMEPLATING-S2	Chrome Plating Process: Dart's Machine Mfg Div. chrome plates molds using a hard chrome plating process. Under NESHAP standards, Darts process is considered an existing small hard chrome plating operation. Dart currently has a scrubber installed. Installed 1/1/1989	C
2	EU-PAINTBOOTH-S2	Machine parts coating line booth. Installed 5/1/1997	C
3	EU-LASERCUTTER-S2	Laser cutter used to cut mild, stainless, and galvanized steel, as well as aluminum in the Machinery Manufacturing division. Installed 3/1/2007	C
4	EU-MMCOLDCLNRS-S2	All Cold Cleaners in Section 2 of ROP. Installed 9/5/2006	C

Table 1-3: MAERS Emission Unit List, Section 3 in ROP, various building emission units.

No.	Emission Unit	Description	Comp. Status
1	EU-CORPGEN-S3	Emergency Generator for Building 2 (formerly Bldg 3). Installed 4/1/2009	C
2	EU-UVPRINT&CLEANB5-S3	UV printing, R&D, and cleanup operations in Bldg 5. Installed 6/2008	C
3	EU-DIEOVEN-S3	Electric fired furnace to clean die heads for R&D extrusion operations. Vented to in-plant environment through fabric filter. Installed 2/1/2012	C
4	EU-FIREPUMP3-S3	Emergency fire pump engine. Installed 4/1/2014	C
<del>5</del>	<del>EU-FIREPUMP2-S3</del> Removed from service	<del>Emergency generator engine for emergency fire pump system. Installed 4/1/1988.</del>	C
6	EU-B6GEN-S3	Emergency Generator for Building 6. Installed 6/1/2013	C
7	EU-B7GEN-S3	Emergency Generator for Bldg 7. Installed 12/6/2013	C

5\* EU-FIREPUMPGEN Emerg. generator. General 420cc OHV 451 cc. Replaced EU-FIREPUMP2-S3 in 6/17/16 C

**Recordkeeping:** We reviewed the recordkeeping requirements of MI-ROP-D8065-2014a on a projector in the conference room. Upon request following the inspection I also received a copy of the list of exempt equipment at the site. This will be included with the report.

Building 1 Emission Units:

EU-RECYCLEEXTRUDER-S1, Compliance

- Emission limits were reviewed, the average tons per month was 0.028 tons with a limit of 0.28 tons.
  - Material limits reviewed, maximum polystyrene waste to be processed per day, month, and year were well under permitted limits.
  - Process/Operational restrictions require use of a "Pentane Control System" which was physically observed.
  - Monitoring and Recordkeeping, all conditions were being met.
- Calibration is checked weekly and is calibrated every 6 weeks whether it's needed or not.

-Reporting, all conditions were being met with the last required report received March 16, 2018.

#### *EU-CUP-S1, Compliance*

- Emission limits were reviewed, the maximum tons per year was 110.11 tons with a limit of 219.95 tons.
- Material limits reviewed, maximum pentane by weight is 6.5%, all EPS beads and recycled content uses the value of 6.5% for emission calculations which is an overestimate due to the recycled content having a much less pentane content due to constant off-gassing.
- Process/Operational restrictions require all waste EPS beads to be captured and recycled as appropriate; this waste is included with recycling.
- Testing, the pentane content of material as applied and received shall be tested or an SDS must provide formulation for proof of material limits; stack testing shall be completed once every 5 years, the last test was completed and passed on 4/16/18.
- Monitoring and Recordkeeping, all conditions were being met.
- Reporting, all conditions were being met with the last required report received March 16, 2018.
- Stack/Vent Restrictions are for the boilers as control devices requiring a diameter and height of certain characteristics that vent unobstructed vertically upwards. These requirements were being met.

#### *EU-CUPSTORAGE-S1, Compliance*

- \*Note: once a cup is produced, all emission from off-gassing are calculated via this EU.
- Emission limits were reviewed, the tons per year to date (Jan-Aug) was 102.86 tons with a limit of 230 tons. The computation of the emissions is using an emission factor of 0.018 lbs VOC/ lbs of cups produced; or as identified in the original PTI 349-06A 1.8lbs VOC / 100 lbs cups produced.
- Monitoring and Recordkeeping, VOC emission rate shall be calculated monthly and was up to date.
- Reporting, all conditions were being met with the last required report received March 16, 2018.

#### *EU-RICE-S1 (EU-CUPLIGHTS-S1), Compliance*

- \*Note: this engine is very small yet must comply with 40CFR63 Z4. It is 18 HP or 0.0458 MMBtu/hr and is natural gas fired. The purpose is to provide emergency power to lighting in the plant (not to plant equipment).
- Process/Operational restrictions require the following: inspection of belts and hoses along with oil change every 500 hrs. or annually; and inspect air cleaner every 1000 hrs or annually. Records showed all was completed on 2/23/18.
- Monitoring and Recordkeeping, all conditions were being met. As of 7/17/18 There was 0 hours of emergency runtime, and 1 hour of service runtime.
- Reporting, all conditions were being met with the last required report received March 16, 2018.

#### *FG-COLDCLEANERS-S1 (EU-CUPCOLDCLNRS-S1), Compliance*

- There are no solvent based cold cleaners in Cup Plant. There are two in Building 5 and 1 in Building 7.

#### *FG-RULE290-S1 (EU-UVPRINT&CLEAN-S1), Compliance*

- Monitoring and Recordkeeping, records are being kept on usage.

#### *FG-BOILERS-S1 (EU-BOILER5-S1, EU-BOILER7-S1, EU-BOILER8-S1), Compliance*

- \*Note: These boilers are used for destruction of Pentane from the operations leading up to but excluding cup molding/formation.

Usually, #7 and #8 are the ones running, but #8 was down during our inspection, so #7 and #5 were running. They go up and down depending on steam demand.

- The fuel is provided by contract and guaranteed to be less than 1.5% sulfur.

oil -Monitoring and Recordkeeping, a stack temperature recording device is installed, and records review found the average temperature range to be 340°F-354°F with the requirement of 300°F or greater.

- Reporting, all conditions were being met with the last required report received March 16, 2018.

- EU-BOILER5-S1 and EU-BOILER7-S1 are natural gas fired with #2 fuel back-up; EU-BOILER8-S1 is exempt per 63.11195(e) as a natural gas fired boiler.

#### Building 4 Emission Units:

#### *EU-CHROMEPLATING-S2*

- \*Note: This emission unit uses the scrubber as control; 40CFR63 N allows for the use of a surfactant or scrubber to comply.

-PTI has recently been issued to Dart for a new chrome plating line. [they are unsure if they will decommission the current one or keep it around for small jobs.] New chrome plater will be in Building 5.

-Emission limits, are required to be met via stack testing; the most recent test was conducted 6/25/13, the scrubber DP was 3.3" WC. A new stack test will be done once the new chrome plating line is up and running.

statement  
needed about  
EU-PAINT BOOTH  
S2, not  
chrome  
plating

-Monitoring and Recordkeeping, Brian Mead showed us plating are maintenance log and all conditions were being met.

-Stack/Vent Restriction, requires the chrome stack to be 16" x 45' and the strip tank stack to be 6" x 34'. The building itself is approx. 40 ft high and it is safe to assume these conditions are being met.

**-EU-PAINTBOOTH-S2**

\*Note: This paint booth is non-production and is used for machine manufacturing or maintenance.

-Emission limits, all limits were being met according to records kept with the VOC lbs/month at 63.75 during highest month (April) with a limit of 2000.

-Monitoring and Recordkeeping, all records are being kept and are available as required. All the paint used and entered into the facilities spreadsheet was very detailed and I saw no need for sampling at this point.

-Reporting, all reporting is being performed as required.

**-EU-LASERCUT-S2**

\*Note: this device doesn't have a stack and emissions are within the in-plant general environment, though it is located next to a wall vent with fan that is on the east side of Building 4.

-Emission limits, PM limits are completed using month visible emission observations. No VE at the time of my inspection.

**-EU-DIEOVEN-S3 (FG-RULE290-S3)**

\*Note: This oven is quite small.

-Rarely used, emissions very minimal.

-Monitoring and Recordkeeping, records are maintained and reported as required.

-Reporting, is being completed as required.

**-EU-UVPRINTB5-S3 (FG-RULE290-S3)**

\*Note: This line is used for product print testing prior for customer review prior to production.

-Emission limits, The SDS's provided did not identify any HAP's, VOC's, or Toxic's with the information listed though each had a column in the ingredient list identified as "Proprietary" with a range of 7-18%. A request was made via email to provide proof of VOC, HAP and IRSL ITSL information on 8/8/16. Don provided me with a document stating that ASTM method D5403-93 Test Method A was performed and identified the VOC content as <1%.

-Monitoring and Recordkeeping, records are being kept on usage.

-Reporting, all conditions were being met.

**-EU-PPFOAM P14**

\*Note: This line was identified as exempt using Rule 290 per email traffic and supplemental information provided July 30, 2015.

--Last log was January 2016 for 276 lbs VOC/month. Annual total for 2016 was 1962 lbs VOC.

-Monitoring and Recordkeeping, records are maintained and reported as required.

**-Emergency Generators (EU-B2GEN, EU-B5GEN, EU-FIREPUMP2-S3, EU-FIREPUMP3-S3, EU-B6GEN-S3, EU-B7GEN-S3)**

-These generators were found to be compliant with the applicable requirements per the permit. All of them are maintained by the manufacturers and maintenance check data was provided upon request.

**Summary:** Facility appeared to be in compliance with their permit and all applicable state air regulations. No violations were noted during this inspection.

NAME Samuel MacBee DATE 9/13/18 SUPERVISOR B. M.

Note: For ROP renewal - take EU-FIREPUMP2-S3 out & replace w/ EU-FIREPUMPER

