

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

P068133392

FACILITY: Innovative Polymers, Inc.		SRN / ID: P0681
LOCATION: 208 Kuntz Street, SAINT JOHNS		DISTRICT: Lansing
CITY: SAINT JOHNS		COUNTY: CLINTON
CONTACT: Michelle Gitchell, Admin. Manager		ACTIVITY DATE: 02/09/2016
STAFF: Julie Brunner	COMPLIANCE STATUS: Compliance	SOURCE CLASS: <i>MINOR</i>
SUBJECT: Self-initiated inspection of Innovative Polymers, Inc. at 208 Kuntz Street in St. Johns. New SRN of P0681 assigned for this facility.		
RESOLVED COMPLAINTS:		

On 2/9/2016, I conducted an unannounced, ~~self-initiated~~ inspection of Innovative Polymers, Inc. at 208 Kuntz Street in St. Johns. Innovative Polymers was inspected the same day as Innovative Engineering (N3273) in Dewitt.

Innovative Engineering was split in 1995 with Innovative Engineering keeping the urethane molding operations, and Innovative Polymers taking the liquid polyurethane mixing operations. Innovative Polymers, Inc. has since relocated to 208 Kuntz Street in St. Johns. This location was inspected in 2007. The inspection was documented under U19070048 and no equipment was identified as needing an air permit at that time.

A new Source Registration Number (SRN) of P0681 has been assigned for Innovative Polymers, Inc. located at 208 Kuntz Street in St. Johns.

Contacts:

Ms. Michelle Gitchell, Phone no. 989-224-9500, michelle@innovative-polymers.com

Mr. Mike Molitor, Phone no. 989-224-9500, mike@innovative-polymers.com

Facility Description:

Innovative Polymers mixes the individual liquid polyurethane "A" and "B" components (hardeners and resins) and sells the liquid polyurethane "A" and "B" components to the polyurethane molders. The applications for the products include plastic automotive components, decorative plastics, and any place where molded plastics are used to create products.

The facility is located in a small industrial park off of business 127 on the north side of St. Johns. It is surrounded by commercial/industrial property.

The liquid polyurethane mixing processes were originally permitted on Permit to Install (PTI) Nos. 1147-91, 1149-91, and 1150-91 under the business name of Innovative Engineering. The processes have basically been relocated to the Innovative Polymers facility in St. Johns. Below is a list of what was permitted:

Emission Unit Description	Permit No.
IE-70D hardener manufacturing process – drum roller (SCC: 3-08-999-99)	1147-91
IE-90A hardener manufacturing process – drum roller (SCC: 3-08-999-99)	1149-91
IE-100 resin manufacturing process – drum roller (SCC: 3-08-999-99)	1150-91

Inspection:

Weather conditions were cold, cloudy with a little wind and a little snow. No odors were detected in the drive way. No visible emissions were identified from the building.

I met Ms. Michelle Gitchell. Mr. Mike Molitor was out of the office. I discussed the purpose of my inspection and then toured facility operations. The facility was operating during the inspection.

Liquid polymeric raw materials are received and stored in 55 gallon drums. The liquid polymeric components are mixed to customer requirements. For mixing, there are four (4) – 55 gallon drum tumblers, and two (2) - 5 gallon pail tumblers. The sales are ~95% in 5 gallon pails and less than 10,000 pounds per year of liquid polyurethanes. There is also a large electric oven to soften the raw materials in the 55 gallon drums.

There is a small testing area to determine product performance. Two (2) small pressure pots using low pressure (~60 psi) and no heat are used to remove bubbles from test parts while molding. The product testing appears to be exempt under Rule 283(b) and (d).

There is no exhaust stacks/vents for direct venting of emissions in the mixing and storage areas.

A couple of Safety Data Sheets (SDS) were provided for the liquid polyurethane material processed at the facility. There are thousands of SDS on record for the facility products.

Regulatory Review:

If manufacture or process less than 25,000 pounds or use less than 10,000 pounds of methylene diphenyl diisocyanate (MDI) or polymeric MDI then TRI reporting is not required. No TRI reporting appears to be required for this facility.

An estimation of MDI emissions was made by AQD staff assuming at worse-case 10,000 pounds of 100% MDI containing materials would be processed at the facility. The emission calculations were performed using guidance from "api – MDI/Polymeric MDI Emissions Reporting Guidelines for the Polyurethane Industry", Copyright © 2004 as follows:

8.0 Emissions from Mixing/Blending/Filling Process Losses:

$$\text{Filling Losses } (L_{\text{fil}}) = V_{\text{air}} * (1 / 359) * (273.15 / T_{\text{fil}}) * (VP_{\text{MDI}} / 760) * M_{\text{W}} * K_{\text{MDI}} * C_{\text{BLND}}$$

$$V_{\text{air}} = 10,000 \text{ lb/yr MDI} * \text{gallon}/8.92 \text{ lb MDI} = 1121 \text{ gallons/yr MDI}$$

$$V_{\text{air}} = 1121 \text{ gallons/yr MDI} * 7.35 \text{ ft}^3/55 \text{ gallon drum} = 149.8 \text{ ft}^3/\text{yr}$$

$$T_{\text{fil}} = 71.6^\circ\text{F } (22^\circ\text{C}) = 22^\circ\text{C} + 273.15^\circ\text{K} = 295.15^\circ\text{K}$$

$$VP_{\text{MDI}} = 0.000007 \text{ mmHg}$$

$$M_{\text{W}} = 250.26$$

$$K_{\text{MDI}} = 1 \text{ (assumed 100\% MDI)}$$

$$C_{\text{BLND}} = 1$$

$$L_{\text{fil}} = 149.8 \text{ ft}^3/\text{yr} * (1 / 359) * (273.15 / 295.15) * (0.000007 / 760) * 250.26 * 1 * 1$$

$$L_{\text{fil}} = 8.9 \times 10^{-7} \text{ lb/yr of MDI emissions}$$

The mixing, blending, filling, and storage processes could possibly operate as exempt under Rule 284(i) and (l).

Rule 284. Except as specified in R 336.1278, the requirement of R 336.1201(1) to obtain a permit to install does not apply to containers, reservoirs, or tanks used exclusively for any of the following:

(i) Storage or transfer operations of volatile organic compounds or noncarcinogenic liquids in a vessel that has a capacity of not more than 40,000 gallons where the contents have a true vapor pressure of not more than 1.5 psia at the actual storage conditions.

(l) Filling of noncarcinogenic liquids in shipping or storage containers that have emissions which are released only into the general in-plant environment.

These exemption rules are not a great fit for the mixing, transfer, and storage processes at the facility. Methylene diphenyl diisocyanate (MDI) and polymeric MDI do have vapor pressures below 1.5 psia, but other chemicals in the polymeric liquids that are processed may have vapor pressures greater than 1.5 psia. The mixture of polymeric materials may, however, have an overall vapor pressure below 1.5 psia.

Also, some of the chemicals in the polymeric liquids may be suspected carcinogens. Innovative Polymers may want to apply for a PTI per Rule 201 for processes at their facility.

Innovative Polymers appears to be a true minor source of any regulated air contaminants including hazardous air pollutants (HAPs) and is not subject to the Title V Renewable Operating Permit (ROP) program.

MAERS:

The facility does not appear to need to report emission information.

Summary:

The facility appeared to be in compliance with the applicable rules and regulations.

PTIs 1147-91, 1149-91, and 1150-91 were voided as these permits are for equipment that was located at 1541 West Round Road in Dewitt.

NAME Julie L. Brown DATE 2/18/16 SUPERVISOR B.M.

