

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection

N383469810

FACILITY: Laur Silicone, Inc.		SRN / ID: N3834
LOCATION: 4930 South M-18, BEAVERTON		DISTRICT: Bay City
CITY: BEAVERTON		COUNTY: GLADWIN
CONTACT: Josh Watson , President		ACTIVITY DATE: 11/09/2023
STAFF: Nathanael Gentle	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: Scheduled Onsite Inspection		
RESOLVED COMPLAINTS:		

On November 9, 2023, AQD staff conducted a scheduled onsite inspection at Laur Silicone, SRN N3834. The purpose of the inspection was to determine compliance with the Federal Clean Air Act; Article II, Part 55, Air Pollution Control of Natural Resources and Environmental Protection Act, 1994 Public Act 451; Michigan Department of Environment Great Lakes and Energy, Air Quality Division (AQD) Administrative Rules; and to evaluate compliance with the facilities Permit to Install, PTI No. 792-92. EGLE staff were assisted onsite by Mr. Josh Watson, President. At the time of inspection, the facility was found to be in compliance.

Facility Background and History

Laur Silicone is located at 4930 S. M-18 Beaverton, MI 48612. The facility specializes in the development and manufacturing of custom silicone rubber compounds. The process begins by combining filler and silicone in one of the facility's four internal dough mixers, also known as kneaders. The internal dough mixers are equipped with baghouses for particulate matter (PM) control. The primary source of PM in the internal dough mixers is silica dust. From the internal dough mixers, the putty like material is taken to one of two roll mills. The roll mills are used to mix silicone blends with catalyst and pigments. Each roll mill is equipped with baghouse control. The mixed silicone is then fed through one of 3 extruders to shape the material for packaging. A subset of silicone produced on the roll mills is dissolved into solvent. The silicone is dissolved into xylene using one of two dispersion mixers. The silicone-xylene mixture is stored and shipped in metal drums.

Laur Silicone is a minor source of volatile organic compounds (VOCs). One active Permit to Install (PTI) is associated with the facility, PTI No. 792-92. PTI No. 792-92 was issued on July 28, 1993. The permit encompasses the silicone and solvent mixing process. Laur Silicone was last inspected in June 2015. At the time of the 2015 inspection, the facility was found to be in compliance.

Compliance Evaluation

Laboratory Equipment

Laur Silicone operates an onsite laboratory for the purpose of product research and development. Equipment used within the laboratory appears to meet the Permit to Install exemption requirements of Rule 336.1283(2)(b), also known as Rule 283(2)(b).

Silicone Mixing Process

The facility operates four internal dough mixers in which silicone and filler are mixed at room temperature. Silica is used as one of the primary fillers. All four internal dough mixers are controlled by a baghouse located on the outside of the building. AQD staff observed the baghouse. The area around the baghouse appeared clean and did not show signs of improper operation. Staff report baghouse filters on all baghouses are routinely checked and changed as part of onsite maintenance activities. Used filters are reported to be disposed of at a landfill.

Material from the internal dough mixers is taken to one of two roll mills. The roll mills are machines consisting of temperature-controlled metal tubes in which the silicone is rolled between. The roll mills are used to mix silicone blends with catalyst and pigments. Each roll mill is equipped with an associated baghouse control. Staff report the baghouses are in place for dust control if a powder is added during the milling process. Staff report limited amounts of powder are used and that the baghouses primarily serve as a source of air flow in the process. The baghouses were observed to be in place. The area around the baghouses appeared clean and did not show signs of improper operation.

The mixed silicone is fed through one of 3 extruders to shape the material for packaging. Emissions from the extruders are into the general in plant environment.

Equipment including internal dough mixers, roll mills and extruders appear to meet the Permit to Install exemption requirements of Rule 336.1286(2)(a) and (b). The internal dough mixers and roll mills appear to be functionally related to the extrusion operations.

Onsite staff reported the facility is in the process of purchasing and installing a conical twin screw mixer. Staff report the device will have the capabilities of both the internal dough mixers and roll mills in one machine. The unit will be equipped with a baghouse control. At the time of inspection, the baghouse was in place, however, the facility was still waiting for the conical twin screw mixer to be delivered and installed. Based on staff descriptions, the equipment appears to also meet the exemption requirements of Rule 336.1286(2)(a) and (b).

Isopropyl alcohol (IPA) is used to wipe down/clean metal components of the silicone mixing equipment. This use of IPA appears to meet the Permit to Install exemption requirements of Rule 336.1285(2)(r)(iv)

PTI 792-92

A subset of silicone produced onsite is dissolved into solvent prior to sale. PTI 792-92 encompasses the silicone dispersion process. The process is conducted in a fire-proof room. Silicone is dispersed into solvent using two dispersion mixers. Emissions from the dispersion mixers are vented into the fireproof room. The room is equipped with fans which pull air from the room through grates in the floor and discharges vertically upwards to the ambient air through one of five stacks, Special Condition (S.C.) 19. Staff report the fans turn on whenever the door to the room is open. Additionally, staff report the room is equipped with a sniffer that will turn the fans on based on levels measured.

Special Condition 15 stipulates VOC emission limits of 15 pounds per hour and 0.9 tons per year. Verification of VOC emission rates is required at the request of the district, S.C.17. At this time, emission verification testing has not been requested. There shall be no visible emissions from the

process, S.C.16. At the time of inspection, the dispersion mixers were not in use. As a result, staff were unable to verify compliance with the visible emission requirements of S.C.16.

Special Condition 20 stipulates the use of 1,1,1-trichloroethane in the process shall be discontinued by September 1, 1993. At the time of inspection, staff report the only solvent used in the process was xylene. The number of drums produced per calendar year shall not exceed 400 drums, S.C.18. The facility maintains records of the total number of drums sold each year. During calendar year 2022, a total of 15 drums were produced, well below the 400 drums per calendar year limit.

Summary

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NAME

DATE 11/21/2023

SUPERVISOR

