

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

B715065330

FACILITY: R & J MANUFACTURING CO		SRN / ID: B7150
LOCATION: 3200 MARTIN RD, WALLED LAKE		DISTRICT: Warren
CITY: WALLED LAKE		COUNTY: OAKLAND
CONTACT: Glen Ridgway , Owner		ACTIVITY DATE: 07/28/2022
STAFF: Iranna Konanahalli	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: FY 2022 inspection of R & J Manufacturing Company ("R & J Mfg."), fka United Urethane Division, 3200 Martin Road, Walled Lake, Michigan 48390-3021		
RESOLVED COMPLAINTS:		

R & J Manufacturing Company (B7150)
Fka United Urethane Division
3200 Martin Parkway
Mailing Address: Walled Lake, Michigan 48390-1629
Plant location: Commerce Twp.

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PTI No. 329-80 for a process to convert urethane into solid elastomers.

Not Subject to: NESHAP/ MACT T, area source National Emission Standards for Hazardous Air Pollutants: Halogenated Solvent Cleaning (40 CFR, Part 63, Subpart T; NESHAP/ MACT T); Correction; 29484 Federal Register / Vol. 60, No. 107 / Monday, June 5, 1995 / Rules and Regulations; amended National Air Emission Standards for Hazardous Air Pollutants: Halogenated Solvent Cleaning (40 CFR, Part 63, Subpart T); Final Rule; Page 25138 Federal Register / Vol. 72, No. 85 / Thursday, May 3, 2007 / Rules and Regulations. R & J Manufacturing does not use halogenated solvents (>5%w: methylene chloride (CAS No. 75-09-2), perchloroethylene (CAS No. 127-18-4), trichloroethylene (CAS No. 79-01-6), 1,1,1-trichloroethane (CAS No. 71-55-6), carbon tetrachloride (CAS No. 56-23-5), and chloroform (CAS No. 67-66-3)) for cleaning.

On **July 28, 2022**, I conducted a level 2 self-initiated **FY 2022 inspection** of R & J Manufacturing Company ("R & J Mfg."), fka United Urethane Division, located at 3200 Martin Road, Walled Lake, Michigan 48390-3021 (Plant location: Commerce Twp.). The inspection was conducted to determine compliance with the Federal Clean Air Act; Article II, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451; and Michigan Department of Environment, Great Lakes and Energy, Air Quality Division administrative (EGLE-AQD) rules; and PTI No. 329-80 (Neoprene Process).

During the inspection, Mr. **Glen A. Ridgeway** (Phone: 248-669-2460; Fax: 248-669-3006; E-mail: Glen@rjMan.com), President, assisted me.

Ms. **Jennifer K. Lucker** (Phone: 248-669-2460; Fax: 248-669-3006; E-mail: Jennifer@rjMan.com), Corporation Secretary, on vacation this week. Mark W. Ridgeway (Phone: 248-669-2460; Fax: 248-669-3006; E-mail: Mark@rjMan.com), Vice President, was present but did not participate.

Founded in 1962 in Detroit by R. G. Ridgway and Annabella Richardi partnered with Ray Johnson, R & J MFG. Co. is business to create custom Rubber seals. Eventually, R & J Mfg. started producing LEAK TEST SEALS and ELECTRICAL TEST CONNECTORS for automotive testing. R&J's seals are molded, not machined. In 1985, R & J Manufacturing moved its Detroit Plant to this Walled Lake location and all operations at Detroit were shut down; R & J Mfg. sold the Detroit building. Hence, this plant was doubled in size (sq. ft.), which was accomplished by building an extension to the existing building that was built in 1978. The 1985 extension became an office space for the business and the rest (the original building) became a manufacturing space.

R & J Mfg. makes automotive test products (mostly urethane or hard rubber type), test harnesses, pallets, seals mold prototypes, etc. There are metal and plastics cutting operations; but no painting except 3-4 hand-held spray cans per year. The hand-held aerosol spray can painting is exempt from Rule 336.1201 (Permit-to-Install) pursuant to Rule 336.1287(2)(b). Hand-held spray can painting is avoided as much as possible.

NESHAP / MACT T Initial Notification – not subject

About August 1995, AQD received initial notification for halogenated solvent cleaner NESHAP or degreaser NESHAP, which stated that the company was not subject to the NESHAP (40 CFR, Part 63, Subpart T). I found that only degreasers used were two small Safety-Kleen solvent cleaners with mineral spirits (cold-cleaners). Per MSDS, 99.9+ percent of degreasing solvent is mineral spirits with dyes and antistatic agents. Mineral Spirits, also called [Stoddard solvent](#) [CAS 8052-41-3], is a low vapor pressure petroleum distillate.

Two cold-cleaners (Safety-Kleen)

One unit may be described as a "sink on a drum" (Safety-Kleen Model 30 Solvent Parts Washer) the other "soaker" or "dip-tank" (Handi-Kleen Model 32 Graymills). Soaker does not have a drum as a reservoir of solvents. Soaker is simply a solvent tank. Concerning "sink on a drum" parts cleaner (Safety-Kleen Model 30), solvent is stored in the drum (enclosure reservoir) of about 30 gallons capacity. Parts are placed in the sink area and solvent is pumped over the part. The solvent then drains back into the drum. Mineral spirits, a low vapor pressure organic solvent, is used as a cleaner. Oils and grease are the typical soils that are removed. R&J Mfg. leases one of the two parts washer from the Safety-Kleen Corporation, which maintains and repairs the cleaner and recycles the solvent. R&J Mfg. owns Handi-Kleen Model 32 Graymills. The mineral spirits used in most cold-cleaners average in density 6.7 pounds of volatile organic compounds (VOC) per gallon. Safety-Kleen services all degreasing units. Like leased Safety-Kleen Model 30, Handi-Kleen, which is owned by R & J Mfg., is serviced by Safety-Kleen as well.

During FY 2022 inspection, I noticed the procedures were posted and mechanically-assisted lids on two cold-cleaners (2) were maintained closed.

Each cold-cleaner is subject rule 336.1611 or 336.1707 depending on if it is existing or new. A cold-cleaner is exempt from Rule 336.1201 pursuant to Rule 281(2)(h) or Rule 285(2)(r)

(iv). Existing (611) cold cleaners were placed into operation prior to July 1, 1979. New (707) cold cleaners were placed into operation on or after July 1, 1979.

Safety-Kleen Solvent 105 Solvent-MS

100% VOC solvent. 99% Mineral Spirits. Flash Point (FP) = 105 °F TCC. Auto Ignition = NA °F. Boiling Point (BP) = 310-400 °F @ 760 mm Hg. Vapor Pressure (VP) = 2 mm Hg at 68 °F. Specific Gravity (SG, Water = 1.0) = 0.775-0.795. Density (ρ) @ 68 °F = 6.6 lbs / gallon (0.8 kg /L). Flammability range = 0.7 %v (LEL) – 6%v (UEL).

Urethane casting (two areas)

Main operations at this plant are urethane casting and metal cutting (4 machines). Urethane is stored mostly in 55-gallon drums although some specialty low-use urethanes are stored in 5-gallon containers. Urethane liquid, which is highly viscous, is heated to 170-200 degrees Fahrenheit to make it flow. Urethane primer (monomer) is mixed with a curative (catalyst) to start a chemical reaction (polymerization). The mixture is poured into a desired heated (200 degrees Fahrenheit) aluminum mold. Aluminum mold and table where mold is placed are kept heated at all times when the process is operating. Air bubbles are popped with a propane torch upon expansion of air in the bubbles of hot liquid being molded. Molded part is taken out of the mold before curing in an electric oven at 170 degrees Fahrenheit for 12-24 hours. Although ambient curing can be accomplished, the part is cured at 170 degrees Fahrenheit to enhance the polymerization reaction rate and hence reduce curing time. Five different urethanes are used at this location. Approximately, 1,200 gallons of urethane per year is used at this time (CY2022).

While two ovens for curing are designed and fabricated by R & J Manufacturing, one is bought (Grieve Electric Oven, which is located in a separate room). In all, three ovens are present.

Metal cutting

For metal cutting lathe and milling machines are used. For finishing metal parts, grinding and drilling machines are used. Water-soluble cutting oil is used in cutting (drilling, lathe, grinding) machines to cool the parts. Spent oil is stored in 55-gallon drums and disposed of via RCRA Manifest. Mr. Glen Ridgway stated that oils smell due to bacterial action on an occasional basis. He added his company takes a prompt corrective action. Spent cutting oil is eventually recycled. Spitting in the oil by employees is strictly prohibited.

All emissions are discharged to in-plant environment. The machines are exempt from Rule 336.1201 (Permit-to-Install) pursuant to Rule 336.1285(2)(I).

PTI No. 329-80: Neoprene process

In a Neoprene process, proprietary rubber-like materials (one natural and 6-7 synthetic rubbers) are compounded with trade secret organic chemicals, which are regulated by the permit (PTI No. 329-80). The rubber mill emissions are not exhausted outside the building but to an adjacent room where a baghouse is located. Neoprene materials, after compounding, are pressed into aluminum molds under 10,000 psi pressure at 300 deg. Fahrenheit. Neoprene process emissions are ducted to a baghouse located in the next room. The baghouse consists of 40 bags (8 ft. H * 6 inches Diameter). Motor driven shaker

mechanism is present to remove dust cake from bags. All filtered exhaust air is released to in-plant environment. The bags are replaced about once in five years as needed.

Both Urethane and Neoprene molds use a dilute solution of a dish soap as a mold release agent.

All parts, both neoprene and urethane, are detailed, finished and shipped to customers.

Welding, dry blast, finishing machines

Two (2) welding machines with an in-plant exhaust hood with filtration device are present:

1. Miller Synchronware Welding Machine. Tungsten Inert Gas (TIG) welding. Argon gas. TIG welding uses a non-consumable tungsten electrode to heat the metal and can be used with or without a filler.
2. Miller Matic 200 Welding Machine. Metal Inert Gas (MIG) welding. Argon and Carbon Dioxide mixture. MIG welding is generally used for large and thick materials. It employs a consumable wire that acts as both the electrode and the filler material.

Both welding machines (TIG & MIG) are used for non-production purposes. Hence, the machines are operated sparingly. MIG welding and TIG welding operate under a similar principle; heat generated by an electrical current melts the base materials and/or bonding materials, which, when cooled, form a solid joint.

Machining of metal parts is done using water based cutting coolant. There is one rubber mill and compounding machine with in-plant exhaust with fabric filter. There is one Trinco (Trinity Tool Company of Fraser, Michigan) Dry Blast (dry sand blast) Machine with an in-plant exhaust hood with a filtration device. One finishing machine with a filter system where exhaust air is recycled into the plant is present.

Trinco machine is equipped with, operating in series, a cyclone (primary for large particles, protecting bags from wear and tear due impact by high momentum large particles) and a baghouse (secondary for fine particles, 16 bags, 5 ft. H * 6 inches diameter) for air filtration. Exhaust gases are not discharged to outside ambient air. While cyclone recycles shot, baghouse fines are disposed of via RCRA Manifest. Unlike Neoprene process baghouse (motor driven shaker mechanism), Trinco bags are shaken manually to remove dust cake from bags. Make-up shot is added for fines that are disposed of.

Unlike a settling chamber which uses gravitational forces, a cyclone is an inertial separator that separate dust from gas streams using centrifugal forces via circular gas flow design of the cyclone. Hence a cyclone collects only large particles that have significant inertial forces. Cyclone increases longevity of the bags by minimizing wear and tear.

Each machine / equipment is exempt from Rule 336.1201 (Permit-to-Install) pursuant to Rule 336.1285(2)(l)(vi) because the process is vented internally via an air pollution control device (APCD).

Conclusion

I did not find any compliance problems. Although the permit lists toxic chemicals (PTI No. 329-80), this is small VOC and particulate matter source. R&J is in compliance with the permit and Rule 201 exemption rules.

NAME *J S Marshall* DATE November 7, 2022 SUPERVISOR *Joyce*