

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

P119567237

FACILITY: TENIBAC-GRAPHION INC		SRN / ID: P1195
LOCATION: 35155 AUTOMATION DRIVE, CLINTON TWP		DISTRICT: Warren
CITY: CLINTON TWP		COUNTY: MACOMB
CONTACT: Mike Finch ,		ACTIVITY DATE: 03/08/2023
STAFF: Iranna Konanahalli	COMPLIANCE STATUS: Compliance	SOURCE CLASS:
SUBJECT: FY2023 scheduled inspection of Tenibac-Graphion, Inc. (P1195) ("Tenibac" or "Standex" or "Mold-Tech" or "the company"), located at 35155 Automation Drive, Clinton Township, Michigan 48035-3116.		
RESOLVED COMPLAINTS:		

Tenibac-Graphion, Inc. (P1195)
35155 Automation Drive
Clinton Township, Michigan 48035-3116

VN: AQD issued **Violation Notice (VN) dated May 13, 2022**, for failure to satisfy the conditions of PTI No. 32-21, EU-MOLDTECH (nitric acid etching line (installed in 1996) with a packed bed scrubber (installed in 2020) for control of acidic emissions using push-pull capture system for each tank). AQD received May 19, 2022, VN response letter from Mike Finch (MFinch@Mold-Tech.com). The letter states that Tenibac was in the process of preparing an Operation and Maintenance Plan (OMP or O&M Plan) for the packed bed scrubber and hired a consultant, Biplab Roy, Director and Senior Consultant of Advanced Matrix, Inc. (bRoy@Advanced-Matrix.com) to help Tenibac comply with the permit. Subsequently, on July 11, 2022, AQD received an Operation and Maintenance Plan (O&M Plan) via E-mail (Biplab Roy broy@advanced-matrix.com, Mon 7/11/2022 10:24 AM) as required by PTI No. 32-21, EUMOLDTECH, III.1.

PTI: AQD issued to Tenibac-Graphion, Inc. (P1195) **PTI No. 32-21** dated June 25, 2021, for nitric acid etching line (installed in 1996) with a packed bed scrubber (installed in 2020) for control of acid fumes (specifically acidic, HCl, HNO3, etc.) using push-pull capture system for each tank. The dip etching processes were installed about 1996.

Emission units

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date / Modification Date	Flexible Group ID
EU-MOLDTECH	Nitric acid etching line with a packed bed scrubber for control.	See below	NA
<p>Acid etching processes (five tanks) were installed in 1996 in this building. But the packed bed scrubber was installed in 2020, i.e., the etching processes were installed in violation of Rule 201. However, Tenibac voluntarily obtained the permit. The acid fumes (specifically acidic, HCl, HNO3, etc.) are captured using a push-pull capture system at each tank. Anaire Packed Bed Scrubber (Anaire Model No. VT 530 S/L No. 5384, 50,000 cfm air flow) scrubs acidic fumes.</p> <p>The packed bed scrubber is equipped with one Magneheilig pressure differential measurement instrument that measures pressure drop (ΔP) across the packed bed together with mist eliminator. The scrubber liquid is not purged. One rotameter is present to indicate freshwater flow rate. Freshwater is added as make-up water to compensate for evaporative losses.</p>			

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date / Modification Date	Flexible Group ID
EU-MOLDTECH	Nitric acid etching line with a packed bed scrubber for control.	See below	NA
<p>The entire scrubber system is installed with a concrete spill containment. The company will install a valve with a float to control spills due to electric power interruption. Such a spill causes collection of wastewater that needs to be hauled away as hazardous waste. No discharge of wastewater to Great Lake Water Authority Sewer System. There is no discharge permit.</p>			
<p>Etching process is not continuous. The part that needs to be etched is intermittently immersed into an acid tank.</p>			
<p>No caustic is added to scrubber liquid and hence pH monitoring is not done. Neither is required by the permit.</p>			

Changes to the equipment described in this table are subject to the requirements of R 336.1201, except as allowed by R 336.1278 to R 336.1291.

On **March 8, 2023**, I conducted a level-2 **FY2023 scheduled inspection** of Tenibac-Graphion, Inc. (P1195) (“Tenibac” or “Standex” or “Mold-Tech” or “the company”), located at 35155 Automation Drive, Clinton Township, Michigan 48035-3116. 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 & Energy, Air Quality Division (EGLE-AQD) administrative rules.

During the inspection, **Mike Finch** (Phone: 586-747-0021; E-mail: MFinch@Mold-Tech.com), EHS Coordinator N.A., Laser Safety Officer, Standex Engraving, Mold-Tech, assisted me.

Founded in 1969, based in Clinton Township, Michigan, by John A. Gusmano, **Tenibac-Graphion**, is the leader in the texturing industry. Tenibac has grown from five employees to over one hundred with branches in United States (Clinton Township & Grand Rapids, Michigan, Atlanta, Georgia, etc.) and foreign countries (Shanghai, China, South Africa, India, Italy, etc.). 85% work is in Automotive Industry. Tenibac is part of the Forging and Stamping Industry. Tenibac’s main business areas are Engraving Equipment and Engraving Services. Tenibac has ≈ 100 total employees across all of its locations and generates ≈ \$10 million in sales (USD). About August 2018, Tenibac, a provider of Mold and Tool Texturizing Services, joined **Standex Engraving** to Create Broadest Set of Mold Texturizing, Tool Finishing and Prototyping Services. As a result of this combination, Standex is now better positioned to deliver a broader set of design services, mold texturizing, tool finishing, tool enhancement and prototyping services. **Standex International Corporation** is a global, multi-industry manufacturer in five broad business segments: Food Service Equipment, Engraving, Engineering Technologies, Electronics, and Hydraulics.

Acid etching processes consists of several tanks (5). Each tank is equipped with a push-pull capture system for capturing and delivering acid fumes via one common manifold to one common scrubber. Tanks contain different solutions: silver nitrate plus nitric acid (6:1 ratio), spray wash with a hose (ferric), silver nitrate plus HNO₃, cupric chloride. In addition, there is

one empty tank. The captured acid fume emissions delivered by the common manifold are controlled using one packed bed scrubber.

The etching process not continuous but intermittent on as needed basis. After skilled labor-intensive masking, the part is etched.

Permit No. 32-21 Compliance

Permit No. 32-21, EU-MOLDTECH

Nitric acid etching line with a packed bed scrubber for control.

Permit No. 32-21, EU-MOLDTECH, III

The VN response letter dated May 19, 2022, states that O & M Plan would be submitted by July 11, 2022. Tenibac, subsequently, submitted O & M Plan. (PTI No. 32-21, EUMOLDTECH, III.1: operation and maintenance plan)

Tenibac is monitoring pressure drop (ΔP) across the scrubber system. Generally, $\Delta P = 1.8$ inches of water within a range of 0.5-3.5 inches of water. (PTI No. 32-21, EUMOLDTECH, III.2: ΔP)

Permit No. 32-21, EU-MOLDTECH, IV.1-2

Tenibac has equipped the scrubber with a mist eliminator and Magneheilig pressure differential measurement instrument that measures pressure drop (ΔP) across the packed bed together with mist eliminator.

Permit No. 32-21, EU-MOLDTECH, VI.1-3

Tenibac need not perform emissions calculations as such a limit does not exist. Tenibac logs / records on a prescribed form / document, scrubber pressure drops (ΔP) and inspections of excessive noise, leaks, mechanical condition, etc.

In addition, Tenibac performs preventive maintenance of the scrubber.

Sandblasting

One idle (never used) and one active small sandblasting machines are present. Active TRINC Dry Blast Machine is equipped with a dedicated cartridge filter system. Exhaust air is discharged to in-plant environment.

One sandblasting room (12 ft. L * 12 ft. W * 12 ft. H) is present. The room is equipped with a cartridge filter system (32 cartridges). Pulse-jet jet air (1/minute) is used to clean the cartridges. The sand dust is collected in four (4) 55-gallon drum hoppers. Exhaust air is discharged to in-plant environment. Collected sand is disposed of as a municipal solid waste and not reused.

Because exhaust air is recirculated upon cleaning with cartridge filters into the building, the sandblast process is exempt from Rule 336.1201 (Permit-to-Install) pursuant to Rule 336.1285(2)(I).

Conclusion

AQD issued May 13, 2022, Violation Notice (VN) for failure to satisfy the conditions of PTI No. 32-21 EU-MOLDTECH. FY 2023 inspection shows compliance with the permit. VN is resolved.

NAME *J. S. Marshall* DATE April 27, 2023 SUPERVISOR *Joyce*