

February 18, 2020

Ms. Amanda Chapel, Air Quality Analyst  
EGLE, AQD Kalamazoo District Office  
7953 Adobe Road  
Kalamazoo, Michigan 49009-5025



Re: Response to Violation Notice  
Rosler Metal Finishing (SRN: N7321)

Dear Ms. Chapel,

This letter is in response to the Violation Notice from EGLE, dated February 10, 2020. During a recent review of our 2019 records for the pyrolysis (EUPyrolysis) unit at our Battle Creek, Michigan facility, it was discovered that there were three (3) batches that exceeded the process limit of 878 lbs. of polyurethane removed from the burn-off oven. The specific batches were originally reported as follows:

August 28 <sup>th</sup>	Batch #809	4,294 lbs. pre-burn	924 lbs. removed
December 3 <sup>rd</sup>	Batch #1202	4,250 lbs. pre-burn	1,072 lbs. removed
December 9 <sup>th</sup>	Batch #1203	3,987 lbs. pre-burn	1,239 lbs. removed

Rosler Metal Finishing rebuilds vibratory polishing equipment. The first step in the process is to remove the protective polyurethane coating that has been added as a liner to the part(s). With a brand new unit (e.g., never used), where the amount of protective coating was known, the prediction on the amount of polyurethane that would be removed during pyrolysis would be easy.

When removing the polyurethane from customer supplied parts, we must rely on our historical information and our judgement as to how much polyurethane is on each part in order to estimate what can be placed in the oven. During 2019 the oven had 9 batches with pre-pyrolysis weights exceeding 4,000 lbs. In seven instances, the amount of polyurethane removed was between 10.5% and 16.2% of the pre-pyrolysis weights. To have removal fractions as high as 25% (Batch #1202) is unusual.

#### August 28<sup>th</sup> Batch #809

Batch #809 was our first batch to exceed 878 lbs. of polyurethane removed and difficult to have predicted. On this particular occasion, the oven was loaded with two parts having a combined pre-burn mass of 4,294 lbs. Historically, we would have expected a removal between 550 and 700 lbs. Had we been able to predict a larger removal we would have separated the two pieces into separate batches.

### December 3<sup>rd</sup> Batch #1202

Batch #1202 consisted of a single unit (bowl) with a pre-burn weight of 4,250 lbs. Since this consisted of just one unit, separation into separate batches was not possible. Again, at this pre-burn mass, we would have expected a net removal of 690 lbs. or less. At 1,072 lbs., the polyurethane was more than 25% of the pre-burn mass which was unusual and unexpected.

### December 9<sup>th</sup> Batch #1203

A review of batch #1203 found that the data entered into the record keeping was in error. The corrected record for Batch #1203 has only one part with a starting weight of 2,253 lbs. and a post-burn mass of 1,734 lbs. for a net weight (polyurethane waste) removal of 519 lbs.

### Permit #27-11

Permit-to-Install #27-11 established a process limitation of 878 lbs. of polyurethane removed per batch based on the application presented. The permit application assumed incoming parts would have wear, resulting in a maximum of 65% of the original polyurethane still on the part and that the largest expected parts would have had an initial poured mass of approximately 1,350 lbs. of polyurethane (1,350 lbs. X 65% = 878 lbs.).

The toxics for the permit application looked at the estimated emissions from the pyrolysis of five different (typical) polyurethanes. Each urethane was evaluated as representing 100% of the operations on an annual basis. Each batch was estimated to cover a 10 hour period, in order to estimate a maximum number of annual batches. The annual emission limit was based on an empirical estimation for the worst case polyurethane (highest chlorine content). The hourly limit was based on the predicted annual emissions divided by the total hours of expected operation for the oven [2,679 lbs. / (70 batches x 10 hrs./batch) = 3.83 lbs./hr.]. Therefore, the permit limit of 878 lbs. removed, established as a correlation between the amount of waste polyurethane removed and an average hourly emission rate.

On December 21, 2011 a compliance stack test was conducted to confirm compliance with the hourly emission rate. The test utilized series of parts with a polyurethane coating containing the highest expected chlorine content (4.25%). The amount of polyurethane removed was measured at 687.5 lbs. (30.2% of pre-burn weight) and the predicted (empirical) batch emission rate for HCl was calculated at 30.01 lbs. (1.9 lbs./hr. average – 16 hour batch). The test results, based on Method 26a, resulted in an average emission rate of 1.39 lb./hr.

The two batches in question (#809 & #1202), each had higher removal rates than the experienced during the test but their chlorine contents were 2.84% and 2.55% respectively. The empirical HCl emission rates for each batch were calculated at 26.96 lbs. and 28.08 lbs.

which are less than the batch emissions calculated for the compliance test. In addition, each of these batches ran for 30+ hours (#809 – 30 hours; #1202 – 31 hours), which would calculate to an hourly emission rate of 0.89 lbs./hr. and 0.91 lbs./hr. respectively.

### Conclusions

Our records do indicate that the amount of polyurethane removed from batches #809 and #1202 did exceed the permit limit of 878 lbs./batch. The data initially provided for Batch #1203 was determined to be in error and the corrected information demonstrates the removal below the permit limit.

Based on historical operating data, the high removal rates were an unexpected outcome. However, we believe that the hourly emission rate of HCl, in both batches was less than the hourly limit of 3.8 lbs./hr. listed in PTI #27-11.

We sincerely apologize for exceeding the removal rate of waste polyurethane and we pledge to review our procedures for loading the oven to determine a better predictive tool for estimating the amount of waste polyurethane expected to be removed per batch. Should you have any questions regarding the above discussion, please contact me either by e-mail at [l.brumm@rosler.com](mailto:l.brumm@rosler.com) or by telephone at 269-441-3615.

Sincerely,  
Rosler Metal Finishing



Lane Brumm  
Compliance Manager EHS

cc: Mary Ann Dolehanty, EGLE  
Dr. Eduardo Olaguer, EGLE  
Ms. Jenine Camilleri, EGLE  
Mr. Christopher Ethridge, EGLE  
Mr. Rex Lane, EGLE