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Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

VAPCO PRODUCTS, INC.
401 Marshall Rd.
St. Louis, MO 63088

March 20, 2019
Lab No. 19C-0268
Invoice No. 254326
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Attention: Scott Garner

REPORT OF ANALYSIS

MATERIAL: PVC Spray N Lock

SUBJECT: Determination of Impact of Spray N Lock on Potability of Pipe Water

TEST METHODS: ASTM D3452-06(2017) – Standard Practice for Rubber – Identification by Pyrolysis-Gas Chromatography (Py-GC/MS) - Modified

CONCLUSION:

This analysis indicates that the PVC Spray N Lock did not negatively impact the potability of water purged through the system within 1 minute of completed curing. 2-butanone (MEK) was not detected in water rinsate of a welded elbow fitting. The detection limit of this analysis was 10 parts per million.

RESULTS:

The as-received appearance of the PVC Spray N Lock is illustrated in the enclosed Figure 1. The only listed ingredients of the PVC Spray N Lock are extremely volatile hydrocarbon accelerants and 2-butanone.

A length of potable water rated ¾" PVC pipe and elbow fittings were purchased. Two lengths of pipe were cut and bonded to the elbows using PVC Spray N Lock while following the instructions on the can. The pipe was allowed to stand for 1 minute after the completion of instructions. The pipe was then rinsed with tap water, and the rinsate was collected. The pipe was purged with tap water for 15 minutes, and then a rinsing was collected again.

The two rinsates were analyzed using Pyrolysis/Gas-Chromatography. Additionally, a 10 part per million standard of 2-butanone in water was prepared. Pyrolysis is the thermal decomposition of materials in an inert atmosphere. The sample is dropped directly into a micro-furnace with capabilities from 40°C to 1050°C. In pyrolysis, large molecules cleave at their weakest points and produce smaller, more volatile fragments. These fragments can be separated by gas chromatography. Pyrolysis chromatograms are typically complex because a wide range of different decomposition products is formed. The data can either be used as a fingerprint to prove material identity or the GC/MS data is used to identify individual fragments to obtain structural information.



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GC/MS analysis of both rinsates did not detect the presence of 2-butanone in either sample.

The bonded pipe section was tested with potable water until tube burst or joint failed. The test was performed with calibrated Pressure Gauge ID: MECH127.

Sample ID	Pressure	Result
PVC Spray N Lock	215 psi	Sample failed at 90° elbow joint

JWL/jlm

Jacob W. Long, Manager
Chemical Testing



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