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EPA ID # NJ01298 NJ DEP ID # 08012

MCHM REDUCTION TEST REPORT

Report # 14-16-MCHM Reduction Test (Purinize Mineral Solution)
Customer Name: Purinize.Com.
Report Date: February 13, 2014

EXECUTIVE SUMMARY

Three liters of tap water were spiked with 400 µg of 4-Methyl-1-cyclohexanemethanol (MCHM) in a flask, 12 mL of Purinize was added to this solution, the flask was closed and mixed well; one liter of this solution was filter through 0.45 micron paper after 12 hours, a second liter of this solution was filtered through 0.45 micron paper after 24 hours, the final liter of the solution was filtered through 0.45 micron paper after 48 hours. The spiked solution and the filtered solutions were tested following the EPA method 525 for drinking water; the MCHM in the tap water was reduced by 99.9% after 48 hours of adding Purinize to the spiked solution and filtered through 0.45 micron filter paper.

INTRODUCTION

Three liters of tap water were spiked with 400 µg of 4-Methyl-1-cyclohexanemethanol (MCHM) in a flask, 12 mL of Purinize was added to this solution, the flask was closed and mixed well; one liter of this solution was filter through 0.45 micron paper after 12 hours, a second liter of this solution was filtered through 0.45 micron paper after 24 hours, the final liter of the solution was filtered through 0.45 micron paper after 48 hours. The initial spiked solution and the filtered solutions were tested following the EPA method 525 for drinking water; the MCHM in the tap water was reduced by 99.9% after 48 hours of adding Purinize to the spiked solution and filtered through 0.45 micron filter paper.

REAGENTS AND LAB EQUIPMENT

Purinize mineral solution.
4-Methyl-1-cyclohexanemethanol (MCHM) TCI America, Product Code M1412, CAS # 34885-03-5, Reagent grade >98.0%.
Hewlet Packard 5890/5972 GC/MS with Chem Station data system.
Micro syringes and type A glassware necessary to perform the EPA 525 method for drinking water analysis.
Hach 0.45 microns filter paper.

PROCEDURE

Three liters of tap water were spiked with 400 µg of 4-Methyl-1-cyclohexanemethanol (MCHM) in a flask. Added 12 mL of Purinize to the spiked solution, the flask was closed, mixed well and let sit for 12, 24, and 48 hours inside a fume hood. One liter of the solution was filtered through a 0.45 micron paper after 12 hours, a second liter of the solution was filtered through a 0.45 micron paper after 24 hours, the final liter of the solution was filtered through a 0.45 micron paper after 48 hours, the initial spiked solution and the filtered solutions were tested following the EPA method 525 for drinking water. The results are summarized in Tables 1 and 2 below.

RESULTS

Table 1
Spiked Tap Water Properties

Parameter	Spiked Tap Water	Target
pH	7.25	7.00 to 8.00
TDS	295 mg/L	200 to 500 mg/L
Temperature	19.5 °C	20 ± 2.5°C
Turbidity	0.45 NTU	< 1 Nephelometric Turbidity Units
Free Chlorine	0.5 mg/L	0.25 to 2.0 mg/L
MCHM	135 µg/L	135 µg/L

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Table 2
Filtered Water Results

Time Before Filtering	MCHM concentration in Purinize Filtered Water	% Reduction
12 hours.	7.5 µg/L	94.4 %
24 hours	3.5 µg/L	97.4 %
48 hours	<0.1 µg/L	99.9 %

CONCLUSION
The Purinize mineral solution combined with the 0.45 microns filter paper reduced the MCHM concentration in the tap water by 99.9 % after 48 hours treatment.

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