DWA Task Group on Tin Extraction
Meeting Notes
MS Teams
July 24, 2025

Meeting Participants

Members:

Ryan Nadel (Charlotte Pipe and Foundry Company) - Chair
Robert Smith (PMC Group)
Guoxin Lu (WQA)
Mike Briggs (IAPMO)

Observers:

Cassandra Leone (NSF) – Secretariat
Joseph Mirsadshanow (Lubrizol)
Hendi Nurwadi (Charlotte Pipe Foundry)

Introduction

This task group was formed at the 2021 DWA-SC JC meeting to consider using an alternate test method to distinguish between inorganic and organic tin compounds. Attendance was recorded, and the meeting started with the antitrust statement. Quorum was not reached.

Key Summary Points

1. IAPMO data review
    - R. Nadel reviewed the data distributed to the TG, noting that it was based on Thermo Fisher Scientific Application Note 10305, and provided results for six species of organotin.
    - Calibration curves and validation methods were discussed, with multiple TG members agreeing on good relative standard deviation numbers and alignment with the regression lines.
        - Six organotin species were analyzed: dimethyltin, methyltin, butyltin, dibutyltin, octyltin, and dioctyltin.
        - The relative standard deviation was under 30% for all concentrations. The lab ran calibration curves at different concentrations and checked repeatability with seven duplicates at 2, 4, 8, and 20 parts per billion.
        - The lab initially used 0.3% Tetra Ethylborate but increased it to 0.9% to obtain better data up to 20 parts per billion.
    - Second source verification process
        - Two different sources for standards were used.
        - Most results were within the desired range, but there were some variations, particularly with methyl tin.

2. NSF data review
    - R. Nadel described that the NSF analysis was conducted in a different lab but followed a similar approach to the IAPMO data.
        - Methodology was based on the modified analytical method by Agilent Application Note (5591-4434EN)

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        - The analysis was performed on a triple quadrupole instrument, and this method can be adapted for different sensitivity requirements.
    - The data focused on the limit of detection and limit of quantification for the six organotin species, using a calibration range of .1 to 20 µg/L.
        - R-squared values of regression lines indicated good linearity, with octyltin showing lower but acceptable fits.
        - Limits of detection were considered sufficient for project requirements.
        - Standard deviations were similar to those found in the IAPMO data.
        - Testing meets reequirements for NSF 61.
3. Ballot proposal
    - The TG discussed wording a ballot based on the final test results.

Action Items

1. **R. Nadel to propose ballot language.**
2. **C. Leone to prepare ballot and create a Doodle poll for the next meeting as necessary.**