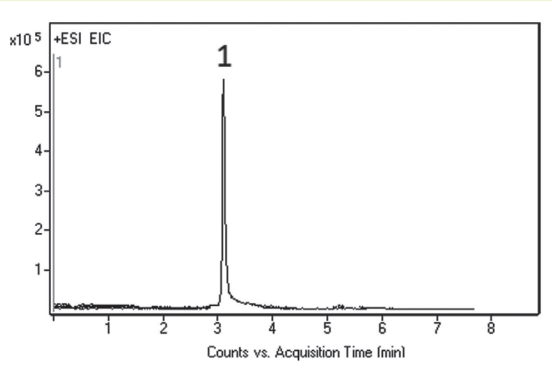
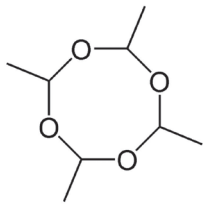
Metaldehyde in Slug Pellets

LC-MS method for pesticide formulation





Metaldehyde

Note: Metaldehyde is a cyclic tetramer of acetaldehyde. Slug pellets contain wheat as bait with a small amount of metaldehyde. These pellets are sold widely under a variety of trade names, such as Ariotox®, Cekumeta®, Deadline®, and others.

Method Conditions

Column: **Cogent Bidentate C18 2.ō™**, 2.2µm, 120Å

Catalog No.: 40218-05P-2

Dimensions: 2.1 x 50 mm

Mobile Phase: A: DI H_2O / 0.1% formic acid
B: Acetonitrile / 0.1% formic acid

Gradient:

time (min.)	%B
0	10
3	100
6	100
7	10

Post Time: 3 min

Injection vol.: 1µL

Flow rate: 0.4mL/min

Detection: ESI – POS - Agilent 6210 MSD TOF mass spectrometer

Sample: Slug pellets were ground (3.25% metaldehyde) and 800mg was transferred to a 25mL volumetric flask. A portion of 50/50 solvent A/solvent B diluent was added and the flask was sonicated 10min. Then it was diluted to mark, mixed thoroughly, and filtered with a 0.45um nylon syringe filter (MicroSolv Tech Corp.).

Peaks: 1. Metaldehyde (177.1121 m/z)

Discussion

As it has no double bonds, metaldehyde is a non-UV absorbing compound. Therefore other detection methods need to be investigated besides conventional UV-HPLC. LC-MS was found to be well-suited to its analysis by searching for the EIC corresponding to the [M+H]+ ion. Good retention and peak shape were observed for this analyte using the Cogent Bidentate C18 2.ō column.

MANUFACTURED BY:
MICROSOLV TECHNOLOGY CORPORATION
9158 Industrial Blvd NE
Leland, NC 28451
p: 1.732.380.8900
f: 1.910.769.9435
customers@mtc-usa.com
www.Cogent-HPLC.com