Waters™

應用手冊

# Propham in Potatoes by GC-MS

Waters Corporation

This is an Application Brief and does not contain a detailed Experimental section.

## Abstract

This analytical method can be used to monitor Propham residues in potatoes.

## Introduction

Propham is the active substance used as herbicides and potato sprout inhibitor. This analytical method can be used to monitor Propham residues in potatoes.

## Experimental

### Pre-treatment

1. Add 15 g of ground potatoes into a 50 mL centrifuge tube.

2. Add 15 mL 1% acetic acid in acetonitrile and shake.

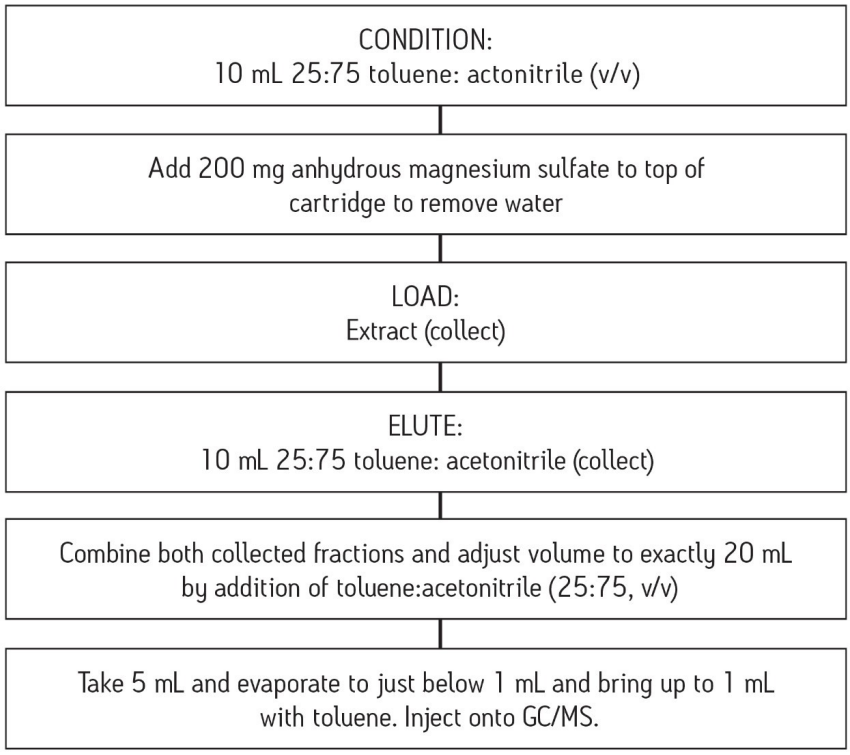
3. Add 1.5 g anhydrous sodium acetate and 6 g anhydrous magnesium sulfate (equivalent to contents of DisQuE Pouch, AOAC method).

4. Centrifuge >1500 rcf for 1 minute.

5. Take out 7.5 mL extract and dilute to 10 mL with 2.5 mL toluene.

## SPE Procedure

Sep-Pak® Vac Carbon Black/Aminopropyl 6 cc/500 mg/500 mg




## GC Conditions

| | |
|---|---|
| GC System: | Agilent 6890 |
| GC Column: | DB-5ms, 30m x 0.25mm (i.d.), 0.25 µm film. Direct connection of column to injection-port liner |
| Transfer line to MS: | 300 °C |
| Source temp.: | 200 °C |
| Injection volume: | 1 µL splitless |
| Injection port temp.: | 180 °C |

| | |
|---|---|
| Initial temp.: | 80 °C |
| Time at initial temp.: | 1 minute<br>Then Program at 10 °C/ min to 200 °C<br>Then at 25 °C minute to 300, hold 5 minutes |

## GC-MS Conditions

| | |
|---|---|
| GC-MS System: | Waters Quattro micro GC |
| Ionization mode: | Electron Impact (70 eV)<br>Selected-Ion Recording (SIR) |

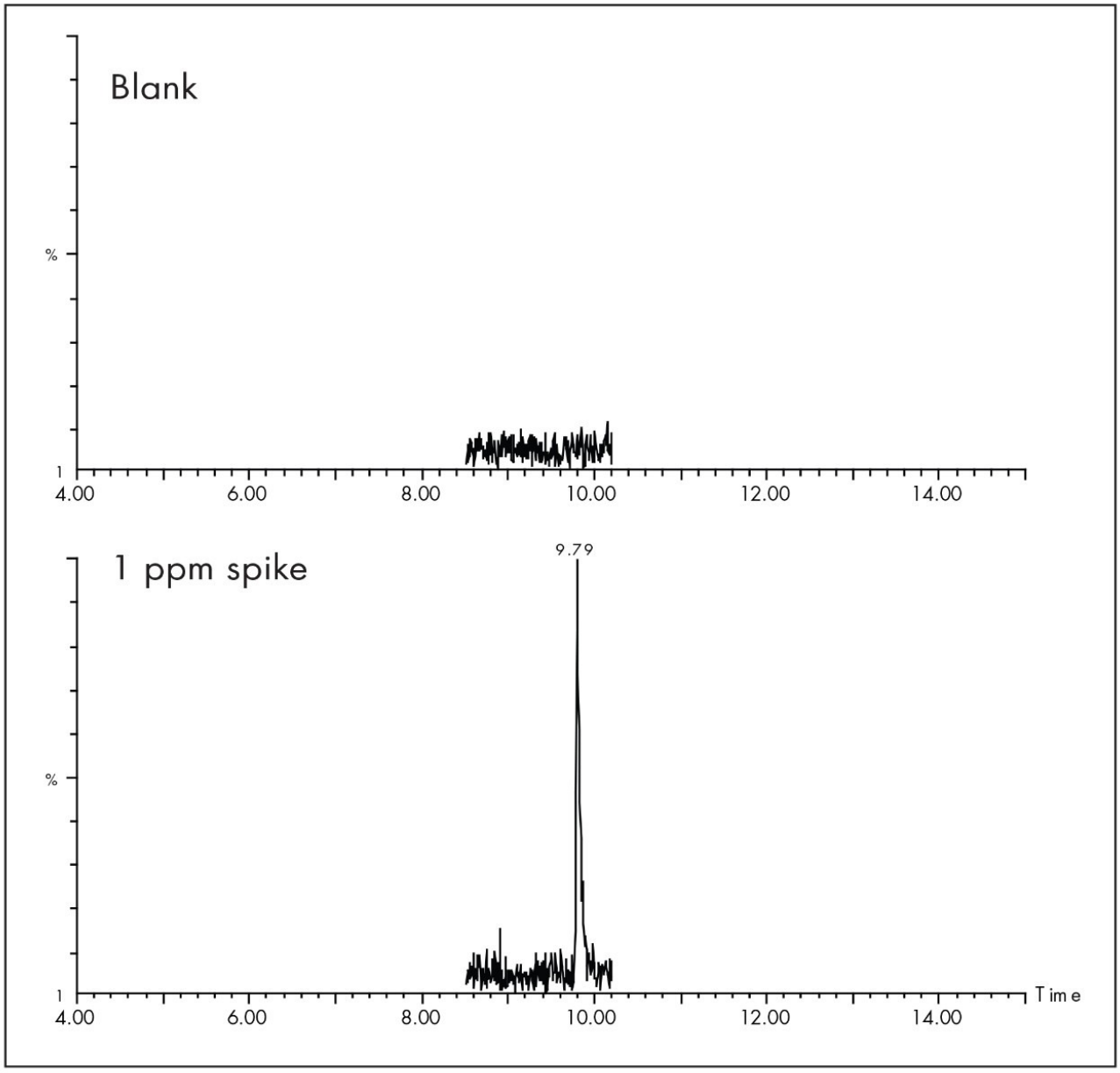
## HP6890 GC Flow1

| Time (min) | Rate Final (mL/min) | Flow (mL/min) |
|---|---|---|
| 0.00 | 50 | 3 |
| 0.50 | 50 | 3 |
| 0.60 | 50 | 1 |
| Initial Flow: | 1 mL/min | |

### GC-MS (SIR)

| Channel | Mass |
|---|---|
| 1 (Quantification) | 92.8 |
| 2 (Confirmation) | 119 |
| 3 (Confirmation) | 120 |

## Results and Discussion




Chromatogram of a 1 µg/g spiked potato sample.

| Compound Name: propham 92.8 | RT | Area |
|---|---|---|
| 1 ppm spiked 1 | 9.78 | 379.00 |
| 1 ppm spiked 2 | 9.82 | 382.00 |
| 1 ppm spiked 3 | 9.80 | 458.00 |
| 1 ppm spiked 4 | 9.79 | 399.00 |
| 1 ppm spiked 5 | 9.75 | 421.00 |
| Mean | | 407.80 |
| RSD (%) | | 8.01 |
| Recovery (%) | | 95.73 |

Recovery results for 1 µg/g spiked potato sample.

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