# DETERMINATION OF METHAMIDOPHOS IN OIL USING GEL PERMEATION CLEAN-UP AND CAPILLARY GAS CHROMATOGRAPHY

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## SCOPE

This test method prescribes the requirements for the determination of methamidophos in oil matrix.

## DEFINITION

*Methamidophos* is the common name for O,S-dimethyl phosphoramidothioate with the structure as in *Figure 1*.

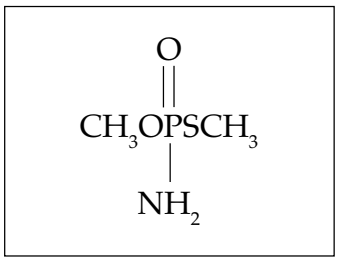


*Figure 1. Structure of methamidophos.*

It is a colourless crystal with melting point of 46.1°C, vapour pressure of 2-3 mPa (20°C), $n_D$(40°C) is 1.5092, $d_4$(20°C) is 1.31 g litre$^{-1}$ and solubility in water at 20°C is >200 g litre$^{-1}$.

## PRINCIPLE

The methamidophos residue is extracted from the oil matrix and the extracted sample is separated from the co-extractives using gel permeation chromatography (*Figures 2* and *3*). The fraction containing the analyte was collected, solvent evaporated and injected into a gas chromatograph fitted with flame photometric detector.

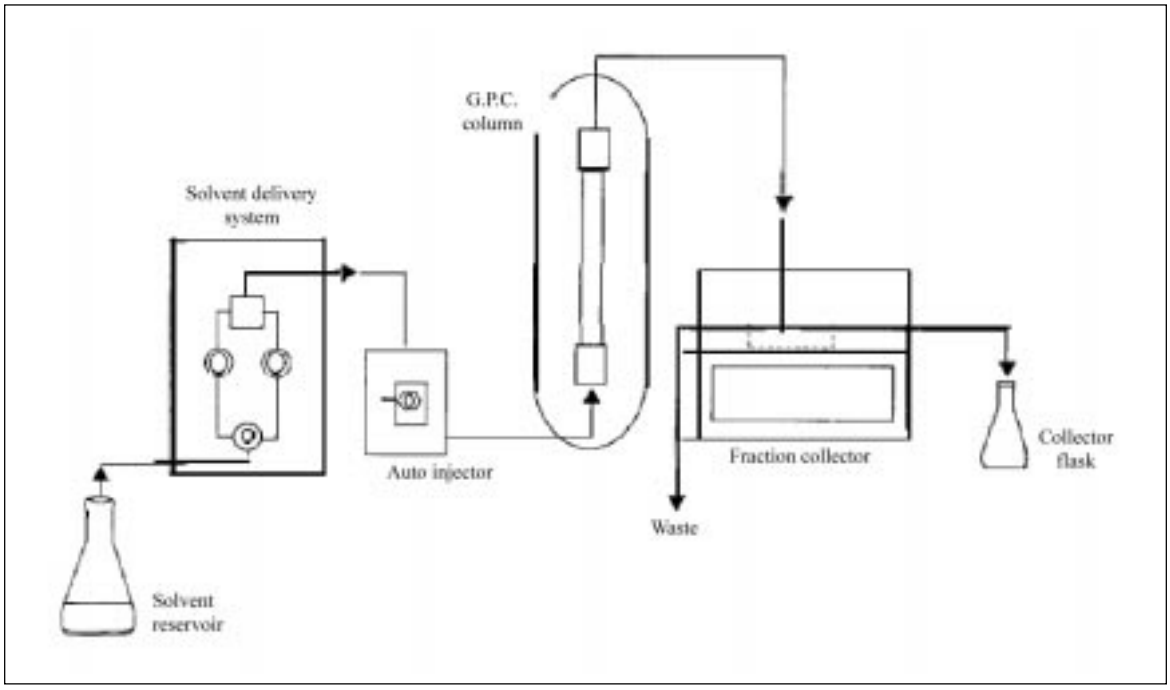


*Figure 2. The fluid path of the GPC clean-up system for pesticide.*

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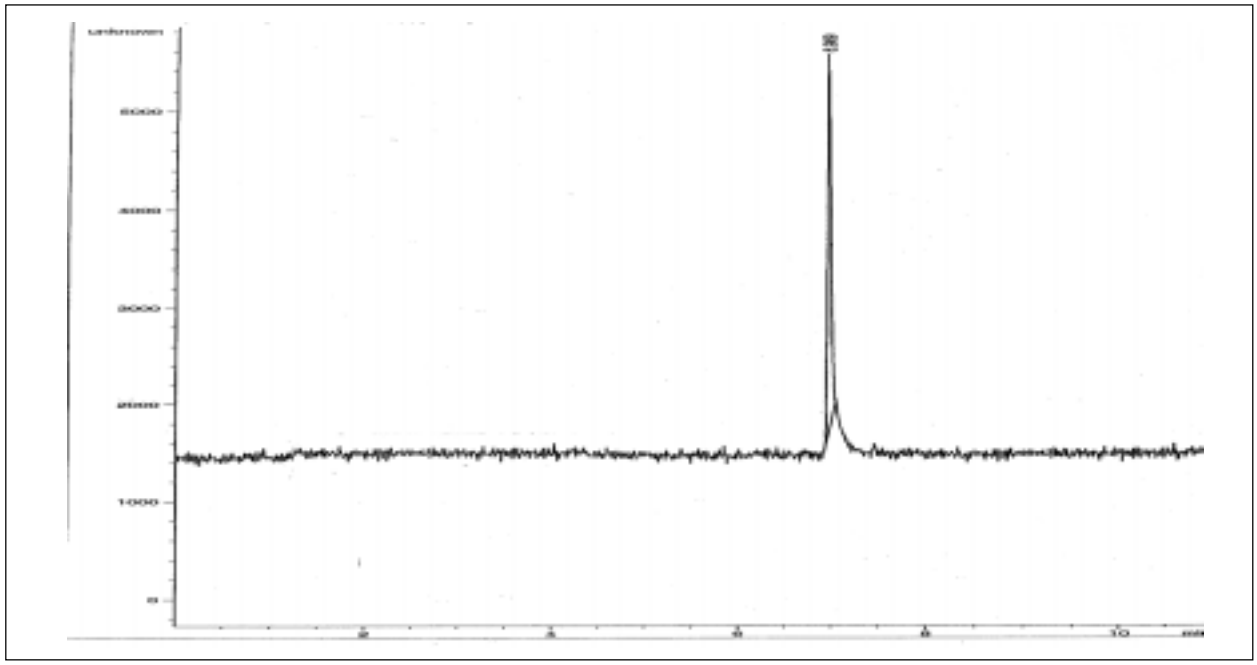

*Figure 3. Chromatogram of standard methamidophos.*

## RECOVERY

Recoveries of methamidophos at the range of 0.05-1.00 µg $g^{-1}$ were 86%-105%.

Coefficient of variation was <10% for the whole range of concentration.

Estimated limit of detection was 4.0 µg $kg^{-1}$.

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