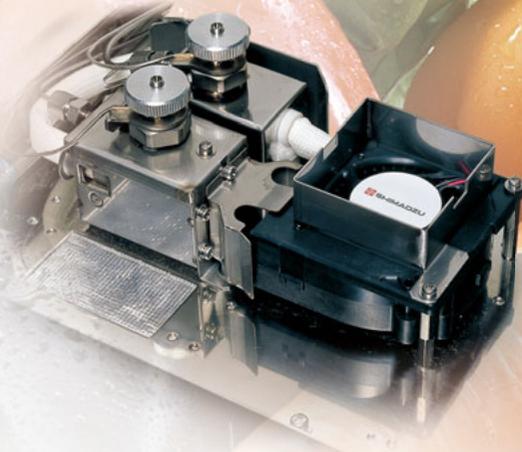


OCI/PTV-2010

Sample Injection Unit for On-Column Analysis

Residual Pesticide Analysis System

Gas Chromatograph GC-2010 Series



One System Meets Versatile Analysis Requirements for Residual Pesticides in Food

The management and quality checks of ingredients are critical factors in ensuring food safety. The Food Sanitation Law stipulates methods for analyzing residual pesticides in foods for individual agricultural, livestock and fishery products, as well as for individual pesticide compounds.

The Shimadzu gas chromatograph GC-2010 Series, provided with a wide range of options for sample injection units and detectors, enables accurate and quick analysis of target pesticide compounds in accordance with regulations.

Features

Three selective detectors can be installed

Select detectors suitable for target pesticide compounds. Available detectors include an ECD for chlorinated pesticides, FTD for nitric and organophosphorus pesticides and FPD for sulfuric and organophosphorus pesticides. It is also possible to mount an ECD, FTD and FPD at the same time.

Detector temperatures conform to official methods

Some pesticides' compounds are designated to be analyzed at the maximum detector temperature of 300°C as specified by the Food Sanitation Law. The GC-2010's FPD and FTD are designed with heat resistance that meets this requirement (FPD: 350°C and FTD: 450°C).

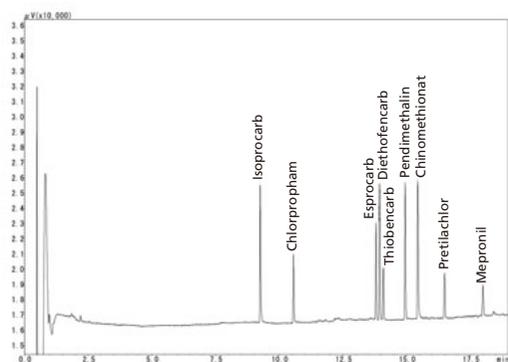
On-column analysis for thermally labile compounds

Use the on-column analysis sample injection unit for the analysis of pesticide compounds, such as DEP (trichlorfon) and endrin, which easily decompose with heat processing. It is also possible to use a capillary column with a small internal diameter without the press-tight connector.

Dual analysis for multi-sample analysis

Two samples can be analyzed in parallel by configuring a dual injection system incorporating two sample injection units and two detectors.

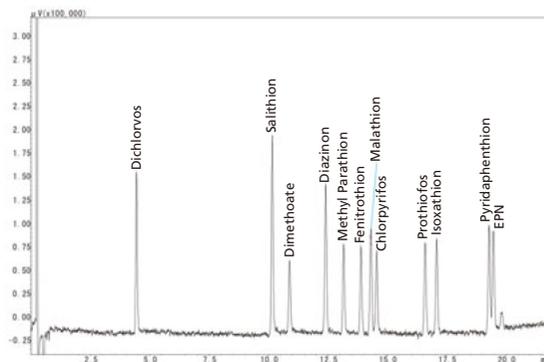
Analysis example of 0.1ppm nitric pesticide using FTD



Analysis conditions

Column: 5% diphenyl, 95% dimethyl polysiloxane, 0.25mm x 30m, 0.25μ
 Carrier gas: He 45cm/s (constant linear velocity mode)
 Column oven: 80°C (1min) - 10°C/min - 2°C - 5°C/min - 250°C
 Sample injection unit: Split / splitless (high-pressure splitless mode 1min) 250°C
 Detector: FTD H₂ 1.5mL/min, Air 140mL/min, makeup (He) 25mL/min 0.5pA 280°C

Analysis example of 0.1ppm phosphorus pesticide using FPD

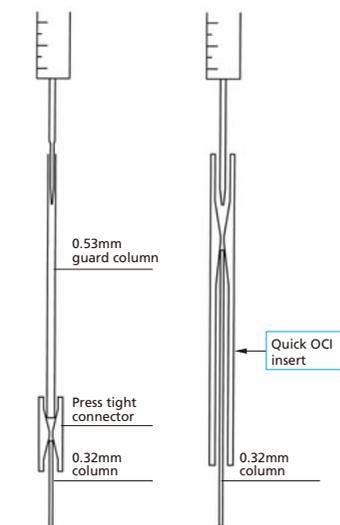


Analysis conditions

Column: dimethyl polysiloxane 0.53mm x 15m, 1.5μ
 Carrier gas: He 130cm/s (constant linear velocity mode)
 Column oven: 80°C (1min) - 8°C/min - 250°C
 Sample injection unit: split/splitless (high-pressure splitless mode 0.5min) 230°C
 Detector: FPD (P mode) H₂ 80mL/min, Air 20mL/min 260°C

OCI/PTV-2010 quick on-column injection

Connection of the 0.32mm-diameter column



Conventional method: OCI syringe Quick OCI method: general syringe

- Full-volume sample injection is possible regardless of the column's internal diameter.
- Column connection is easy because a press-tight connector is not used.
- High-resolution chromatograms can be obtained for thermally labile samples.
- Standard syringes can be used, eliminating the need to procure special syringes.

GC-2010 Series Dual Injection System



- Select any type of sample injection unit and detector. It is possible to mount both the same and different types of injection units and detectors.
- When mounting the same type of detectors, two samples can be analyzed in parallel.
- When mounting different types of detectors, different groups of compounds in a sample can be analyzed in parallel.
 *Sample needs to be put into two vials.



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