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Preprocessing tool for microanalysis

Pinpoint concentration plate

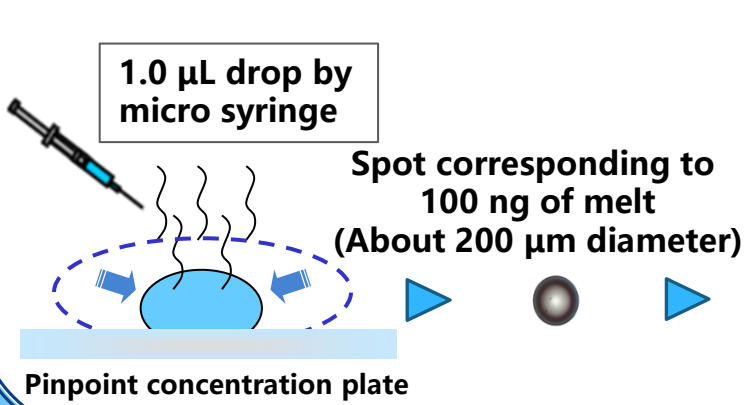
In the analysis of trace component, it is sometimes important to efficiently concentrate dilute solutions without contamination. The "pinpoint concentration plate" developed by Toray Research Center can quickly concentrate dilute solution to small spots.] Please use this method to evaluate the residue after surface cleaning of electronic parts or for lot management of surface treatment agent, and so on.

What is pinpoint concentrate plate?

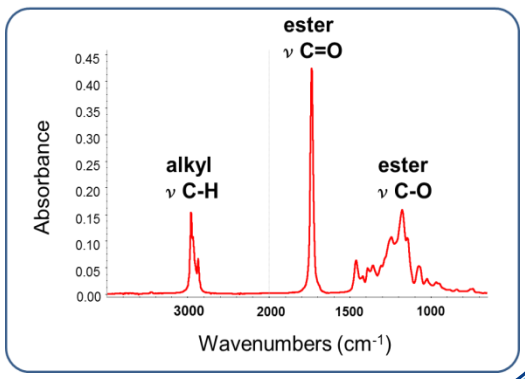
Pinpoint concentration plate is a special water-repellent plate developed by our company (Japanese Patent No. 5870439).

When a dilute solution is dropped onto this plate, spherical droplets are formed on the surface, and the solvent is evaporated from the droplets immediately afterward, so that the trace components dissolved in the liquid are concentrated into a small spot of about several 10 μm to 200 μm diameter.

By measuring these spots with infrared spectroscopy (IR) and mass spectrometry (MS), qualitative analysis of components can be easily performed.



FT-IR measurement



Features of pinpoint concentration plate

- No complicated pre-processing is required. Solutions can be concentrated in a short time without contamination! In case of 1 μL chloroform solution, the time required for concentration and spot formation is **only about 10 seconds**!
- Possible to directly measure the samples concentrated on the plate with **an infrared absorption measurement method** (microscopic transmission method).
- Spots can be formed at **more than 10 places** on the plate by selecting the place to drop. If the spots can be thoroughly cleaned after the infrared absorption spectrum measurement, it is also possible to use the same places repeatedly!
- As another application, it is possible to execute **mass spectrum (MALDI-MS*)** measurement (introduced in analysis case).

*: Matrix Assisted Laser Desorption/Ionization-Mass Spectrometry

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Analytical application examples

- Qualitative analysis of trace residue components after cleaning the surface of electronic components.
- Qualitative analysis of surface treatment agents for fibers, films, resin molded products.
- Screening analysis of chromatographic peaks such as TLC and HPLC.

Price



Starter set (1550-SS)

Concentration plate (15mm×50mm×0.63mm)	2 pieces
Plate holder for IR measurement	1 piece
Dedicated tweezer	1 piece
Instruction manual	1 book

2 Plates set (1550-02

The plate can be processed to other shapes and sizes. Please contact us.

FAQ



Q1 Will the plate crack if I drop it on the floor?

Since the plate is made of silicon substrate, it will be easily damaged if it is dropped. Please be careful about handling and never use it in a state where it is partly damaged. Please be careful thoroughly also when you dispose the plate. In addition, since handling will become easy by using dedicated tweezers included in the starter kit, please consider about it.





Q2 Is not the measurement result influenced by surface treatment substance?

There is no influence of surface treatment substance. Since we are doing molecular level surface modification (nano order thickness), there is no influence of surface treatment substance.





Q3 I want to know the compatibility between solvent and plate?

For acidic and alkaline solutions, since water repellent effect on the substrate surface is lost, such solution cannot be used. Solvents with high volatility such as chloroform become a spot cleanly in a short time. Alcohol and water tend to spread slightly. High boiling point solvent (toluene etc.) takes longer time to concentrate than chloroform but a clean spot is formed. If you have any other questions, please do not hesitate to contact us.





Q4 Is it possible to warm the plate?

Mild warming of about 60 ° C is desirable. Please inquire us for details.



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