

## MonoTrap™ Handling Instructions (Version 1-0)

Thank you very much for purchasing MonoTrap™. Please read this leaflet carefully and use the product appropriately so that MonoTrap™ can fully exert its excellent performance. MonoTrap™ is a new adsorbent which allows concentration of solid/fluid aroma and volatile components for analysis simply and economically.

### For safe use



#### Caution!

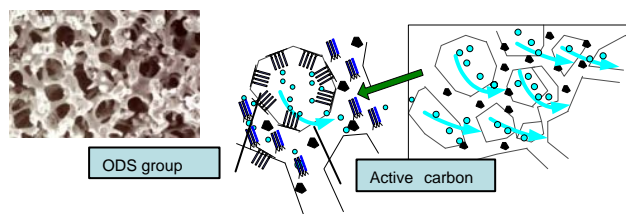
This product is not tough. Do not apply excessive force when handling the product with tweezers or the like. Wear protective glasses when handling the product to protect your eyes from pieces of the product broken during handling.

Substances potentially hazardous to human body (e.g., organic solvents, samples) may be involved when this product is used for solvent extraction or sampling. Be sure to refer to the MSDS in advance and handle the materials in accordance with the instructions given in the MSDS, while having adequate knowledge about their physical properties and toxicity.

### Introduction

MonoTrap™ is a silica-based adsorbent. This product can be characterized by through pore (due to the monolith structure of the silica base) and a large surface (due to the pores within the silica frame). Active carbon is used as an adsorbent on the silica frame surface to which octadecyl (ODS) group has been conjugated.

MonoTrap™ can be viewed as a new hybrid adsorbent having a large surface area and possessing the features of silica gel, active carbon and ODS group.



## 1; Convenient accessories

### 1-1. HS-MT-Sampling Kit (Cat.No.1050-79002)

This kit allows the steps from sampling to extraction (during head space analysis) to be taken without requiring direct touch of the materials with hands. The use of this kit is therefore expected to reduce contamination and to improve reproducibility of analysis.



MT Holder X5



MT Stand X1

MT Extract Cup with Vial X5



### 1-2. 40 mL Vial (transparent, 72 vials/set, a product of I-CHEM) (Cat. No. 1030-32360)

This vial is compatible with the above-mentioned MT Holder and MT Extract Cup with Vial and is recommended for use in combination with these accessories.

### 1-3. 200 $\mu$ L Insert (made of glass, flat bottom) (Cat. No. 1030-17211)

Needed for rod type elution.

### 1-4. Other accessories

Ultrasonic washer: Needed for solvent extraction.

Thermostat stirring tank: Needed for warming and agitating fluid samples.

## 2; Blank test

Because MonoTrap™ has a very high adsorptive potential, it is advisable to determine the blank level under a given environment.

To this end, place MonoTrap™ and solvent for elution (identical to the solvent usually used for analysis and in a volume equal to that used for analysis) into the elution bottle. Seal the bottle and place it into the ultrasonic washer, followed by extraction and measurement.

## 3; Solvents for extraction

Solvents such as dichloromethane, acetone, hexane, methanol, acetonitrile and diethylether may be used. Dichloromethane is recommended for analysis aimed at screening.

<Notes>

For easily adsorbable components such as components with high boiling point and polar components, the type of solvent used is also an important factor determining the yield.

As a rule, a solvent which can dissolve the target sample is selected for extraction.

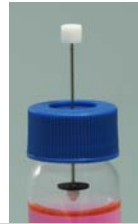
However, in cases of DCC (containing active carbon), better results are likely to be obtained by the use of a solvent with high dissolving capability (e.g., dichloromethane).

The volume of solvent needed is 200  $\mu$ L or more. Adequate washing is possible in about 5 minutes if an ultrasonic washer is used (the time of washing may vary depending on the characteristics of the sample).

## 4;How to use

Step 1: Two methods of sampling are presented.

### <Step 1-1. Head space sampling>



Hold the MonoTrap™ with tweezers (cleaned in advance) and insert it through the reverse side of the septum. Adjust the position (as shown in the left figure), and leave it standing at about 60°C for 20 minutes or more.

If the sample is solid, MonoTrap™ may be directly placed over the sample. In cases of head space analysis of a liquid sample, the yield may be improved by salting out and pH adjustment.

### <Step 1-2. Agitation sampling>

Because MonoTrap™ is water-repellent, it is possible to keep it floating on water (If the sample is warmed and agitated using a thermostat stirring tank, the time needed for arrival at equilibrium may be shortened.)

The method presented below is valid for low-concentration and low-viscosity samples. For high-viscosity liquid samples, it is advisable to perform sampling after dilution with pure water or the like. Leave MonoTrap™ with the sample standing at 60°C and about 90 rpm for 20 minutes or more. Yield may be improved by salting out and pH adjustment, as is the case with head space analysis of liquid samples.



## Step 2: Extraction with solvent

### • head space sampling;

The screw diameter of the 40 mL vial (I-CHEM, Cat. No. 1030-32360) is the same as that of vials for MT Extract Cup. So, place the solvent into the MT Extract Cup and fix it with the screw. Then, wash it in the ultrasonic washer for 5 minutes or more.

### • agitation sampling;

Take out MonoTrap™ from the vial and wipe off moisture with Kim-Wipe or the like. Then, place MonoTrap™ into the MT Extract Cup. Add the solvent and seal the cup, followed by washing in the ultrasonic washer for 5 minutes or more.



## Specifications and Uses

This product is available in two forms: disk type (large cross-section and large acceptable sample amounts) and rod type (elution possible in ordinary vials). Disk type is recommended if the concentration in the sample is expected to be low. Rod type is recommended for quick qualitative analysis of high concentration samples.

Cat.No	Product name	Type	size	Constituent	Functional group	Use
1050-72101	MonoTrap DCC18	Disk	O.D10mmx thick 1mm	Active carbon	C18	Hydorophobic with medium to high b.p.
1050-72201	MonoTrap RCC18	Rod	O.D2.9mmxH5mm	Active carbon	C18	Hydorophobic with medium to high b.p.
1050-71101	MonoTrap DSC18	Disk	O.D10mmx thick 1mm	Silica only	C18	Polar,hydorophobic with low to medium b.p.
1050-71201	MonoTrap RSC18	Rod	O.D2.9mmxH5mm	Silica only	C18	Polar,hydorophobic with low to medium b.p.

## Precautions

- MonoTrap™ has a very high adsorbing potential. Handle it with tweezers (washed well in advance). (Avoid touching the product directly with hands.)
- This product is designed for one-time use. Never re-use it.
- This product is not guaranteed as to the blank level. It is advisable that individual users determine and compare the blank level before use (See the previous page for information about blank level.)
- This product is dispatched for distribution in a form sealed in a glass bottle after the conditioning process. It is advisable that the product is used immediately after it is unpacked. For storage, it is advisable to keep the product (not yet unpacked) refrigerated at 5C. Before unpacking, the product may be stored for about 3 months at maximum.
- Before use, check MonoTrap™ to confirm the absence of break, abnormalities in package, etc. Examples of problems are breaks in the aluminum packages, vials accommodating the product, and so on.

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