

## EXTRACTION NEEDLE FOR COLLECTING VOLATILE ORGANIC COMPOUNDS IN AIR

# NeedlEx

Needle Extraction

### Characteristics

#### ■ Excellent reproducibility and simple operation

Simply connect a NeedlEx needle to an AP-20 or AP-20N aspirating pump and collect a gas sample. Target compounds can be extracted selectively and rapidly.

#### ■ Extended storage possible

Extracted gases can be stored in NeedlEx needles for approximately 10 days by sealing both ends of needles using Teflon plugs.

#### ■ No costly specialized tools required for adsorption and desorption

Gas chromatograph injection port heat is used for the desorption of extracted gases.

#### ■ Reusable

By conditioning for approximately 3 minutes, NeedlEx needles can be reused approximately 25~30 times.



### NeedlEx types

#### ■ Alcohol type

Short chain alcohols including methanol and ethanol, as well as low boiling point compounds such as acetone and acetaldehyde can be concentrated by factors of 50 and greater.

#### ■ Organic solvent type

Organic solvents such as ethyl acetate, isobutyl alcohol, methyl isobutyl ketone, toluene, xylene, styrene, etc.

#### ■ Fatty acid type

Fatty acids such as n-butyric acid, isobutyric acid, isovaleric acid, and propionic acid. (The polymer used in this type is a highly heat-resistant polymer selected for its superior fatty acid adsorption and desorption capabilities.)

#### ■ Trimethylamine type

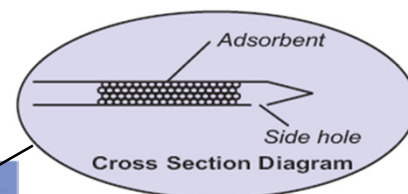
Short chain amines such as trimethylamine.



Connecting to an aspirating pump

### Specifications

Inner diameter : 0.5 mm  
Outer diameter : 0.7 mm  
Length : 85 mm



### Accessories

Name	Q'ty	Notes
Model AP-20 Aspirating Pump	1 set	Sampling volumes are 50 mL and 100 mL.
Model AP-20N Aspirating Pump	1 set	Sampling volumes are 10 mL, 50 mL and 100 mL.
Gas-tight syringe	1 pc	SGE Luer lock type (volume: 1 mL).

Manufactured by:

 **SHINWA CHEMICAL INDUSTRIES LTD.**  
50-2 Kagekatsu-cho,  
Fushimi-ku, Kyoto 612-8307, Japan  
TEL: +81-75-621-2360 FAX: +81-75-602-2660  
URL: <http://shinwa-cpc.co.jp/eng>  
E-mail: [info@shinwa-cpc.co.jp](mailto:info@shinwa-cpc.co.jp)

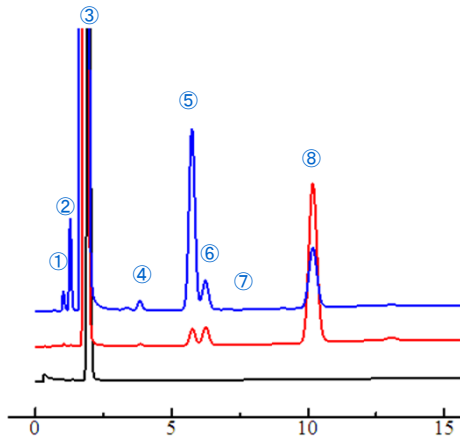
Supplied by:

 **KOMYO RIKAGAKU KOGYO K.K.**  
1-8-28 Shimonoge, Takatsu-ku,  
Kawasaki City, Kanagawa 213-0006, Japan  
TEL: +81-44-833-8911 FAX: +81-44-833-2672  
URL: <http://www.komyokk.co.jp/english/>  
E-mail: [qa@komyokk.co.jp](mailto:qa@komyokk.co.jp)

# APPLICATION CHROMATOGRAMS

## Alcohol type

### Analyses of headspace gas of wine (100 mL sampling)



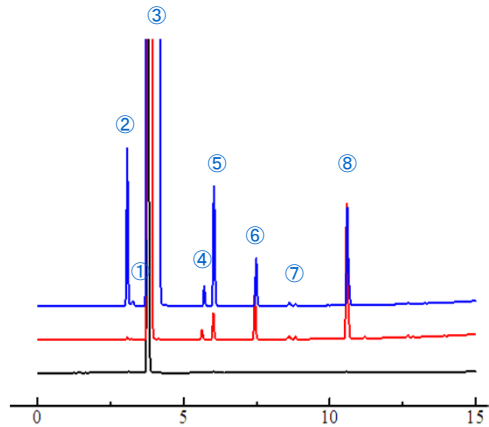
- ① Methanol
- ② Acetaldehyde
- ③ Ethanol
- ④ n-Propanol
- ⑤ Ethyl acetate
- ⑥ Isobutanol
- ⑦ n-Butanol
- ⑧ Isoamyl alcohol

Alcohol type

Organic solvent type

Before extraction

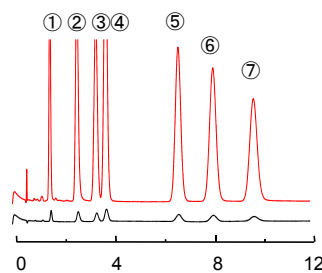
Column: Thermon-1000 5%  
Sunpak-A 50/80 mesh  
2.1 m x 3.2 mm I.D.  
Column temp.: 140°C~200°C  
Program rate: 10°C/min  
Injection: 0.5 mL (250°C)



Column: ULBON HR-1701, 30 m x 0.32 mm I.D., df: 0.25 µm  
Column temp.: 50°C (2 min. hold)~250°C  
Program rate: 10°C/min  
Injection: 0.3 mL (250°C)  
Split ratio: 10:1  
Carrier gas: He 1.7 mL/min

## Organic solvent type

### Organic solvents (20 mL sampling)



- ① Ethyl acetate (4.6 ppm)
- ② Isobutyl alcohol (4.8 ppm)
- ③ Methyl isobutyl ketone (3.6 ppm)
- ④ Toluene (4.2 ppm)
- ⑤ m-Xylene (3.6 ppm)
- ⑥ o-Xylene (3.7 ppm)
- ⑦ Styrene (3.9 ppm)

Desorbed gas

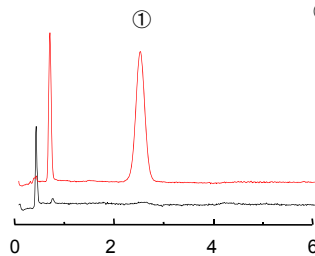
Before extraction

Column: 12% SBS-120  
on SHINCARBON A 80/100  
Glass 3 m x 3 mm I.D.

Column temp.: 120°C  
Injection: 1 mL (200°C)  
Detector: FID (200°C)  
Carrier gas: N<sub>2</sub> 50 mL/min

## Trimethylamine type

### Trimethylamine in headspace gas of dry chicken manure (100 mL sampling)



- ① Trimethylamine (0.3 ppm)

Desorbed gas

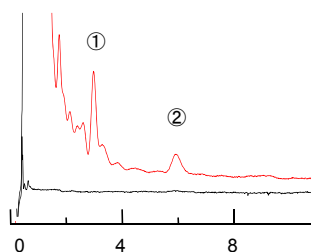
Before extraction

Column: 2+2% Thermon-3000+KOH  
on Sunpak-N 60/100 mesh  
Glass 2.0 m x 3 mm I.D.

Column temp.: 150°C  
Injection: 1 mL (250°C)  
Detector: FID (250°C)  
Carrier gas: N<sub>2</sub> 50 mL/min

## Fatty acid type

### Fatty acids in headspace gas of shoes (300 mL sampling)



- ① Acetic acid (35 ppb)
- ② n-Butyric acid (7 ppb)

Desorbed gas

Before extraction

Column: 5% Thermon-3000  
on SHINCARBON A 60/80  
Glass 1.5 m x 3 mm I.D.

Column temp.: 120°C  
Injection: 1 mL (250°C)  
Detector: FID (250°C)  
Carrier gas: N<sub>2</sub> 60 mL/min



**KITAGAWA**  
**Model AP-20N**  
**Aspirating Pump**

Distributed by:



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Air-Met Scientific Pty Ltd

Air-Met Sales/Service  
P: 1800 000 744  
F: 1800 000 774  
E: sales@airmet.com.au

Air-Met Rental  
P: 1300 137 067  
E: hire@airmet.com.au  
W: www.airmet.com.au