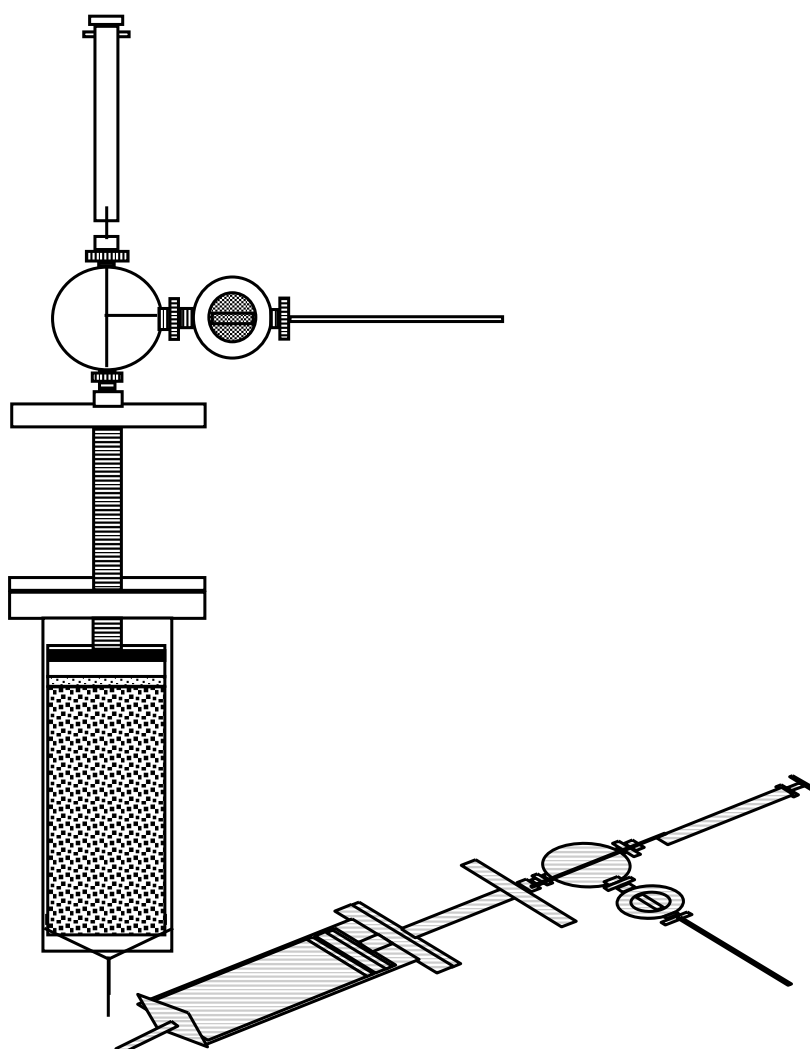


# CHROMATOREX

## Bare Spherical Silica Gels

*For Improved Flash and Industrial Chromatography*

MB70 Silica



# INTRODUCTION

Our "Chromatography Silica Gel" is commonly used in research laboratories and industrial production in many fields such as pharmaceutical and electronic material. We introduce spherical silica gel "**MB 70-40/75**" (Fig.1) and "**MB70-75/200**" (Fig.2) for industrial use. A spherical silica gel has characteristics of easier uniform column packing and superior chromatographic performance in comparison with those of granular silica gel. We developed these new products suit for separation in industrial use through our technology and experience of silica production for a wide area. MB series have properties controlled especially for open column, flash chromatography, and large-scale HPLC.

We believe that **MB70-75/200** and **MB70-40/75** will assist you with your production needs.

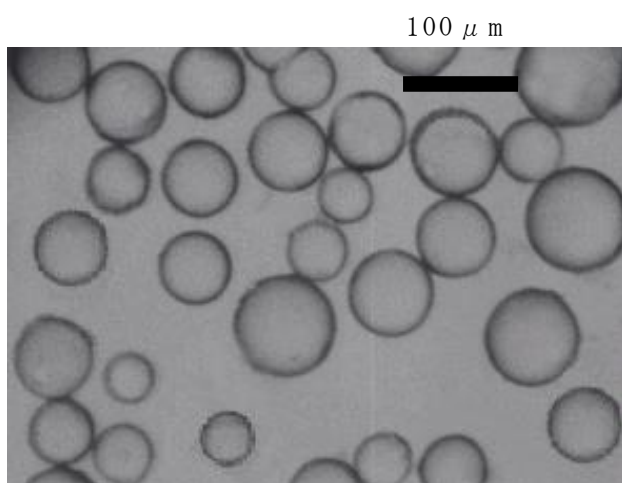


Fig.1 Microphotograph of **MB 70-40/75**

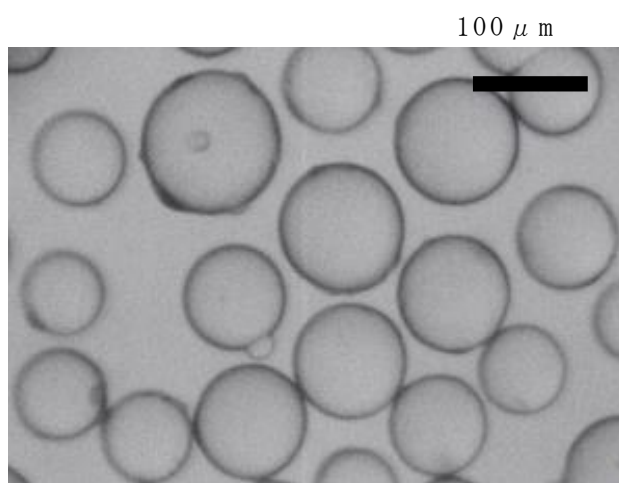


Fig.2 Microphotograph of **MB 70-75/200**

# PHYSICAL PROPERTIES

**MB70-40/75** and **MB70-75/200** are spherical silica gel of average pore diameter 6 nm with controlled particle size distribution precisely. MB series can be used without changing your separation condition because adsorption force and surface activity are controlled as same as conventional our product.

Table1 Typical Physical Properties

Items	<b>MB70-40/75</b>	<b>MB70-75/200</b>
Specific Surface Area $m^2/g$	490	490
Pore Volume ml/g	0.77	0.77
Bulk Density g/ml	0.5	0.5
pH (5% slurry)	7.0	7.0
Average Particle Size $\mu m$	60	110

# COLUMN CHROMATOGRAPHY

**MB70-75/200** is suitable grade for particularly open columns mass processing. Separation examples of column chromatography with **MB70-75/200** and commercial silica gel (granular) of the same particle size are illustrated in figures below. (Fig.3, Fig.4) Spherical silica gel in shape gives you following (1~3) characteristics in chromatographic separations.

1. High theoretical plate number
2. Superior column packing
3. Less peak tailing of each elution

Therefore, high purity refined chemicals can be obtained in even high-load situation.

[Chromatography Conditions]

Column : I.D. 20mm、 Length 1000mm Glass Column

Silica gel : **MB70-75/200** (Spherical), Commercial Silica gel (Granular) 75-200  $\mu$  m (100g each)

Mobile Phase : 20wt% Ethylacetate/n-Hexane (w/w)

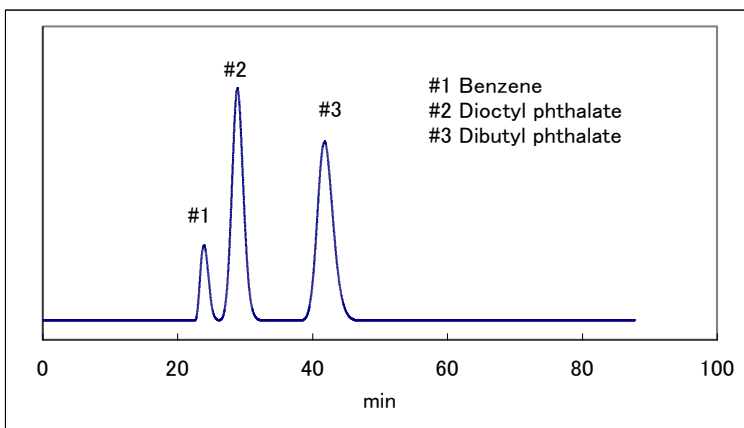
Sample : 1. Benzene

Flow Rate : 2.5cm/min (8ml/min)

2. Dioctyl phthalate

Detector : UV254nm

3. Dibutyl phthalate



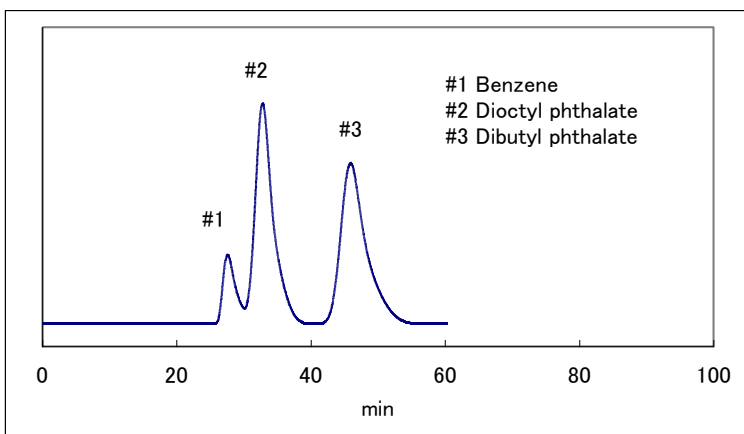
Column Height=648mm

$k'$  DBP=0.75

N DBP=1440

Sym.DBP=1.3

Fig3. Chromatogram of **MB70-75/200** (Spherical)



Column Height =690mm

$k'$  DBP=0.67

N DBP=809

Sym.DBP=1.9

Fig.4 Chromatogram of Commercial Silica gel (Granular)

# FLASH CHROMATOGRAPHY

Separation examples by flash chromatography of MB70-40/75 are shown in figures below.(Fig.5, Fig.6) MB70-40/75 can be packed well in both wet process / dry process, and the column demonstrates high performance in separations.

## Flash Chromatography Conditions:

Mobile Phase : 10wt% Ethylacetate/n-Hexane(w/w) Sample : 1. Benzene

Flow rate : 5cm/min

Detector : UV 254nm

2. Dioctyl phthalate

3. Dibutyl phthalate

4. Dimethyl phthalate

Column : I.D.20mm Glass Column

(Column Height 175mm)

I.D.27mm PP Cartridge Column

(Column Height 108mm)

Silica gel : **MB70-40/75** (25g) **Wet packing**

**MB70-40/75** (30g) **Dry packing**

### Wet Packing

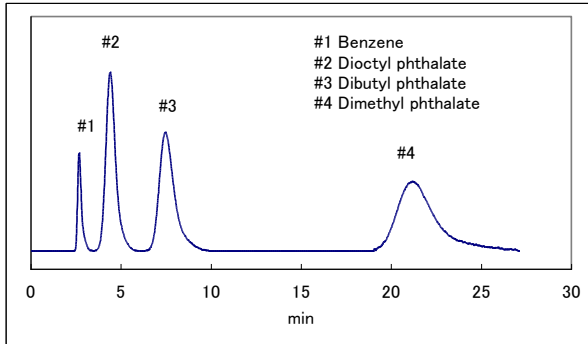


Fig.5 Chromatogram of MB70-40/75

(Wet Packing)

Pressure =0.015MPa

$k'$  DMP =6.90

N DBP =551

### Dry packing

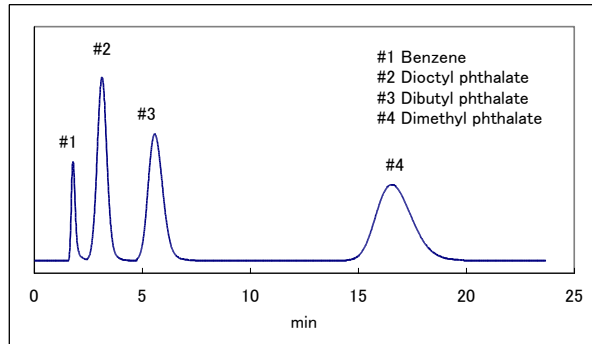


Fig.6 Chromatogram of MB70-40/75

(Dry Packing)

Pressure =0.03MPa

$k'$  DMP =7.50

N DMP =401

## FUJI SILYSIA CHEMICAL LTD.

2-1846 Kozoji-cho,

Kasugai-shi, Aichi-ken,

Japan 487-0013

Phone : +81 568 51 2516

Fax : +81 568 51 8557

E-mail : [chromato-jpn@fuji-silysia.co.jp](mailto:chromato-jpn@fuji-silysia.co.jp)

## FUJI SILYSIA CHEMICAL S.A.

International Chromatography Center

En Budron E9

CH-1052 Le Mont-sur-Lausanne, Switzerland

Phone : +41 21 652 3436

Fax : +41 21 652 4737

E-mail: [fuji.silysia.sa@fuji-silysia.co.jp](mailto:fuji.silysia.sa@fuji-silysia.co.jp)