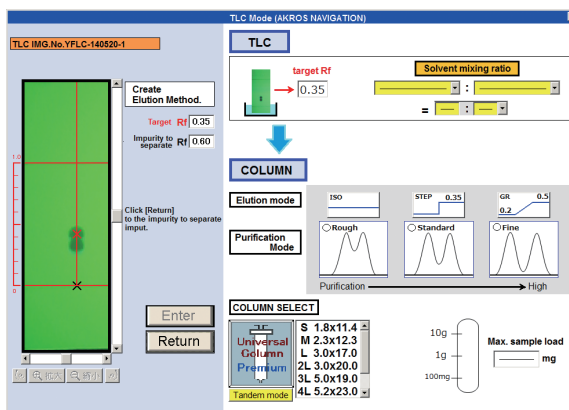


# Innovation of Yamazen's Chromatography Technology

## Streamlined from TLC Scanning to optimized purification



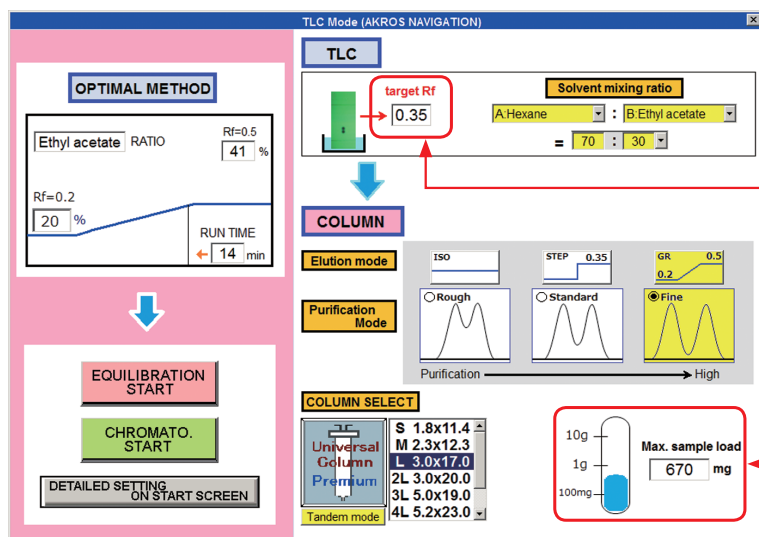
Smart Flash AKROS



**YAMAZEN CORPORATION**

## Perfect Method Transfer from TLC to Column Chromatography

Method navigator will appear on the screen.



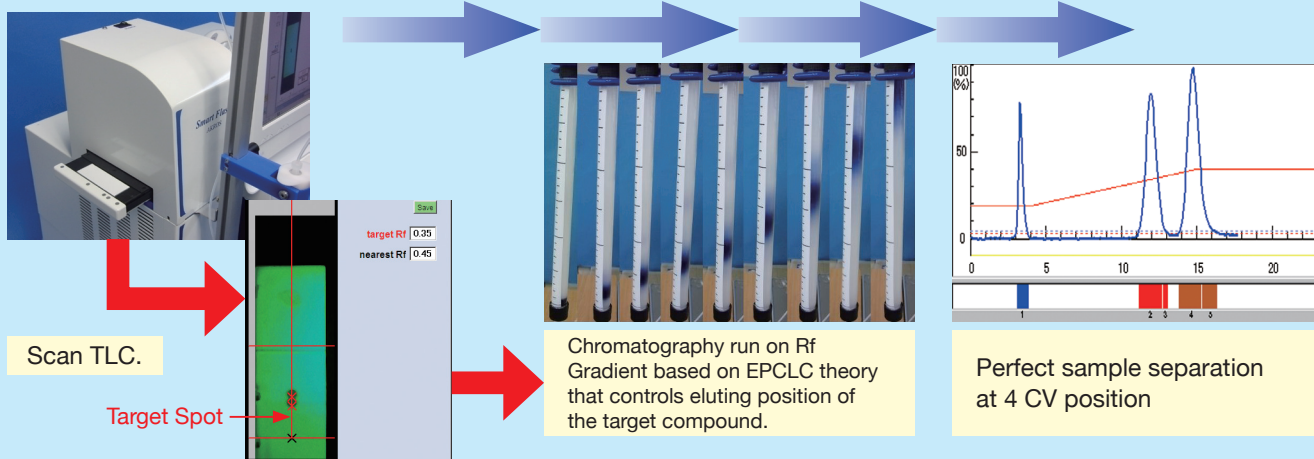
Click target spot to input Rf value.

Max. sample load shown



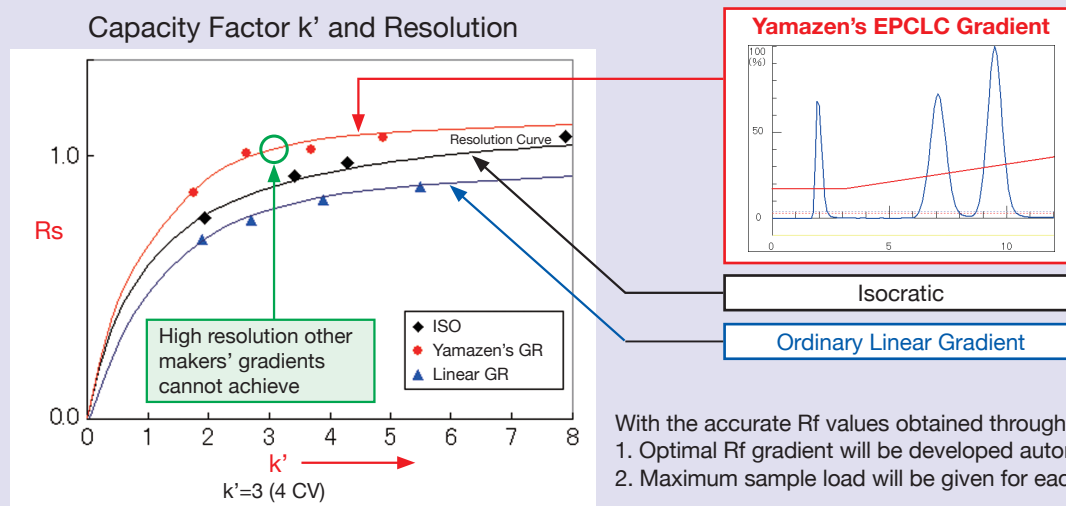
Smart Flash AKROS

## Streamlined from TLC Scanning to Sample Run



Simple clicks on the target and the nearest impurity spot of the TLC will show each Rf value, accurately calculated, and the maximal method will be automatically developed.

## The Highest Resolution In Sample Purification Achieved from the TLC Scanning

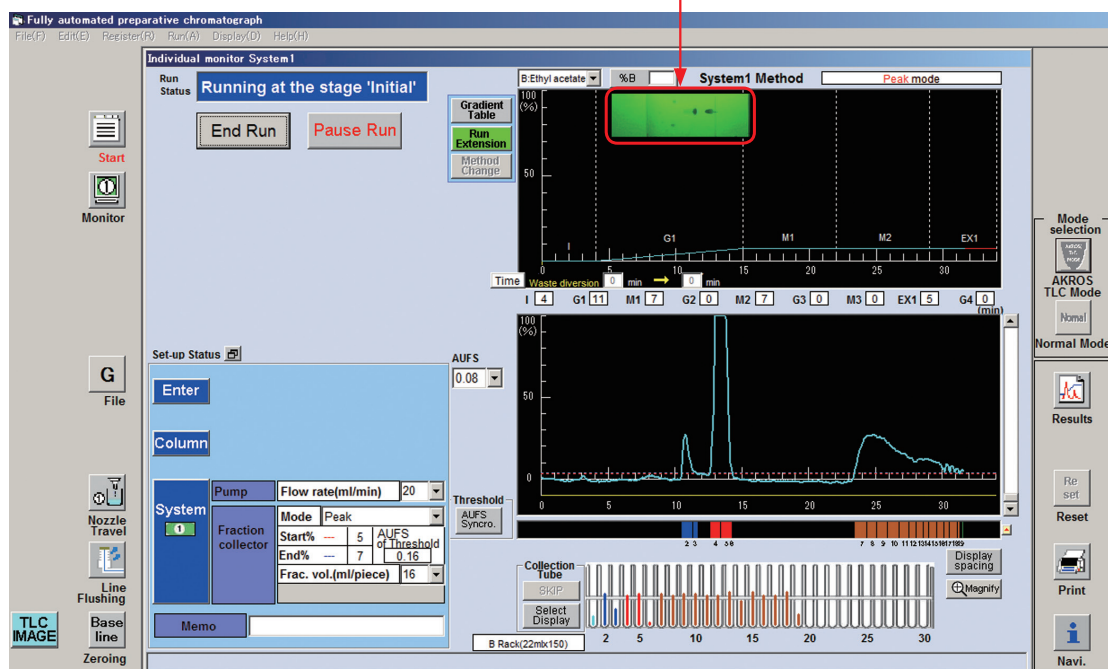


With the accurate Rf values obtained through the TLC spotting;  
1. Optimal Rf gradient will be developed automatically.  
2. Maximum sample load will be given for each column.

## ■ During run, TLC image will show along with the sample peaks.

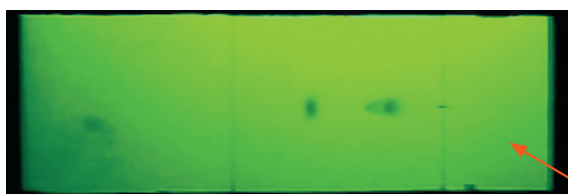
Predicted chromatogram from TLC spots can be compared with the actual chromatogram during run. This will assist chemists to develop the optimal method for the sample purification.

### [Chromatography in process]



## — Highly Sensitive Sample Detection by AKROS —

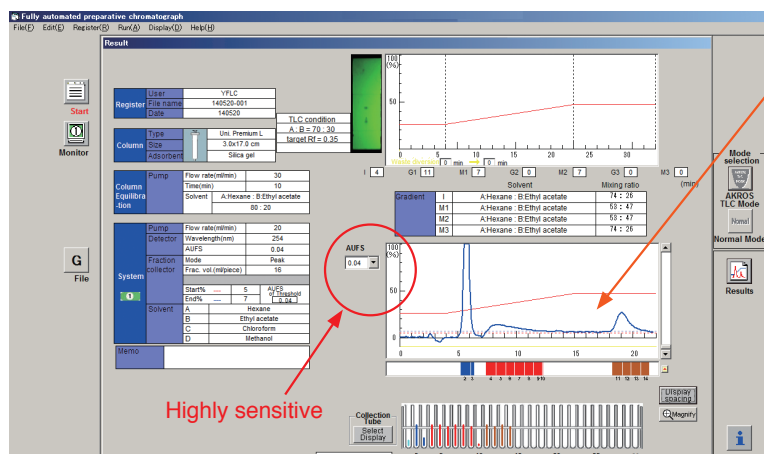
[TLC pattern] Irradiated at 254nm UV



Clear TLC pattern

Diethyl-phthalate/Benzoic acid/  
2-hydroxy ethyl salicylate TLC @254nm

### [Run result]



Correlation of the spots on  
TLC to the sample peaks

Broad detecting UV range, from  
highly sensitive UV to highly  
concentrated UV absorbance

Diethyl-phthalate/Benzoic acid/2-hydroxy ethyl salicylate TLC @254nm

## < Flow Chart on AKROS Mode >

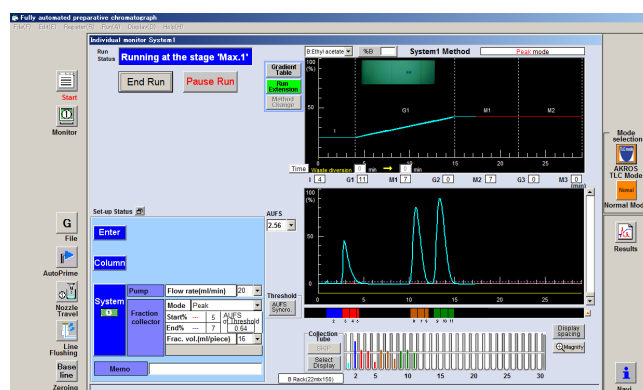
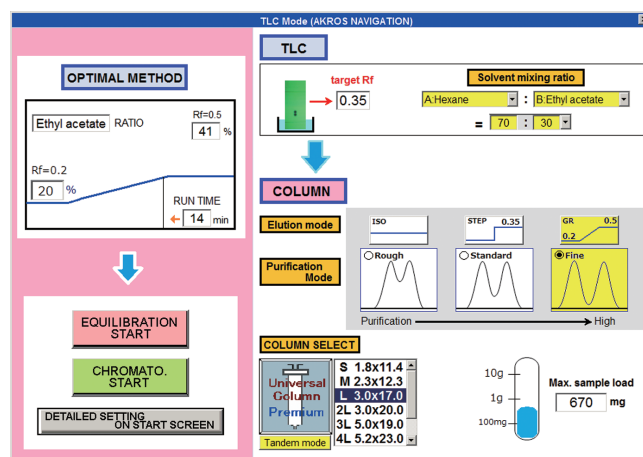
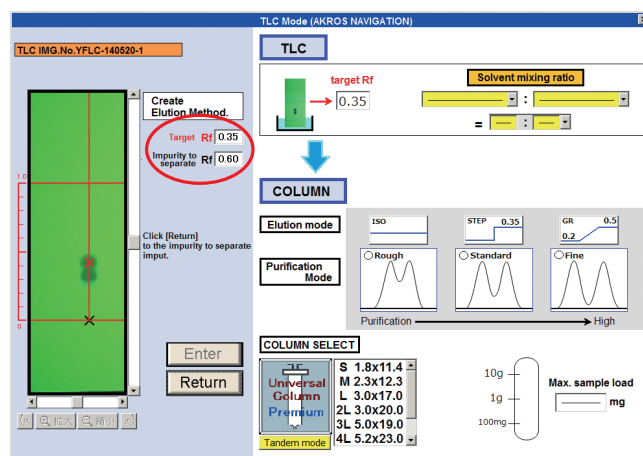
When the spots on TLC image are clicked, Rf values of the target compound and the nearest impurity are calculated by the SW and displayed on the screen.



Maximal method will be developed automatically when TLC solvent mixture ratio, elution mode, purification mode and a column are selected and entered. Maximum sample load for each column will show in the dialogue box.



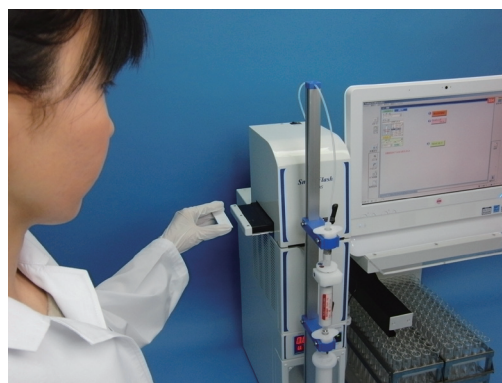
A sample run can be carried out simultaneously, while checking the TLC image shown on the screen. A sample run can start upon completion of column equilibration.





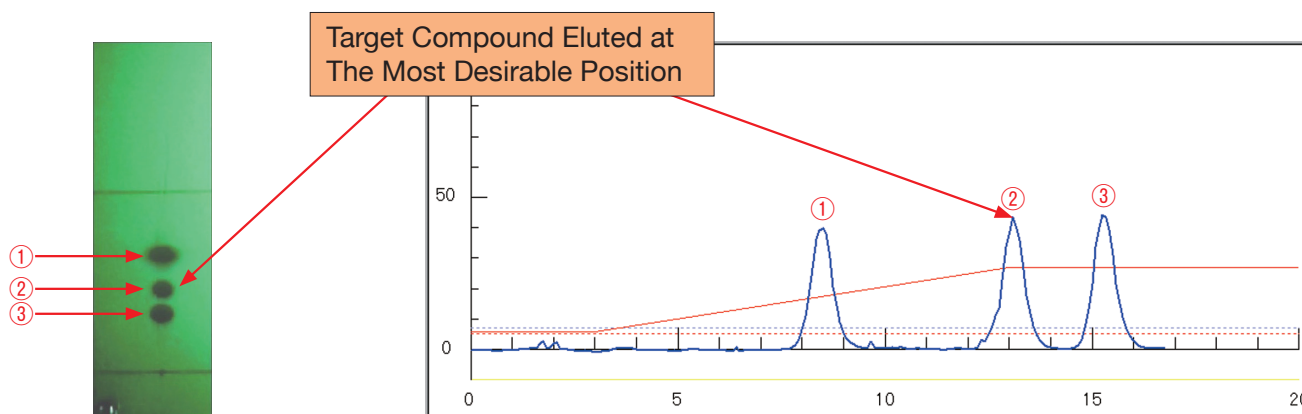
# AKROS (with a built-in TLC Image Reader) Makes It Possible to Compare TLC and Column Chromatography

## ■ Scanned TLC Image Shows Compound Spots Clearly.



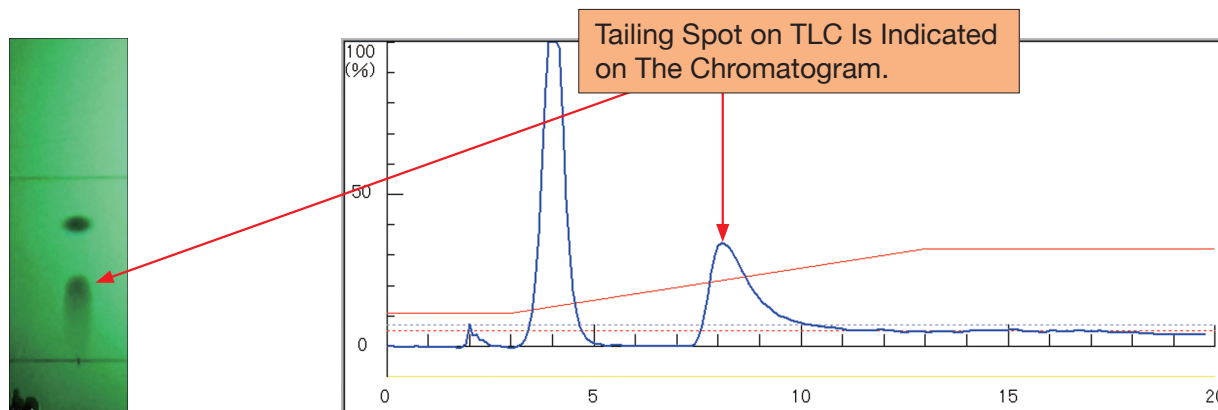
TLC plate irradiated by UV lamp in a dark housing shows compound spots clearly.

## ■ Good Comparison between TLC Image Irradiated by 254nm UV and Column Chromatogram



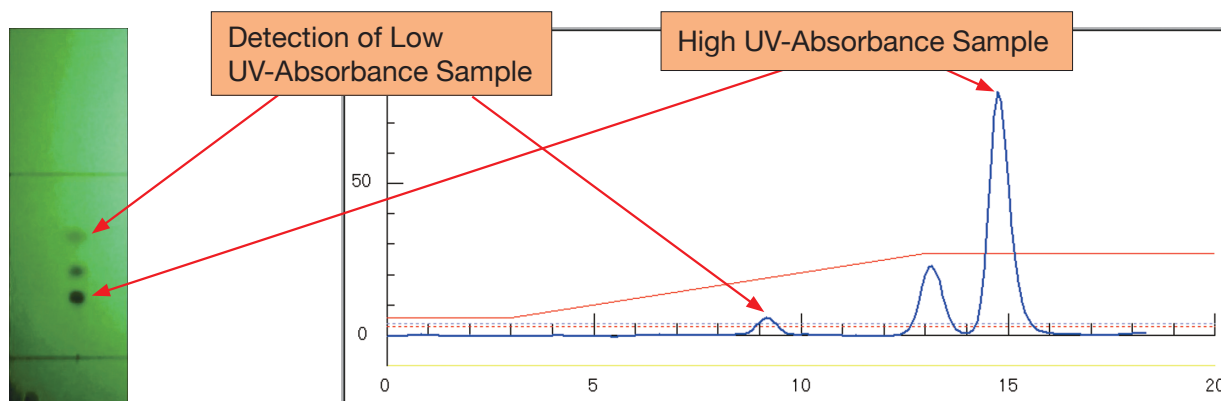
Eluting position is controlled in column chromatography by choosing a target spot on TLC, and sample resolution, by calculating the sample load, both of which are Yamazen's proprietary technologies.

## ■ Streaking of The Compound Spot on TLC Shows as Tailing on The Chromatogram.



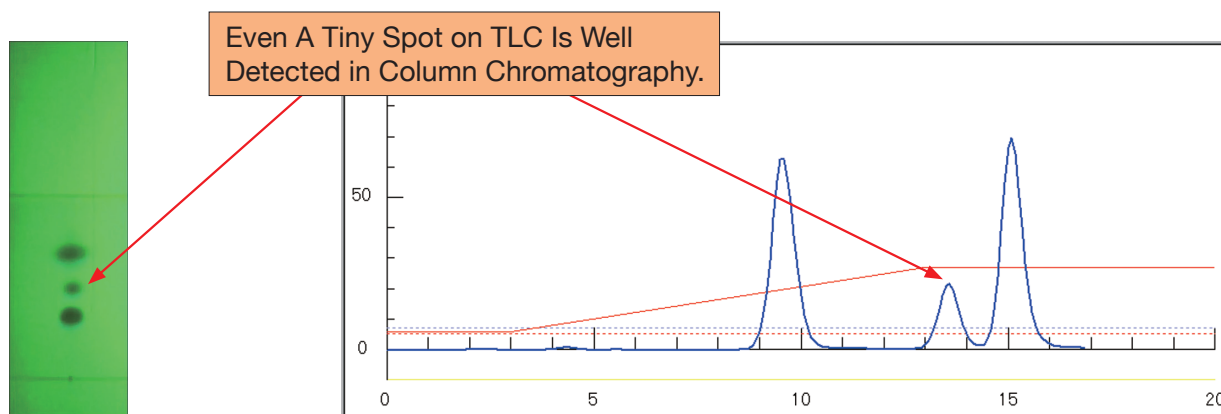
All compound spots including those that tail are clearly indicated on the TLC image. And they can be cross-referenced with the chromatogram.

## ■ Light and Dark Sample Spots on TLC Can Be Cross-referenced with Chromatogram.



Yamazen's highly sensitive UV detectors detect even those compound spots with very low UV-absorbance on TLC.

## ■ Good Correlation between Size of The Spot on TLC and Sample Peak in Column Chromatography

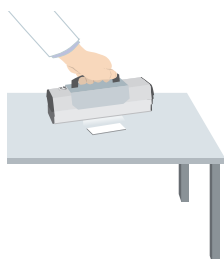


The size of the compound spot on TLC will help find the target peak in column chromatography.

TLC image stored on PC will help make a good comparison with the chromatogram, and enhance its utility.

**AKROS does all these automatically!**

No need to manually irradiate TLC plate with UV



No need of a chemist to analyze TLC for gradient optimization



## System Specifications

Controller	Laptop or Desktop
Application software	<ul style="list-style-type: none"> <li>• Eluting position controllable “Rf Gradient” Method</li> <li>• 4-column volume elution of the target compound minimizes solvent use and waste disposal. Cost is drastically saved and It's Eco-friendly!</li> <li>• Changes method parameters on the fly.</li> <li>• Scale up – Transfer method from one size column to another.</li> </ul>
Ultra slow gradient to apply for high polar solvents	0 - 3% over 30 minutes
Pumping system, Model No.580S	0 - 80ml/min, 1.0Mpa (145psi)
Fixed wavelength UV detector, Model prepUV-254	254nm
Variable wavelength UV detector, Model prepUV-10V	190 - 380nm
UV-VIS detector, Model prepUV/VIS-10V	190 - 600nm
Fraction collector, Model FR-360	A pair of the rack, X-Y driven, fraction modes of Time, Peak, Peak & Slope & Manual Collect
TLC Image Reader	254nm lamp Streamlined from TLC scan to sample run
Floor space (W x D x H) H = height of column stand	50 x 45 x 78cm (19.7x 17.7 x 30.7 inch)
Certifications	JIS and CE
Options	Solvent & waste level monitor, Column air purge

## Specifications of test tube racks

When ordering the rack please specify the Cat. Number.

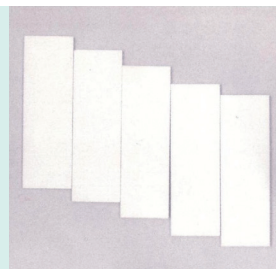
Racks for U.S. standard test tube sizes				Racks for Japanese standard test tube sizes			
Cat No.	Pin Code	Fraction Volume (Default)	Test Tube Sizes (mm)	Cat No.	Pin Code	Fraction Volume (Default)	Test Tube Sizes (mm)
AI13100	A	7ml	13 x 100 x 75 pieces	AI15150	A	15ml	15 x 150 x 75 pieces
AI15125	A	12ml	15 x 125 x 75 pieces	AI18180	B	30ml	18 x 180 x 75 pieces
AI16125	A	15ml	16 x 125 x 75 pieces	AI24180	C	60ml	24 x 180 x 30 pieces
AI16150	A	16ml	16 x 150 x 75 pieces	AI30180	D	90ml	30 x 180 x 27 pieces
AI18150	B	22ml	18 x 150 x 75 pieces	AI30200	D	100ml	30 x 200 x 27 pieces
AI25150	C	45ml	25 x 150 x 30 pieces	AI60180	E	350ml	60 x 180 x 10 pieces
AI25200	C	56ml	25 x 200 x 30 pieces				

System specifications are subject to change without notice.

# Thin Layer Chromatography TLC Plate



20cm × 20cm



2.5cm × 7.5cm

## [A List of Products]

Cat. No.	Product	Size (cm)	Thickness of coated adsorbent (mm)	No. of TLC plates in a package
7574	Silica Gel 60 Si250F With fluorescence indicator	2.5 x 7.5	0.25	100 500
7001		20 x 20	0.25	25
7517	Octadecyl Si-C <sub>18</sub> F With fluorescence indicator	2.5 x 7.5	0.25	50 100
7518	Cyanopropyl Si-(CN)F With fluorescence indicator	2.5 x 7.5	0.25	50 100
7519	Diol Si-(COH) <sub>2</sub> F With fluorescence indicator	2.5 x 7.5	0.25	50 100
7522	Aminopropyl Si-(CH <sub>2</sub> ) <sub>3</sub> NH <sub>2</sub> With fluorescence indicator (Amino for flash chromatography NH <sub>2</sub> 40μm)	2.5 x 7.5	0.25	50 100
7523		20 x 20	0.25	10

Note : 1) Adsorbent is coated on plate glass. 2) Prices will be quoted upon request.

## ■ TLC and Column Chromatography with Amino as Solid Phase

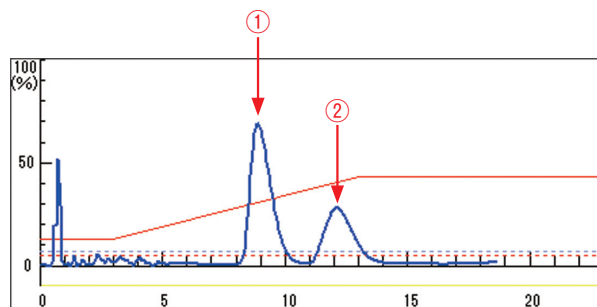
Sample : ① 4-Methylpyridine and ② Lidocaine

TLC : Amino TLC (Yamazen)

Column : Yamazen 30um Amino Universal Premium Column, M-size (16g)

TLC (NH)  
Hex/EA = 8/2

① R<sub>f</sub> = 0.43  
② R<sub>f</sub> = 0.32



## YAMAZEN CORPORATION

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