

TLC Plate Formats

Layer Thickness

Analtech UNIPLATES are 250 microns thick for regular analytical TLC and between 500 and 2000 microns for preparative TLC. Tapered preparative UNIPLATES have a wedge-shaped layer 300 μ m to 1700 μ m with a 700 μ m preadsorbent area (see notes on page 9). High Performance UNIPLATES have a thinner layer of adsorbent between 150-200 microns. All thickness designations are nominal. Actual thicknesses may vary but are consistent from batch to batch.

Plate Size

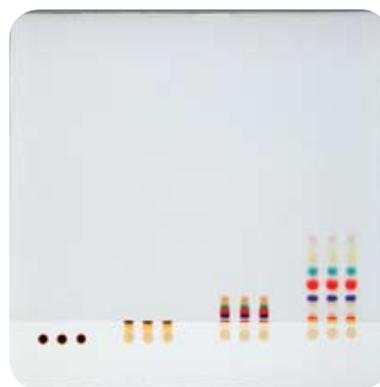
UNIPLATES are available in the following standard sizes: 20 x 20 cm, 10 x 20 cm, 5 x 20 cm as well as 2.5 x 10 cm and 2.5 x 7.5 cm. The standard size for High Performance UNIPLATES (HPTLC) is 10 x 10 cm, although they are available in other sizes. Analtech will be happy to supply your special TLC plate requirements (such as 20 x 40 cm plates) whenever it is within our capability to do so. Please contact Technical Services for information regarding feasibility and pricing.

Call 800-441-7540 or 302-737-6960 (or email techinfo@analtech.com).

Preadsorbent UNIPLATES™

- 3cm wide sample application zone
- Concentrates sample spots on the plate
- Simplifies sample preparation and application
- Channeled version available

Preadsorbent UNIPLATES have an inert spotting zone along the bottom edge of the plate. This sample application region serves as a “holding zone” for sample spots until development of the plate is initiated. There is no significant resolution of sample components by the stationary phase in this region. All soluble components migrate with the solvent front, concentrating diffuse sample spots into vertically narrow bands.



PREDSORBENT PLATE (IN STAGES)

The adsorbent zone extends from the upper edge of the preadsorbent zone and covers the remaining area of the TLC plate. This zone exhibits the selective retention of sample components characteristic of the adsorbent employed. Separation of sample components occurs in the adsorbent zone in the same way as on a standard TLC plate.

Preconcentration of the sample results in compact zones at the beginning of the separation. Also, resolution and sensitivity are less dependent on sample application technique since all samples are concentrated to narrow bands regardless of the size or position in the zone of the sample spots.

Preadsorbent UNIPLATES are available in a variety of adsorbents and sizes throughout the catalog.



Scored UNIPLATES™

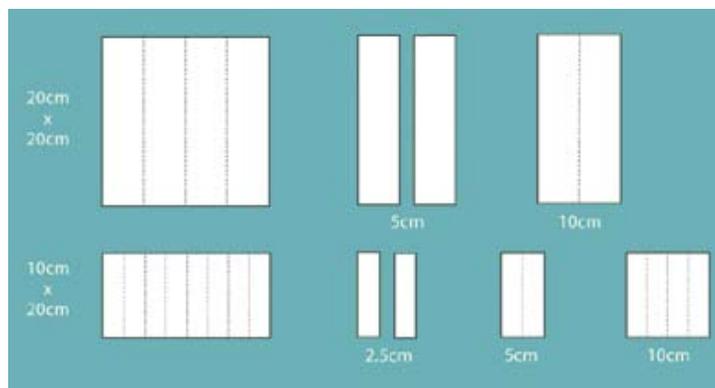
Most UNIPLATES can be supplied with the glass backing scored at specific locations to permit convenient “snapping” into smaller plates. This Analtech feature provides increased versatility and can mean cost savings over plates already cut to smaller sizes.

Different adsorbents, mobile phases, and analytical conditions can be tested quickly and economically. A plate can be spotted, then snapped into several smaller plates for developing in different solvent mixtures to determine the best separation.

A plate can be spotted, developed, then snapped into several smaller plates, and then subjected to different visualization techniques.

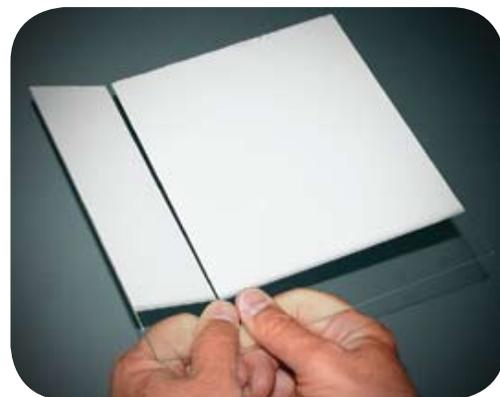
Scored UNIPLATES are available in two standard formats:

- 1) **20 x 20 cm scored** UNIPLATES have three score marks 5 cm apart. Each plate can be snapped to produce four 5 x 20 cm plates or any multiple of 5 cm width.
- 2) **10 x 20 cm scored** UNIPLATES have seven score marks 2.5 cm apart. Each can be snapped to produce eight 2.5 x 10 cm plates or any multiple of 2.5 cm width.

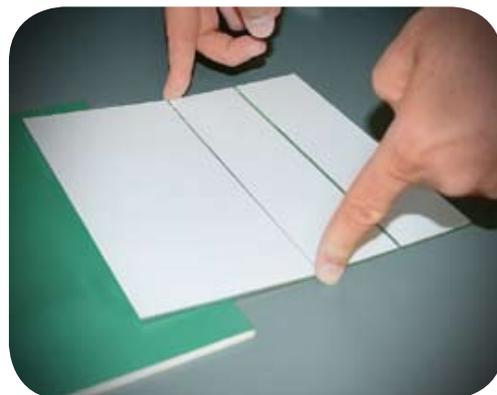


Check out a video demonstration of how to snap an Analtech scored plate at www.analtech.com

- Greater flexibility in developing separations
- Reduced expense
- Provides a useful pilot technique for HPLC
- Can be developed full size



SOFT LAYERED (SCORED)



HARD LAYERED (SCORED)

Channeled UNIPLATES™

Channeled UNIPLATES are available in a variety of adsorbents and plate sizes including the preadsorbent format. These plates have 9 mm wide adsorbent tracks which are separated by 1 mm wide channels where the adsorbent layer has been removed. Channeled plates prevent cross contamination and the spreading of the sample components during development.



Prep-Scored UNIPLATES™

Prep-Scored UNIPLATES are designed especially for preparative TLC procedures where destructive visualization techniques must be used to locate separated zones.

Prep-Scored UNIPLATES are scored 2.5 cm from each vertical edge. After developing, the 2.5 cm strips between each score mark and the edge can be easily “snapped” away from the center portion of the plate.

Visualization of separated zones on these 2.5 cm strips followed by realignment with the center portion provides a convenient method for locating zones to be recovered by scraping.

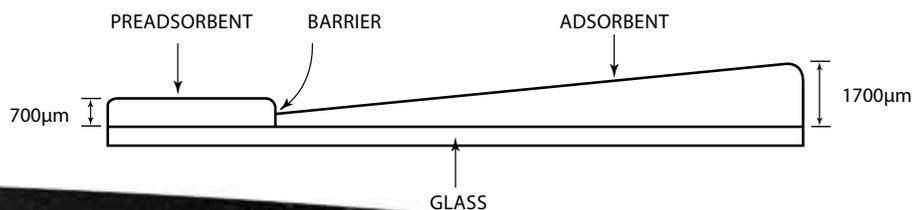


Tapered Uniplate-T™

The UNIPLATE-T Taper Plate, invented and patented by Analtech, is a unique preparative TLC plate that provides unusually high resolution for a preparative layer. It has a wedge-shaped adsorbent layer, progressing from 300 microns (bottom) to 1700 microns (top). Below the silica layer is a 700-micron-thick preadsorbent zone provided for easier sample application and higher sample resolution (see figure below). Sample concentration prior to separation occurs in this preadsorbent zone.

The tapered adsorbent layer causes low R_f bands to separate further than on a preparative plate of constant thickness. A more uniform developing solvent flow pattern reduces vertical band spreading. All of these factors combine to produce extraordinary resolution in preparative separations on the UNIPLATE-T Taper Plate. For additional information regarding the UNIPLATE-T Taper plate visit our Web Site.

Cross sectional view of UNIPLATE-T



Soft Layer Plates

- G & GF layers contain no organic materials
- Soft layers with gypsum binder enable easy scraping of bands from plate
- Fluorescent indicator has green fluorescence at 254 nm

Silica Gel G & GF UNIPLATES™

Silica Gel G & GF UNIPLATES are the most widely used silica gel TLC plates. No organic substances are added to these products, thus making them compatible with sulfuric acid charring visualization.

These plates are commonly scraped from the glass backing to isolate separated components for other analytical procedures. They are compatible with all organic solvents, however, they are not recommended for use in systems containing greater than 20% water because of the solubility of the gypsum binder in aqueous solutions (For water tolerance see the GHL & GHLF series of plates).

The “G” stands for Gypsum and indicates that calcium sulfate hemihydrate ($\text{CaSO}_4 \cdot 1/2\text{H}_2\text{O}$), a refined form of gypsum, has been included in the adsorbent formulation. Gypsum functions as a binder, improving the cohesion of the adsorbent particles and increasing the adhesion of the layer to the glass substrate. The “F” indicates the presence of a short wave UV indicator that is fluorescent at 254 nm.

Preparative TLC plates have adsorbent layers thicker than the 250 microns. Thus, preparative plates can be used for separation of larger quantities of materials. The loading capacity for a given degree of sample component resolution increases roughly as the square root of the adsorbent layer thickness. In preparative TLC, materials to be separated are often applied as long streaks rather than spots. After development, specific compounds may be recovered by scraping the adsorbent layers from the plate in the region of interest and eluting the separated material from the adsorbent using a strong solvent.

In questions of science the authority of a thousand is not worth the humble reasoning of a single individual.

Galileo



Silica Gel G and GF UNIPLATES

25 Plates/Box, 250µm Thickness, 10µm particle, 60Å pore

PLATE SIZE (CM)	SCORED	CHANNELED	PREADSORBENT ZONE	CATALOG NO. SILICA G	CATALOG NO. SILICA GF
20 x 20	–	–	–	01011	02011
20 x 20	Yes	–	–	01511	02511
20 x 20	–	Yes	–	01911	02911
20 x 20	–	–	Yes	31011	32011
20 x 20	Yes	Yes	–	01711	02711
20 x 20	Yes	–	–	01311*	02311*
20 x 20	Yes	–	Yes	31511	32511
20 x 20	–	Yes	Yes	31911	32911
20 x 20	Yes	Yes	Yes	31711	32711
10 x 20	–	–	–	01021	02021
10 x 20	Yes	–	–	01521	02521
10 x 20	–	Yes	–	01921	02921
10 x 20	–	–	Yes	31021	32021
10 x 20	Yes	Yes	–	01721	02721
10 x 20	–	Yes	Yes	31921	32921
5 x 20	–	–	–	01031	02031
5 x 20	–	Yes	–	01931	02931
5 x 20	–	–	Yes	31031	32031

* Specially scored to snap to eight 2.5 x 20 cm plates

Silica Gel G & GF Preparative UNIPLATES™

25 Plates/Box, 10µm particle, 60Å pore

PLATE SIZE (CM)	THICKNESS (MICRONS)	CAT. NO. SILICA G.	CAT. NO. SILICA GF
20 x 20	500	01012	02012
20 x 20	1000	01013	02013
20 x 20	1500	01014	02014
20 x 20	2000	01015	02015
SCORED			
20 x 20	500	01512	02512
CHANNELED			
20 x 20	500	01912	02912
WITH PREADSORBENT ZONE			
20 x 20	500	31012	32012
20 x 20	1000	31013	32013

Silica Gel G & GF Prep-Scored & Tapered

25 Plates/Box, 10µm particle, 60Å pore

PLATE SIZE (CM)	THICKNESS (MICRONS)	CAT. NO. SILICA G.	CAT. NO. SILICA GF
20 x 20	500	01002	02002
20 x 20	1000	01003	02003
20 x 20	1500	01004	02004
20 x 20	2000	01005	02005
TAPERED			
20 x 20	special	80013	81013
TAPERED & PREP-SCORED			
20 x 20	special	80003	81003

A tidy laboratory means a lazy
chemist.

Jöns Jacob Berzelius,
Swedish chemist (1779-1848)

Silica Gel G & GF UNIPLATES™ - ICN Silica Gel

These plates are prepared the same as Analtech Silica Gel G UNIPLATES with calcium sulfate binder, however they contain silica gel supplied by ICN Biomedicals, Inc. They are intended for procedures specifying **Woelm Silica**.

25 Plates/Box, 250 µm Thickness, 15µm particle, 60Å pore

PLATE SIZE (CM)	CAT. NO. SILICA G	CAT. NO. SILICA GF
20 x 20	16011	26011
10 x 20	16021	26021
5 x 20	16031	26031

UNISIL™ Silica Gel G & GF UNIPLATES™

These plates are prepared using a special high purity silica gel with a calcium sulfate binder. UNISIL UNIPLATES offer exceptional discrimination for aflatoxins compared to other adsorbent layers.

25 Plates/Box, 250 µm Thickness, 10µm particle, 60Å pore

PLATE SIZE (CM)	SCORED	CAT. NO. SILICA G	CAT. NO. SILICA GF
20 x 20	-	30011	40011
20 x 20	Yes	30511	40511
10 x 20	-	30021	40021
10 x 20	Yes	30521	40521
5 x 20	-	30031	40031
PLATE SIZE (CM)	THICKNESS	CAT. NO. SILICA G	CAT. NO. SILICA GF
20 x 20	500	10012	20012

Silica Gel H & HF UNIPLATES™ – Binder Free

Silica Gel H & HF UNIPLATES contain no calcium sulfate binder. The adsorbent contains a small amount of colloidal silica which aids in the adherence to the glass plate.

25 Plates/Box 250 µm Thickness, 19µm particle, 60Å pore

PLATE SIZE (CM)	SCORED	CAT. NO. SILICA H	CAT. NO. SILICA HF
20 x 20	-	10011	20011
20 x 20	Yes	10511	20511
10 x 20	-	10021	20021
5 x 20	-	10031	20031
PLATE SIZE (CM)	THICKNESS	CAT. NO. SILICA H	CAT. NO. SILICA HF
20 x 20	500	30012	40012

RPS Reversed Phase Plates

The basis of retention in Reversed Phase Chromatography is just the opposite of that seen in normal phase (e.g., silica gel) chromatography.

In normal phase chromatography the adsorbent is a polar material. Adsorption occurs as a result of polar interactions. Thus, in normal phase chromatography, more polar sample components will be more tightly adsorbed and will exhibit lower Rf values than less polar sample components. Rf values can be increased by making the mobile phase more polar.

In Reversed Phase Chromatography the adsorbent is a relatively nonpolar material. Adsorption occurs as a result of nonpolar interactions. Thus, in Reversed Phase Chromatography less polar sample components will be more tightly adsorbed and will exhibit lower Rf values than more polar sample components. In Reversed Phase Chromatography Rf values can generally be increased by making the mobile phase less polar.

Analtech Reversed Phase Separation (RPS) UNIPLATES are a hydrocarbon impregnated silica gel. The hydrocarbon is adsorbed onto the silica gel surface and is not chemically anchored to the particle. The impregnated RPS UNIPLATE offers several advantages over the bonded RP18 type TLC plates along with some limitations.

The main advantages of the hydrocarbon impregnated Reversed Phase plate are compatibility with aqueous solutions and parallel behavior to most C18 HPLC packings. The RPS UNIPLATE will accept 100% water either as the mobile phase or spotting solvent. This is a great advantage when working with polar sample components such as proteins and peptides.

Reversed Phase UNIPLATES™

(Hydrocarbon Impregnated ≈ 5% carbon load)

25 Plates/Box, 15µm particle, 60Å pore, 250µm Thickness unless otherwise noted

PLATE SIZE (CM)	CAT. NO. RPS	CAT. NO. RPSF
20 x 20	50011	52011
20 x 20 (scored)	50511	52511
10 x 20	50021	52021
10 x 20 (scored)	50521	52521
5 x 20	50031	52031
PREPARATIVE (500µm)		
20 x 20	50012	52012
20 x 20 (scored)	50512	52512
10 x 20	50022	52022
5 x 20	50032	52032
PREPARATIVE (1000µm)		
20 x 20	50013	52013

HYDROCARBON IMPREGNATED

- Less expensive than bonded phase TLC plates
- Aqueous compatibility for polar samples
- Inorganic binder
- Rapid, inexpensive methods development for HPLC
- Expanded flexibility to a wide range of applications

The RPS impregnated UNIPLATE approximates the adsorption characteristics of the bonded C18 modified silica gels. Therefore, RPS Reversed Phase UNIPLATES are an excellent medium for rapid, inexpensive screening of chromatographic conditions in HPLC method development. Mixtures of water or buffers plus a polar organic modifier (eg., Methanol, acetonitrile, THF, etc.) are easily scouted with RPS UNIPLATES. However, since the hydrocarbon is adsorbed but not chemically anchored to the silica gel, the RPS UNIPLATES cannot tolerate nonpolar organic solvents. Ethyl Acetate or less polar organic solvents will strip the hydrocarbon from the silica gel support. (For organic solvent compatible plates see the UNIBOND series of HPTLC plates on page 20.)

Modified Silica Plates

Analtech manufactures a number of modified silica gels on a routine basis. Often the addition of some specific material to the base adsorbent aids in discrimination of particular analytes. The most commonly used modified plates are listed here. Modification can be accomplished

in two ways. The additive material can be dissolved in the solution used to prepare the spreading slurry, or a finished TLC plate can be impregnated with the desired agent. If you have some particular requirement other than those shown, call Analtech for prices and delivery.

Sodium Hydroxide (0.1N) Modified Silica Gel G & GF UNIPLATES™

Instead of water, 0.1 N sodium hydroxide is used to prepare the slurry for these plates. This makes the plates more basic and contributes to improved separation of certain compounds, particularly organometallics and some acidic classes.

25 Plates/Box, 250µm Thickness, 10µm particle, 60Å pore

PLATE SIZE (CM)	CATALOG G	NUMBER GF
20 x 20	68011	69011
10 x 20	68021	69021
5 x 20	68031	69031

Carbomer (0.33%) Modified Silica Gel H UNIPLATES™

These very specialized plates are prepared according to several Pharmacopoeia methods. They are used in the analysis of mannitol/sorbitol.

NOTE: These plates are very fragile and will most definitely arrive with silica flaked off of the plate. This has always been the case with these very custom TLC plates. This warning is given because these plates are not returnable.

25 Plates/Box, 750µm Thickness, 20x20 cm, 19µm particle, 60Å pore

Catalog #70019

Silver Nitrate Impregnated (%) Silica Gel UNIPLATES™ (for Argentation Chromatography)

These UNIPLATES are impregnated with between 5% and 20% silver nitrate which modifies the separation characteristics of the adsorbent layer to permit increased discrimination of certain compounds, particularly those containing carbon-carbon double bonds. They are available with or without a fluorescent indicator.

NOTE: The concentration of silver nitrate (5, 10, 15 or 20%) must be specified at the time of order.

25 Plates/Box, 10µm, 60Å pore, 250µm Thickness unless noted

PLATE SIZE (CM)	CATALOG NO. W/O F	CATALOG NO. W/ F
20 x 20	28011	29011
10 x 20	28021	29021
5 x 20	28031	29031
PREPARATIVE (500µm)		
20 x 20	28012	29012
PREPARATIVE (1000µm)		
20 x 20	28013	29013

Magnesium Acetate (%) Modified Silica Gel H & HF UNIPLATES™

These Silica Gel H UNIPLATES are prepared with 5%, 7.5%, or 10% magnesium acetate as the slurry liquid. The addition of magnesium acetate decreases the acidity of the layer and allows increased discrimination of phospholipids. The concentration of magnesium acetate added to the layer must be specified at the time of order (7.5% is most commonly used)

25 Plates/Box, 19µm, 60Å pore, 250µm Thickness unless noted

PLATE SIZE (CM)	CATALOG NO. H	CATALOG NO. HF
20 x 20	88011	89011
10 x 20	88021	89021
5 x 20	88031	89031
PREPARATIVE (500µm)		
20 x 20	88012	89012

Potassium Oxalate (1%) Modified Silica Gel H & HF UNIPLATES™

Prepared with 1% potassium oxalate during slurry preparation, these plates acquire a separation characteristic which aids in the discrimination of polyphosphoinositides.

25 Plates/Box, 250µm Thickness 19µm particle, 60Å pore

PLATE SIZE (CM)	CATALOG NO. H	CATALOG NO. HF
20 x 20	86011	87011
10 x 20	86021	87021
5 x 20	86031	87031

Ammonium Sulfate (5%) Modified Silica Gel H & HF UNIPLATES™ (Self-Charring)

A common method for visualizing organic compounds on a silica gel TLC plate is charring. This is usually accomplished by spraying the plate with dilute sulfuric acid followed by heating. Organic substances appear as brown to black spots against a white background. This method is comparable in sensitivity to the visualization of UV-absorbing compounds against a fluorescent background.

Silica Gel H UNIPLATES containing ammonium sulfate eliminate the need to use messy sulfuric acid for charring. Just evaporate the developing solvent until the plate is completely dry, then heat at 150°-200°C for 30 to 60 minutes to achieve charring. The Analtech VPF chamber is specifically designed for this application. Other percentages of ammonium sulfate may be specified.

25 Plates/Box, 250µm Thickness, 19µm particle, 60Å pore

PLATE SIZE (CM)	CATALOG NO. H	CATALOG NO. HF
20 x 20	74011	75011
10 x 20	74021	75021
5 x 20	74031	75031

Hard Layer Plates

- High performance silica gel provides faster separations, higher resolution, and improved sensitivity.
- Enhanced abrasion resistance offers easier handling.
- Harder surface simplifies sample application.
- Hard layer surface is easily written on.
- Compatible with organic solvents
- Faster development compared to silica gel 60
- Fluorescent plates are ideal for UV shadowing

Research is what I'm doing when I don't know what I'm doing.

Wernher Von Braun

Hard Layer Silica Gel HL & HLF UNIPLATES™ (Organic Binder)

These are the most rugged silica gel plates available. They not only ease handling and sample application, but also permit the use of up to 80% water in the developing solvent without loss of adherence of the adsorbent layer to the glass plate. Organic binder plates are recommended for all TLC applications except those that use vigorous charring for visualization. Virtually all other visualization methods are free from interference from the organic binder.

Hard Layer Silica Gel UNIPLATES represent an advancement in thin layer adsorbent technology. Special high performance silica gel with small average diameter and narrow particle size distribution results in separations 25% to 30% faster than with most other TLC plates. Separated spots are more compact and better resolved, which allows visualization at lower sample levels. The enhanced abrasion resistance means easier handling and sample application because plate surface gouging is virtually eliminated. Analtech Hard Layer UNIPLATES are available with either organic or inorganic binders. Binder choice has little effect on the adsorptive properties of the adsorbent layer.

Hard Layer Silica Gel HL & HLF UNIPLATES™

25 PLATES/BOX, 250 µm THICKNESS, 10µm PARTICLE, 60Å PORE

PLATE SIZE (CM)	SCORED	CHANNELED	PREADSORBENT ZONE	CAT. NO. HL	CAT. NO. HLF
20 x 20	–	–	–	46011	47011
20 x 20	Yes	–	–	46511	47511
20 x 20	–	Yes	–	46911	47911
20 x 20	–	–	Yes	43011	44011
20 x 20	Yes	Yes	–	46711	47711
20 x 20	Yes	–	–	46311*	47311*
20 x 20	Yes	–	Yes	43511	44511
20 x 20	Yes	–	Yes	43511*	44311*
20 x 20	–	Yes	Yes	43911	44911
20 x 20	Yes	Yes	Yes	43711	44711
10 x 20	–	–	–	46021	47021
10 x 20	Yes	–	–	46521	47521
10 x 20	–	Yes	–	46921	47921
10 x 20	–	–	Yes	43021	44021
10 x 20	–	Yes	Yes	43921	44921
5 x 20	–	–	–	46031	47031
5 x 20	–	Yes	–	46931	47931
5 x 20	–	–	Yes	43031	44031

* Specially scored to snap to eight 2.5 x 20 cm plates

Hard Layer Silica Gel GHL & GHLF UNIPLATES™ (Inorganic Binder)

These plates are 100% H₂O resistant and are compatible with aqueous developing solvents. They are less rugged than the plates with organic binder but still provide improved handling and sample application compared to Silica Gel G UNIPLATES and are tough enough to write on with a soft pencil, if required.

Hard Layer UNIPLATES with inorganic binder are recommended for all applications including those where visualization occurs through strong charring procedures or in any case in which reagent interaction with an organic binder occurs.

Hard Layer Silica Gel GHL & GHLF UNIPLATES

25 PLATES/BOX, 250 µm THICKNESS, 15µm PARTICLE, 60Å PORE

PLATE SIZE (CM)	SCORED	CHANNELED	PREAD-SORBENT ZONE	CAT. NO. GHL	CAT. NO. GHLF
20 x 20	–	–	–	11011	21011
20 x 20	Yes	–	–	11511	21511
20 x 20	–	Yes	–	11911	21911
20 x 20	–	–	Yes	41011	42011
20 x 20	Yes	Yes	–	11711	21711
20 x 20	Yes	–	–	11311*	21311*
20 x 20	Yes	–	Yes	41511	42511
20 x 20	Yes	–	Yes	41311*	42311*
20 x 20	–	Yes	Yes	41911	42911
20 x 20	Yes	Yes	Yes	41711	42711
10 x 20	–	–	–	11021	21021
10 x 20	Yes	–	–	11521	21521
10 x 20	–	Yes	–	11921	21921
10 x 20	–	–	Yes	41021	42021
10 x 20	–	Yes	Yes	41921	42921
5 x 20	–	–	–	11031	21031
5 x 20	–	Yes	–	11931	21931
5 x 20	–	–	Yes	41031	42031

* Specially scored to snap to eight 2.5 x 20 cm plates

- Layers tolerate 100% water.
- Contains no organic materials.
- Suitable for aggressive visualization procedures.
- Standard scoring for 20 x 20 cm plates yields four 5 x 20 cm plates.
- Channeled 20 x 20 cm plates have 19 channels (see channeled adapter for TLC Autospotter (page 32)
- One box of scored 10 x 20 cm plates yields two hundred 2.5 x 10 cm plates.

Non-Silica Plates

25 Plates/Box, 250µm Thickness unless noted
 Nearly spherical particle shape, 50 µm mean diameter

PLATE SIZE (CM)	CAT. NO. AVICEL	CAT. NO. AVICEL F
20 x 20	05011	06011
10 x 20	05021	06021
5 x 20	05031	06031
SCORED		
20 x 20	05511	06511
10 x 20	05521	06521
PREPARATIVE (500µm)		
20 x 20	05012	06012
10 x 20	05022	06022
PREPARATIVE (1000µm)		
20 x 20	05013	06013
10 x 20	05023	06023

25 Plates/Box, 250µm Thickness unless noted

PLATE SIZE (CM)	CATALOG NO. G	CATALOG NO. GF
20 x 20	03011	04011
10 x 20	03021	04021
5 x 20	03031	04031
PREPARATIVE (1000µm)		
20 x 20	03511	04511
10 x 20	03521	04521
PREPARATIVE (500µm)		
20 x 20	03012	04012
10 x 20	03022	04022
PREPARATIVE (1000µm)		
20 x 20	03013	04013
10 x 20	03023	04023

Avicel® UNIPLATES™ (Microcrystalline Cellulose)

These plates are coated with AVICEL microcrystalline cellulose manufactured by the American Viscose division of FMC Corp. The adsorbent consists of regenerated alpha cellulose particles of nearly spherical shape and 50 micron mean diameter. Compounds separated on this cellulose tend to form more compact spots than on fibrous cellulose layers.

Alumina G & GF UNIPLATES™

Using a slurry containing calcium sulfate hemihydrate as a binder, these plates are analogous to Silica Gel G UNIPLATES, but with aluminum oxide as the adsorbent. The pH is neutral to slightly basic. Coatings are available in both analytical and preparative thicknesses.

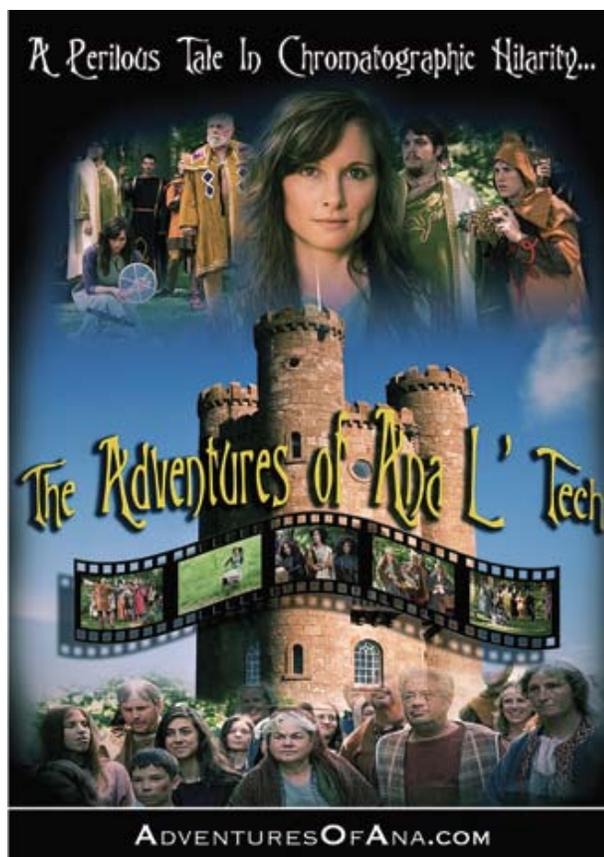
DEAE Avicel Cellulose UNIPLATES™

Diethylaminoethyl (DEAE) Cellulose carries positive charges at neutral and acidic pH. Commonly employed for separation of negatively charged molecules by ion exchange chromatography. Hydrophilic nature of the cellulose substrate makes it well suited to ion exchange separations of delicate biomolecules. Plates are available with mixed layers containing both DEAE Cellulose and unmodified cellulose. Mixed-layer plates have lower ion exchange capacity and may be expected to provide higher chromatographic mobility for negatively charged molecules.

NOTE: HR plates contain a highly refined (HR) cellulose.

25 Plates/Box, 250µm Thickness

PLATE SIZE (CM) DEAE CELLULOSE	CAT. NO. AVICEL	CAT. NO. AVICEL F
20 x 20	36011A	36011AF
10 x 20	36021A	36021AF
5 x 20	36031A	36031AF
9:1 AVICEL:DEAE CELLULOSE		
20 x 20	37011A	37011AF
10 x 20	37021A	37021AF
5 x 20	37031A	37031AF
7.5:1 AVICEL:DEAE CELLULOSE		
20 x 20	38011A	38011AF
10 x 20	38021A	38021AF
5 x 20	38031A	38031AF
15:2 HR CELLULOSE:DEAE CELLULOSE		
20 x 20	39011	39011F
10 x 20	39021	39021F
5 x 20	39031	39031F



High Performance Plates

Normal Phase

High Performance UNIPLATES provide high resolution separations in less than five minutes with migration distances as little as 5 to 7 cm. These plates are prepared with high efficiency silica gel having an 8 micron average particle diameter and narrow particle size distribution. The adsorbent layers are only 150 microns thick, resulting in more rapid solvent migration. The adsorbent capacity is more than adequate for small samples used in high performance TLC techniques. Typically, sample volumes for high performance TLC are less than one microliter. Sample spots are normally smaller than one millimeter in diameter. Samples are spotted 1.0 to 1.5 cm from the bottom edge of the plate and 0.3 to 0.5 cm apart. Since smaller samples are applied, one 10 x 10 cm plate can separate as many samples as can be separated on a 20 x 20 cm plate using standard TLC techniques.

The smooth homogeneous surface of HPTLC UNIPLATES gives high signal-to-noise ratios for densitometric scanning, thus increasing sensitivity and precision.

Silica Gel HPTLC UNIPLATES™ (Organic Binder)

25 Plates/Box, 150 µm Thickness, 8µm particle, 60Å pore

PLATE SIZE (CM)	CAT. NO. HP-HL	CAT. NO. HP-HLF
10 x 10	58077	59077
10 x 20	58027	59027
20 x 20	58017	59017
SCORED		
10 x 10 (to 5 x 5)	58377	59377
10 x 20	58527	59527
PREADSORBENT		
10 x 10	60077	61077
10 x 20 (low-form)*	60027	61027
20 x 10 (high-form)*	60127	61127
20 x 20	60017	61017

*The preadsorbent zone on HPTLC UNIPLATES is 1.5 cm high. Low-form plates have the preadsorbent zone along the 20 cm edge. High-form plates have the preadsorbent zone along the 10 cm edge.

- High efficiency 8 micron (ave) adsorbent with narrow particle and pore size distribution
- 150 micron adsorbent layer thickness for fast separations
- Homogeneous layer allows linear or radial separations
- Smooth adsorbent surface for noise free densitometry

Silica Gel HPTLC UNIPLATES (Inorganic Binder)

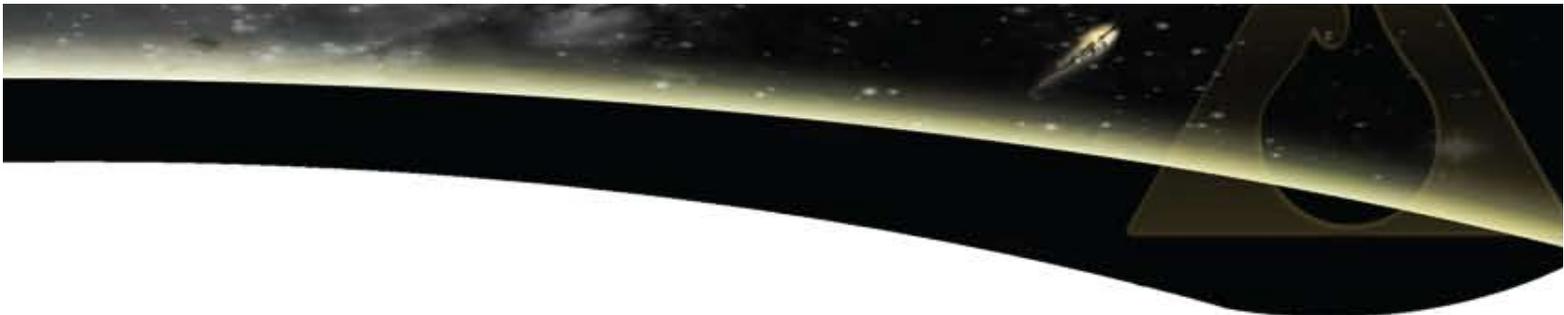
25 Plates/Box, 150 µm Thickness, 8µm particle, 60Å pore

PLATE SIZE (CM)	CAT. NO. HP-GHL	CAT. NO. HP-GHLF
10 x 10	56077	57077
10 x 20	56027	57027
20 x 20	56017	57017
SCORED		
10 x 10 (to 5 x 5)	56377	57377
10 x 20	56527	57527

Unibond™ Amino (NH₂) & Cyano (CN) HPTLC UNIPLATES™

25 Plates/Box, 150 µm Thickness, 8µm particle, 60Å pore

PLATE SIZE (CM)	CAT. NO. HP-NH2F	CAT. NO. HP-CNF
10 x 10	22077	23077
10 x 20	22027	23027
20 x 20	22017	23017
SCORED		
10 X 20	22527	23527



REVERSED PHASE

The availability of both normal phase and Reversed Phase HPTLC UNIPLATES™ completes HPTLC as a sensible, efficient and cost effective alternative technique for quantitative analysis. These Reversed Phase adsorbents share the features and benefits of silica gel HPTLC plates: high efficiency adsorbents, 150 µm layer thickness, and smooth surface for densitometry.

In the High Performance format, Analtech offers several varieties of supports. A hydrocarbon impregnated layer, similar to the analytical RPS UNIPLATE, offers

complete aqueous solvent compatibility (see page 11 for complete details). Three nonpolar bonded supports in the UNIBOND™ series are available: RP2, RP8, and RP18.

These fully silanized silica gels share complete compatibility with all organic solvents. However, due to the extreme hydrophobic nature of the RP18 adsorbent, aqueous wettability is limited to approximately 60% water in the mobile phase. Wettability is correspondingly higher with the slightly more polar shorter chain RP series plates.

Reversed Phase Unibond™ Series HPTLC UNIPLATES

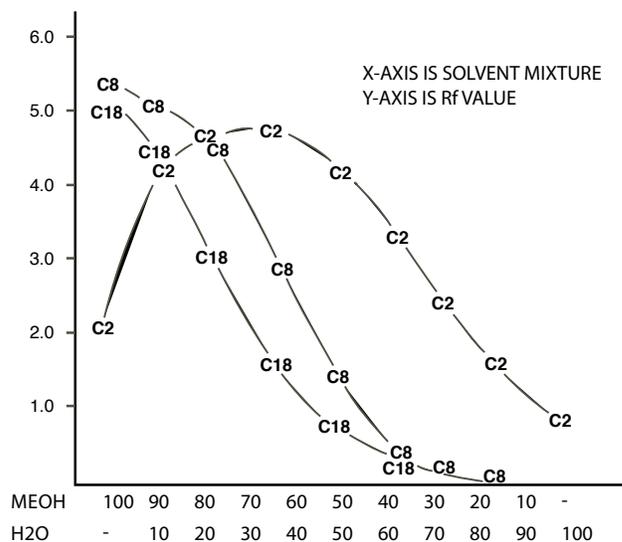
25 Plates/Box, 150µm Thickness (Organic binder)

DESCRIPTION	PLATE SIZE	CAT. NO.
HP-RP18	10 x 10	62077
HP-RP18F	10 x 10	63077
HP-RP8F	10 x 10	09077
HP-RP2F	10 x 10	08077
HP-RP18	10 x 20	62027
HP-RP18F	10 x 20	63027
HP-RP8F	10 x 20	09027
HP-RP2F	10 x 20	08027
HP-RP18	20 x 20	62017
HP-RP18F	20 x 20	63017
HP-RP8F	20 x 20	09017
HP-RP	20 x 20	08017

Reversed Phase Hydrocarbon Impregnated HPTLC UNIPLATES

25 Plates/Box, 150µm Thickness 8µm particle, 60Å pore (≈5% carbon load, Inorganic binder)

PLATE SIZE (CM)	CAT. NO. HP-RPS	CAT. NO. HP-RPSF
10 x 10	54077	55077
10 x 20	54027	55027



Selectivity can be varied for a given sample by choosing a UNIBOND Reversed Phase HPTLC plate of proper nonpolarity. The graph above illustrates Rf values for Rhodamine B, a polar dyestuff, in mixtures of methanol & water for RP2, RP8, and RP18.



Flexible-backed TLC Sheets



- Lighter and safer to handle than glass; also unbreakable
- Easy to cut with scissors to customize plate size or isolate components
- Available with Polyester or Aluminum backing
- Attach to reports for permanent record
- Minimum storage space required
- Inexpensive shipping due to weight

Flexible Backed TLC Sheets (Plastic & Aluminum Backings)

Analtech's flexible backed TLC plates offer the same exacting specifications as with the classic glass backed plates assuring batch-to-batch uniformity. Quality is controlled at each step in the manufacturing process – from incoming raw materials to outgoing packaging.

Comparison of flexible backings to glass

PHYSICAL PROPERTY	GLASS	PLASTIC	ALUMINUM
Thickness (approx)	1.6 mm	0.2 mm	0.15 mm
Weight (packaging, storage requirements)	high	low	low
Torsional strength	ideal	low	relatively high
Temperature stability	high	max. 185°C	high
Susceptible to breakage	yes	no	no
Can be cut with scissors	no	yes	yes
CHEMICAL RESISTANCE			
Against solvents	high	high	high
Against mineral acids and conc. ammonia	high	high	low
Binder stability in water	depends	very	limited

Flexible-backed TLC Sheets

ADSORBENT LAYER	PLATE SIZE (CM)	PLATE BACKING	THICKNESS (MICRONS)	# SHEETS	CAT. NO. W/O F	CAT. NO. W/ F
Silica Gel	20 x 20	plastic	200	25	158017	159017
Silica Gel	2.5 x 7.5	plastic	200	200	158061	159061
Silica Gel	20 x 20	aluminum	200	25	156017	157017
Silica Gel	2.5 x 7.5	aluminum	200	200	156061	157061
Silica Gel HR *	20x 20	plastic	200	25	154017	155017
Diol Modified Silica Gel	20 x 20	aluminum	150	25	-	125017
Microcrystalline Cellulose	20 x 20	plastic	100	25	105016	106016
Microcrystalline Cellulose PEI	20 x 20	plastic	100	25	205016	206016
Cellulose (fibrous)	20 x 20	plastic	100	25	166016	167016
Aluminum Oxide, pH9	20 x 20	plastic	200	25	100016	101016
Aluminum Oxide, pH9	20 x 20	aluminum	200	25	102016	103016
Polyamide	20 x 20	plastic	100	25	117058	118058
Reversed Phase RP18	20 x 20	aluminum	150	25	-	350016

* Silica Gel HR is made with a higher purity silica gel and a different binder system than the regular silica plates use.

Other Coatings Available on Flexible Backings

Not all coatings or TLC sheet sizes are listed in the table above. Call Technical Support for alternative sheet sizes. Additional coatings are available as follows:

On an aluminum support - high performance silica gel, dimethyl, cyano, and amino-modified silica gel

On a plastic support - DEAE cellulose, acetylated cellulose, cation and anion exchange resins

TLC AutoSpotter

- Use of standard TLC syringes
- Conveniently located control switches/knobs
- Digital temperature read-out
- Even drive bar movement for complete dispensing of all sample
- Adjustable needle guide
- Alternative syringe templates available for use with scored and channeled plates

There's a common myth that evidence speaks for itself. It doesn't. It just sits there on the lab table, incapable of speaking.

TLC AutoSpotter™

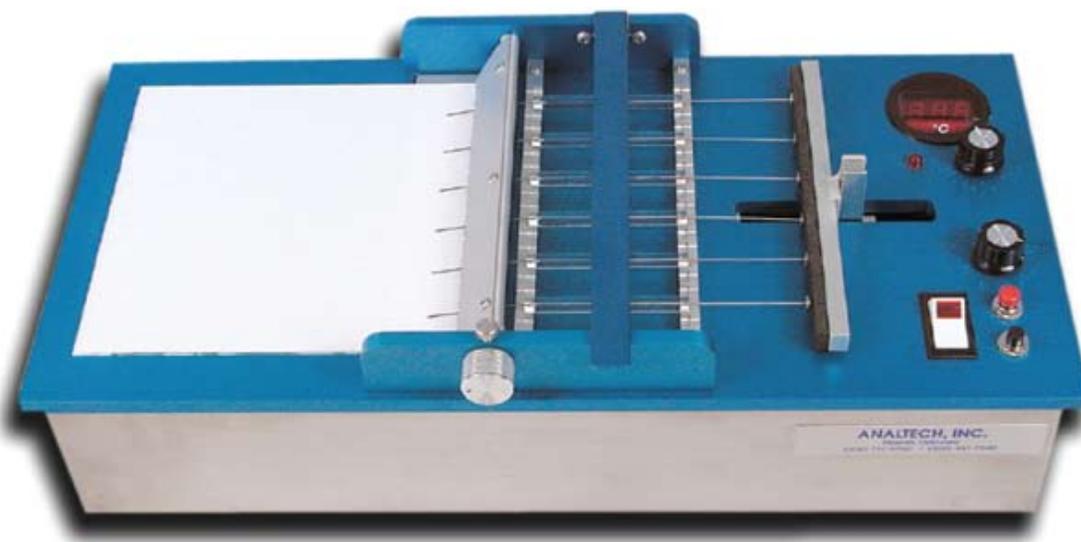
The TLC AutoSpotter is a semi-automated device used to apply samples on Thin Layer Chromatography plates. The instrument eliminates the need for manual sample application and can be used to apply up to 18 samples at a time.

The unit has been designed for use with custom made TLC syringes with blunt Teflon® tipped needles. These special needles minimize sample “creep back” and enhance reproducibility. The syringes also feature Teflon plunger tips to help eliminate the problem of metal-to-glass contamination. Syringes are available in 10, 25, 50, 100 and 250µl volumes.

The device can apply samples at variable rates ranging from 3 minutes (fastest speed) to 30 minutes (slowest speed). An integral heater strip runs beneath the TLC plate at the point of sample delivery to aid in solvent evaporation. By adjusting the delivery rate and temperature of the heater strip, the smallest possible sample zone can be obtained.

Syringes must be purchased separately. The unit will operate with as few as one syringe.

DESCRIPTION	CATALOG NO.
TLC AUTOSPOTTER, 110V (w/o syringes)	87-30
TLC AUTOSPOTTER, 230V (w/o syringes)	87-30i
AutoSpotter Scored Adapter Kit (for use with scored TLC plates)	87-301
AutoSpotter Channeled Adapter Kit (for use with channeled TLC plates)	87-302
10µL Syringe (each)	87-31
25µL Syringe (each)	87-32
50µL Syringe (each)	87-33
100µL Syringe (each)	87-34
250µL Syringe (each)	87-35



TLC AUTOSPOTTER

Check out a video demonstration of the TLC Autospotter at www.analtech.com