



TLC micro-sets introductory kits for science education

Beginner's set

- Features separations with simple developing solvents; samples are colored thus eliminating the need for visualization.
- All equipment needed is contained in the set.

Advanced sets F1, F2 and F3

- Require some experience and skill from the user: some of the samples have to be pretreated before separation, and for identification of substances spray reagents have to be used

TLC micro-set A for beginners

This kit contains all chemicals and accessories for the following separations:

- Separation of the fat-soluble (lipophilic)
Test dye mixture 1: butter yellow, indophenol, sudan blue II, sudan red G
- Separation of a mixture of anthraquinone dyes
Test dye mixture 2: blue 1, blue 3, green, green blue, red, violet 1, violet 2
- Separation of a mixture of food dyes
Test dye mixture 3: brilliant black BN (E151), fast red E, erythrosine (E127), yellow orange S (sunset yellow CFC, E110), naphthol red S, ponceau 4 R (E124), tartrazine (E102)
- Separation of dyes from felt tip pens

Contents of TLC micro-set A for beginners

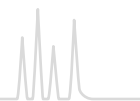
- 1 manual
- 3 developing chambers
- 50 glass capillaries 1 μ L
- 1 spotting guide
- 2 felt tip pens
- 1 measuring cylinder 10 mL
- 50 polyester sheets 4 x 8 cm each of POLYGRAM®: SIL G/UV₂₅₄, Alox N/UV₂₅₄ and CEL 300
- 8 mL each of test dye mixture 1 (4 lipophilic dyes), test dyes sudan red G, and sudan blue II
- 8 mL each of test dye mixture 2 (7 anthraquinone dyes), test dyes blue 1 and violet 2
- 8 mL each of test dye mixture 3 (7 food dyes), test dyes yellow orange S, and brilliant black BN
- 100 mL each of toluene, toluene – cyclohexane (2:1, v/v), ethanol, 2.5 % sodium citrate solution, 25 % ammonia solution – 2-propanol (5:3, v/v)

Ordering information

Designation	Pack of	REF
TLC micro-set A for beginners*	1 kit	814000
Replacement parts for TLC micro-set A		
Test dye mixture 1*, solution of 4 lipophilic dyes in toluene (components see above)	8 mL	814001
Test dye mixture 2*, solution of 7 anthraquinone dyes in toluene – cyclohexane (2:1, v/v) (components see above)	8 mL	814002
Test dye mixture 3, aqueous solution of 7 food dyes (components see above)	8 mL	814003
Collection of 4 individual components of test dye mixture 1*	4 x 8 mL	814011
Collection of 7 individual components of test dye mixture 2*	7 x 8 mL	814012
Collection of 7 individual components of test dye mixture 3	7 x 8 mL	814013
Sodium citrate, 2.5 g in 100 mL bottle to fill up with distilled water	2.5 g	814029

* These products contain harmful substances which must be specially labeled as hazardous. For detailed information please see SDS.

Information about the advanced sets F1, F2 and F3 can be found on page 270 and page 271.



TLC micro-set F1

This kit contains all chemicals required for the separation of

- Amino acids (test mixture, consisting of alanine, arginine, tryptophan and valine)
- Amino acids in urine
- The heavy metal cations copper(II) and manganese(II)

Contents of TLC micro-set F1

1 manual, 50 glass capillaries 1 μ L
50 polyester sheets 4 x 8 cm each of POLYGRAM®:
SIL G/UV₂₅₄ and CEL 300
100 mL each of *n*-butanol, ninhydrin spray reagent (0.2 % in ethanol), acetone, 25 % ammonia solution, rubeanic acid spray reagent
50 mL each of 50 % acetic acid, 18 % hydrochloric acid
8 mL each of the amino acid test mixture (see left), tryptophan and arginine reference solutions
8 mL each of the heavy metal cation test mixture (see left), Cu²⁺ and Mn²⁺ reference solutions

TLC micro-set F2

This kit contains all chemicals required

- For analysis of edible fats
- For analysis of fats and cholesterol in blood

Contents of TLC micro-set F2

1 manual, 50 glass capillaries 1 μ L
50 polyester sheets 4 x 8 cm POLYGRAM®:
SIL G/UV₂₅₄
5 disposable pipettes 25 μ L
5 sample vials N 11 (1.5 mL) with PE caps and seals
3 sample vials 30 mL (for butter, margarine and edible oil)
100 mL each of cyclohexane and molybdato-phosphoric acid spray reagent
2 x 50 mL acetone with calibrated pipette
25 mL butan-2-one
8 mL cholesterol reference solution

TLC micro-set F3

This kit contains all chemicals required

- For separation of analgetics (pain relievers)
- For drug analysis as shown for cinchona bark

Contents of TLC micro-set F3

1 manual, 50 glass capillaries 1 μ L
50 polyester sheets 4 x 8 cm POLYGRAM®:
SIL G/UV₂₅₄
5 Aspirin® tablets, 5 Thomapyrin® tablets
20 folded filters MN 615 1/4, 11 cm diameter
3 sample vials 8 mL (for Aspirin® sample, Thomapyrin® sample, cinchona bark extract), 5 g cinchona bark
100 mL each of ethanol, 2-propanol, toluene – diethyl ether
je 100 mL Ethanol, 2-Propanol, Toluol – Diethylether (61:39, v/v), spray reagent for caffeine and spray reagent according to Dragendorff-Munier
50 mL each of iron(III) chloride solution and potassium hexacyanoferrate(III) solution, 30 mL ethyl acetate
25 mL each of 12.5 % ammonia solution and diethylamine
8 mL each of caffeine, paracetamol, quinine reference solutions

All experiments with TLC micro-sets F1–F3 require the materials kit (see TLC micro-set M on page 271).



Ordering information

Designation	Pack of	REF
TLC micro-set F1*	1 kit	814200
Refill reagents for TLC micro-set F1		
Amino acid test mixtures (components see previous page)	8 mL	814201
Collection of 4 individual components of the amino acid test mixture	4 x 8 mL	814202
Cation test mixture (components see previous page)	8 mL	814204
Collection of 2 individual components of the cation test mixture (Cu ²⁺ , Mn ²⁺)	2 x 8 mL	814205
TLC micro-set F2*	1 kit	814300
Refill reagents for TLC micro-set F2		
Cholesterol reference solution*	8 mL	814301
TLC micro-set F3*	1 kit	814400
Refill reagents for TLC micro-set F3		
Quinine reference solution*	8 mL	814405
Paracetamol reference solution*	8 mL	814406
Caffeine reference solution*	8 mL	814407
Refill packs TLC sheets for all TLC micro-sets		
TLC polyester sheets POLYGRAM® SIL G/UV ₂₅₄ , 4 x 8 cm	4 x 50	814025
TLC polyester sheets POLYGRAM® Alox N/UV ₂₅₄ , 4 x 8 cm	4 x 50	814026
TLC polyester sheets POLYGRAM® CEL 300, 4 x 8 cm	4 x 50	814027
TLC polyester sheets POLYGRAM® 4 x 8 cm: 100 x SIL G/UV ₂₅₄ ; 50 x Alox N/UV ₂₅₄ ; 50 x CEL 300	1 kit	814028

* These products contain harmful substances which must be specially labeled as hazardous. For detailed information please see SDS.

Accessories for TLC micro-sets can be found under TLC accessories on page 295.

Spray reagents can be found on page 296.



TLC micro-set M

This kit is prerequisite for the separations with kits F1 to F3. In addition, it serves as basic equipment for the individual study of further thin layer chromatographic experiments.

Contents of TLC micro-set M (materials kit)

2 x 50 glass capillaries 1 µL, 2 spotting guides
 1 rubber cap for capillaries
 1 measuring cylinder 10 mL
 1 beaker 25 mL
 2 developing chambers
 1 glass laboratory sprayer with rubber bulb
 1 plastic syringe 1 mL
 20 sheets filter paper MN 713 (15 x 21 cm)
 50 polyester sheets 4 x 8 cm each of POLYGRAM®:
 SIL G/UV₂₅₄, Alox N/UV₂₅₄ and CEL 300

Ordering information

Designation	Pack of	REF
TLC micro-set M (materials kit)	1 kit	814100