Chromatography

MACHEREY-NAGEL

SIL HD and Nano-SIL HD

For precise colorization in TLC

- High luminosity
- Brilliant staining properties
- Excellent separation efficiency

MACHEREY-NAGEL
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SIL HD and Nano-SIL HD

Improved TLC glass plates from MACHEREY-NAGEL

- Outstanding dyeability and abrasion resistance due to an optimized binder system
- Good wettability for precise colorization results, even with 100 % aqueous detection reagents
- Excellent separation efficiency due to an optimized particle size distribution
- High suitability for trace analyses resulting from a UV indicator with increased brilliance and a low-noise background of the layer
- Available as glass plates with or without fluorescent indicator

Technical data

SIL HD

- Silica 60, mean pore size 60 Å
- Specific pore volume 0.75 mL/g
- Particle size 5–17 µm (TLC)

Nano-SIL HD

- Silica 60, mean pore size 60 Å
- Specific pore volume 0.75 mL/g
- Particle size 2–10 µm (HPTLC)

SIL HD and Nano-SIL HD

Separation of steroids

MN Appl. No. 403810

Plates: SIL HD UV_{254}, 20 x 20 cm (REF 809223)
Competitor M silica gel 60 F_{254}, glass backed, 20 x 20 cm

Sample: 1 µL of 0.2 % in acetone

Eluent: Chloroform – methanol (97:3 v/v)

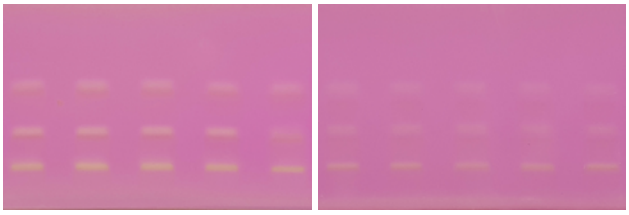
Migration: 6 cm in 15 min

Detection: Treatment with potassium permanganate staining solution and subsequent drying at 120 °C for 10 min

Improved contrast

The excellent staining property of SIL HD provides a better visibility.

SIL HD UV_{254} | Competitor M



Compound	R_f SIL HD UV_{254}	R_f Competitor M
Hydrocortisone	0.07	0.07
Cortexolone	0.21	0.22
Methyltestosterone	0.44	0.41

Separation of vitamins

MN Appl. No. 403800

Plates: SIL HD UV_{254}, 20 x 20 cm (REF 809223)
Competitor M silica gel 60 F_{254}, glass backed, 20 x 20 cm

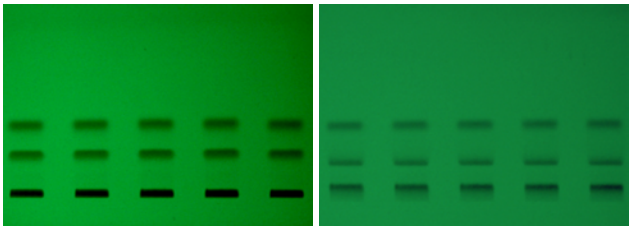
Sample: 1 µL of 0.1 % in chloroform – methanol (60:40 v/v)

Eluent: Chloroform – methanol (60:40 v/v)

Migration: SIL HD UV_{254}: 7 cm in 25 min
Competitor M: 7 cm in 20 min

Detection: TLC/HPTLC scanner UV 254 nm

SIL HD UV_{254} | Competitor M



Compound	R_f SIL HD UV_{254}	R_f Competitor M
L-ascorbic acid	0.02	0.06
Niacin	0.19	0.16
Nicotinamide	0.34	0.32

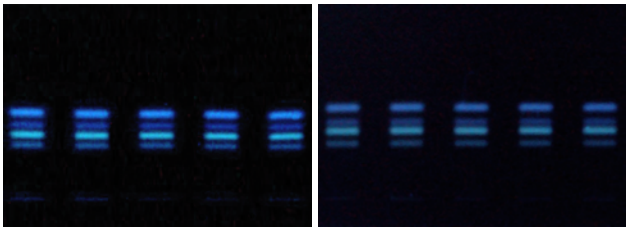
SIL HD and Nano-SIL HD

Separation of aflatoxins

MN Appl. No. 403740

Plates:	SIL HD, 20 x 20 cm (REF 809213) Competitor M silica gel 60, glass backed, 20 x 20 cm
Sample:	1 µL AFB_1, AFG_1: 2 µg/mL in acetonitrile AFB_2, AFG_2: 0.5 µg/mL in acetonitrile
Eluent:	Chloroform – acetone (90:10 v/v)
Migration:	7 cm in 20 min
Detection:	TLC/HPTLC scanner UV 366 nm

SIL HD | Competitor M



Compound	R_f SIL HD	R_f Competitor M
AFG_2	0.24	0.25
AFG_1	0.28	0.30
AFB_2	0.33	0.34
AFB_1	0.38	0.41

Separation of aflatoxins (HPTLC)

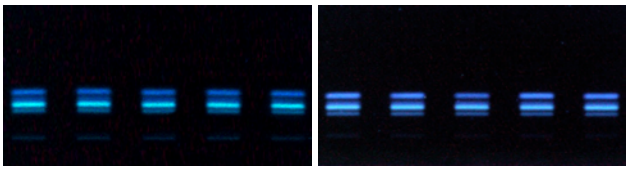
MN Appl. No. 403750

Plates:	Nano-SIL HD, 10 x 20 cm (REF 811213) Competitor M silica gel 60, glass backed, 10 x 20 cm
Sample:	1 µL AFB_1, AFG_1: 2 µg/mL in acetonitrile AFB_2, AFG_2: 0.5 µg/mL in acetonitrile
Eluent:	Chloroform – acetone (90:10 v/v)
Migration:	5 cm in 15 min
Detection:	TLC/HPTLC scanner UV 366 nm

Good to know

For a fast and cost efficient separation of aflatoxins we recommend Nano-SIL HD. Best results can be achieved with UV light of wavelength 366 nm.

Nano-SIL HD | Competitor M



Compound	R_f Nano-SIL HD	R_f Competitor M
AFG_2	0.22	0.21
AFG_1	0.25	0.24
AFB_2	0.30	0.26
AFB_1	0.34	0.31

SIL HD and Nano-SIL HD

Separation of pesticides

MN Appl. No. 403780

Plates: SIL HD UV_{254}, 20 x 20 cm (REF 809223)
Competitor M silica gel 60 F_{254}, glass backed, 20 x 20 cm

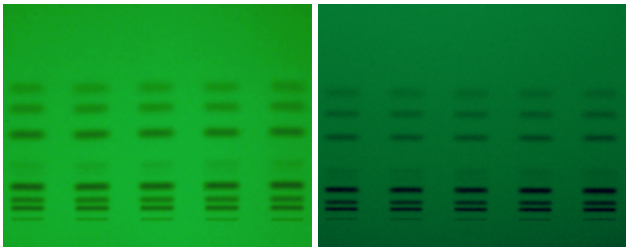
Sample: 1 µL of 0.1 % in acetone

Eluent: *n*-hexane – acetone (80:20 v/v)

Migration: SIL HD UV_{254}: 7 cm in 10 min
Competitor M: 7 cm in 8 min

Detection: TLC/HPTLC scanner UV 254 nm

SIL HD UV_{254} | Competitor M



Compound	R_f SIL HD UV_{254}	R_f Competitor M
Hexazinone	0.05	0.04
Metoxuron	0.07	0.07
Monuron	0.15	0.13
Azinphos-methyl	0.24	0.21
Prometryn	0.38	0.37
Pyridate	0.50	0.47
Trifluralin	0.60	0.57

Separation of insecticides

MN Appl. No. 403770

Plates: SIL HD UV_{254}, 20 x 20 cm (REF 809223)
Competitor M silica gel 60 F_{254}, glass backed, 20 x 20 cm

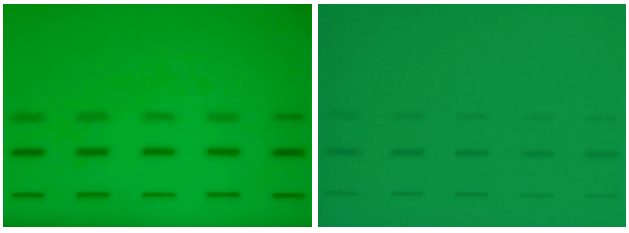
Sample: 1 µL of 0.1 % in dichloromethane

Eluent: *n*-heptane

Migration: 7 cm in 10 min

Detection: TLC/HPTLC scanner UV 254 nm

SIL HD UV_{254} | Competitor M



Compound	R_f SIL HD UV_{254}	R_f Competitor M
Endrin	0.02	0.02
DDT	0.24	0.23
Aldrin	0.41	0.41

SIL HD and Nano-SIL HD

Separation of sulfonamides

MN Appl. No. 403790

Plates: SIL HD UV_{254}, 20 x 20 cm (REF 809223)
Competitor M silica gel 60 F_{254}, glass backed, 20 x 20 cm

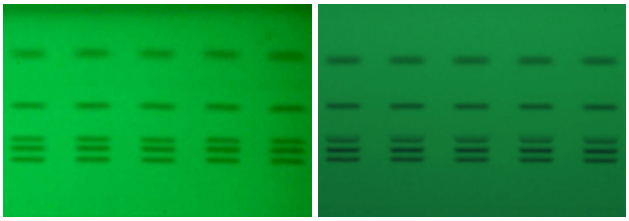
Sample: 1 µL of 0.1 % in methanol

Eluent: Ethyl acetate – methanol – ammonia sol. (25 %)
(70:15:15 v/v/v)

Migration: 7 cm in 20 min

Detection: TLC/HPTLC scanner UV 254 nm

SIL HD UV_{254} Competitor M



Compound	R_f SIL HD_{254}	R_f Competitor M
Sulfadiazine	0.16	0.16
Sulfamerazine	0.21	0.20
Sulfisoxazole	0.25	0.24
Sulfapyridine	0.40	0.39
Sulfanilamide	0.63	0.59

Separation of flavonoids

MN Appl. No. 403760

Plates: SIL HD UV_{254}, 20 x 20 cm (REF 809223)
Competitor M silica gel 60 F_{254}, glass backed, 20 x 20 cm

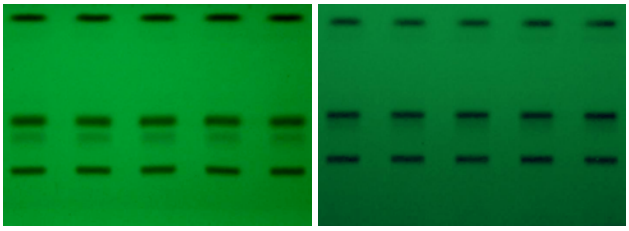
Sample: 1 µL of 0.1 % in methanol

Eluent: Ethyl acetate – butanone – formic acid – water
(50:30:10:10 v/v/v/v)

Migration: SIL HD UV_{254}: 7 cm in 25 min
Competitor M: 7 cm in 20 min

Detection: TLC/HPTLC scanner UV 254 nm

SIL HD UV_{254} Competitor M



Compound	R_f SIL HD UV_{254}	R_f Competitor M
Rutin	0.29	0.31
Chlorogenic acid	0.43	0.48
Hyperosid	0.49	0.51
Quercetin	0.93	0.93

SIL HD and Nano-SIL HD

Ordering information

Designation	Thickness of layer	Plate size	Fluorescent indicator	Pack of	REF
SIL HD					
SIL HD	0.25 mm	5 x 10 cm	-	50	809217
SIL HD UV_{254}	0.25 mm	5 x 10 cm	UV 254	50	809227
SIL HD	0.25 mm	10 x 10 cm	-	25	809210
SIL HD UV_{254}	0.25 mm	10 x 10 cm	UV 254	25	809220
SIL HD	0.25 mm	10 x 20 cm	-	50	809212
SIL HD UV_{254}	0.25 mm	10 x 20 cm	UV 254	50	809222
SIL HD	0.25 mm	20 x 20 cm	-	25	809213
SIL HD UV_{254}	0.25 mm	20 x 20 cm	UV 254	25	809223
Nano-SIL HD					
Nano-SIL HD	0.20 mm	5 x 5 cm	-	100	811211
Nano-SIL HD UV_{254}	0.20 mm	5 x 5 cm	UV 254	100	811221
Nano-SIL HD	0.20 mm	10 x 10 cm	-	25	811212
Nano-SIL HD UV_{254}	0.20 mm	10 x 10 cm	UV 254	25	811222
Nano-SIL HD	0.20 mm	10 x 20 cm	-	50	811213
Nano-SIL HD UV_{254}	0.20 mm	10 x 20 cm	UV 254	50	811223
Accessories					
Simultaneous developing chamber for TLC, 20 x 20 cm				1	814019
Simultaneous developing chamber for TLC, 10 x 10 cm				1	814018

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MACHEREY-NAGEL

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