Dr. Maisch

Any Column, Any Size, Any Media

REPROSHELL®

Core-Shell columns

MADE BY DR. MAISCH

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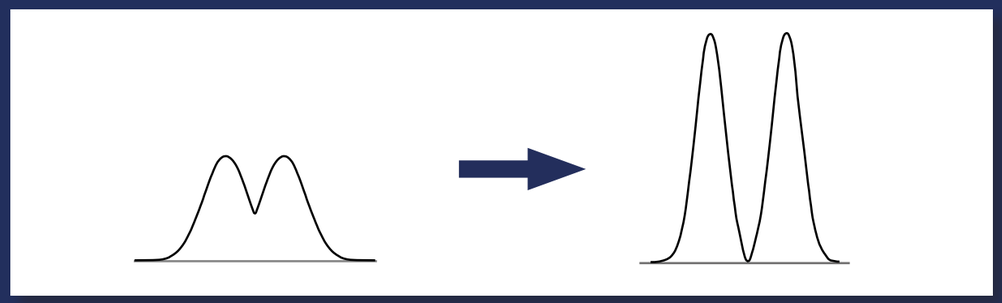
REPROSHELL MADE BY DR. MAISCH

From one of the biggest **H**igh-**P**erformance **L**iquid **C**hromatography (HPLC) - Column Manufacturers in Europe.

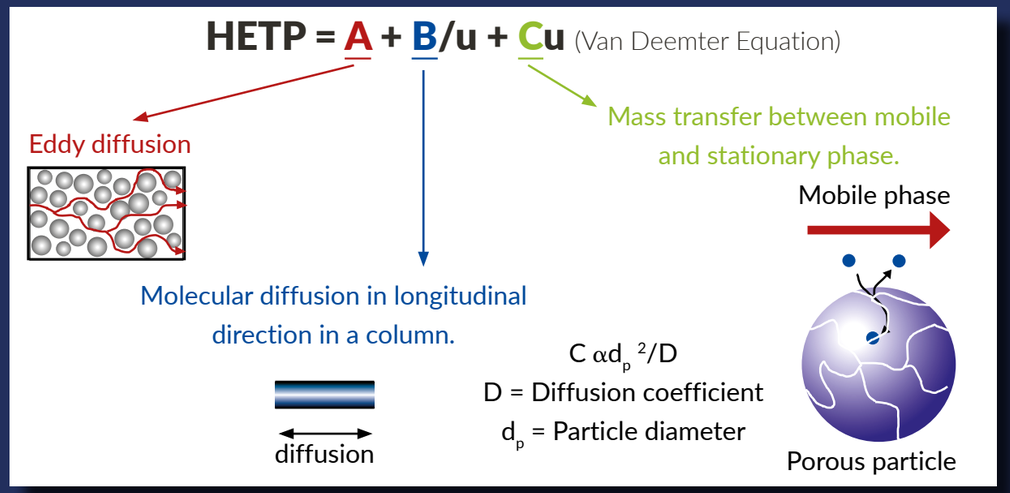
Core - Shell pharticles

Core-Shell particles consist of a solid (non-porous) core surrounded by a porous layer (shell). They exhibit the same back pressure but higher efficiency compared to fully porous particles of the same particle size.

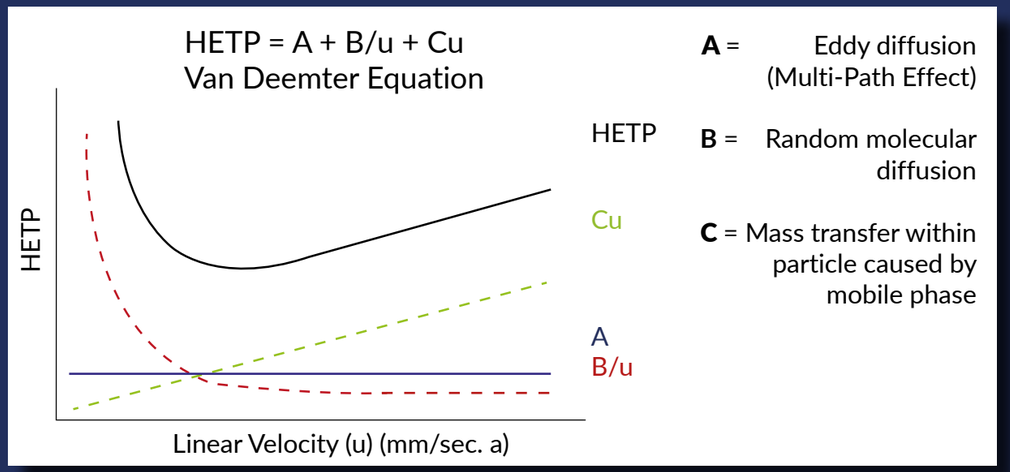


REPROSHELL

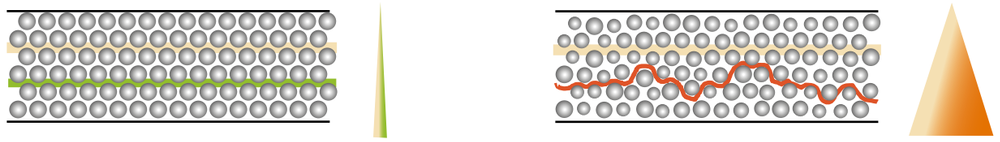
ReproShell – van Deemter Equation



van Deemter Plot

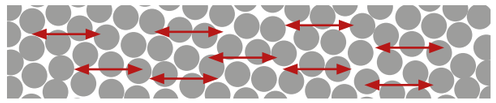


A-TERM (EDDY DIFFUSION, MULTI-PATH EFFECT)

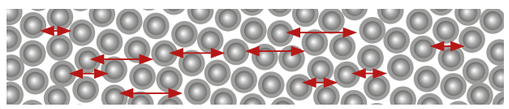


Core-Shell particles have a tighter particle size distribution which leads to a more uniform, organised bed structure. This reduces the impact of the multi-path effect.

B-Term (Longitudinal Diffusion)

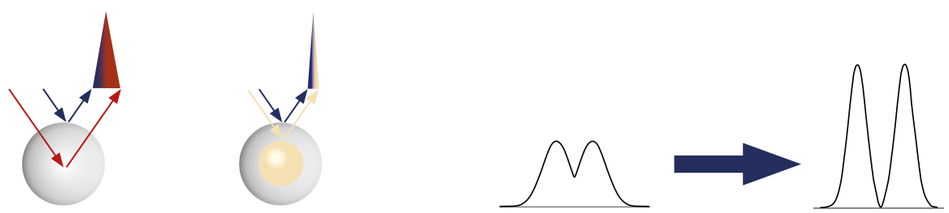


Fully porous particles:
Diffusion takes place within the porous particle as well as in the interstitial space



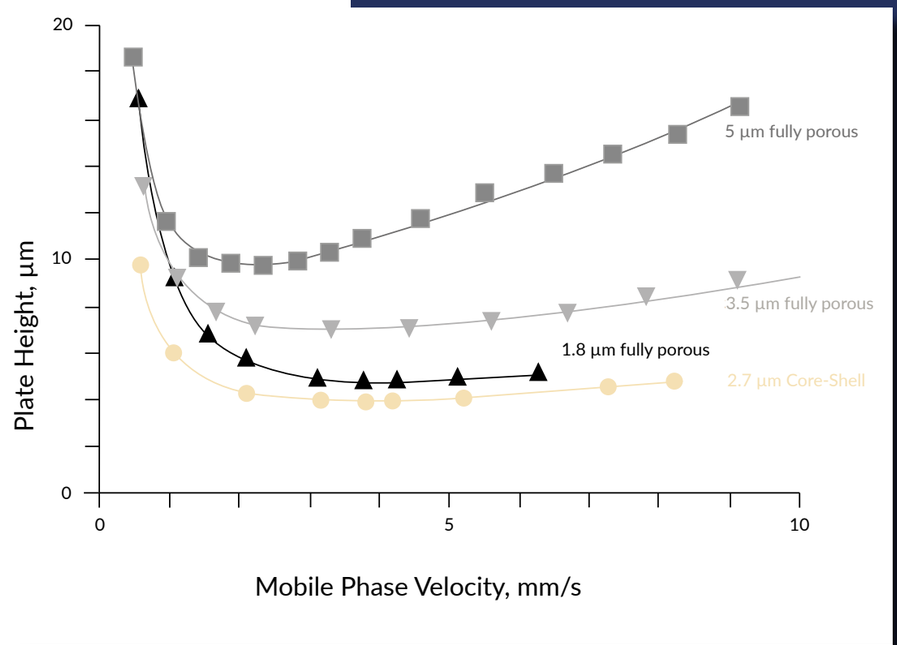
Core-Shell particles:
Non-porous core blocks longitudinal diffusion

C-Term (Mass transfer)



The non-porous core leads to a shorter diffusion path

COMPARISON CORE-SHELL VS. FULLY POROUS PARTICLES



ReproShell – Available phases

Particle sizes 2.7 µm and 5 µm

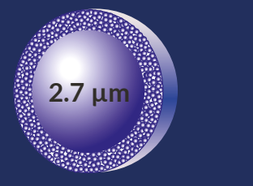
UPLC PERFORMANCE WITH STANDARD HPLC INSTRUMENT

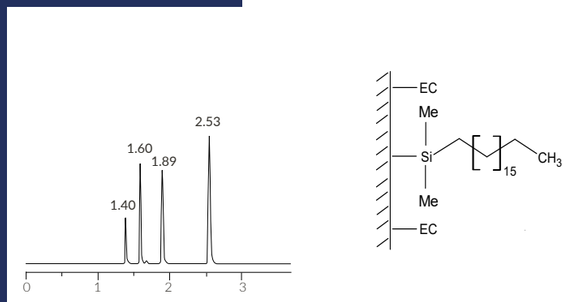
AND BACKPRESSURE

VARIOUS SELECTIVITIES

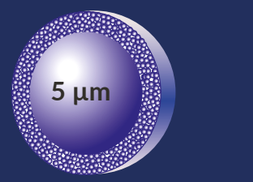
- ODS-1 (highly retentive C18)
- ODS-3 (trifunctional C18)
- C8
- Biphenyl
- Phenylhexyl
- PFP (Penta fluoro phenyl)
- Silica
- HILIC

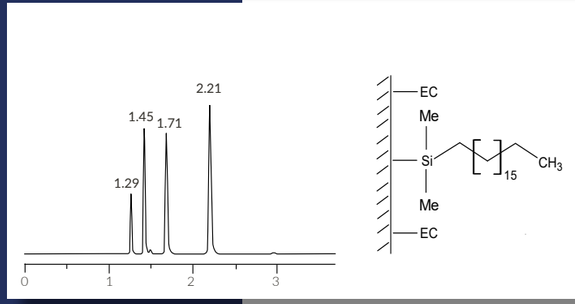
ReproShell ODS -1
2.7µm



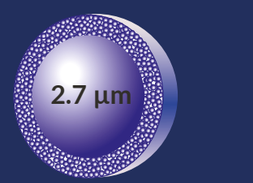


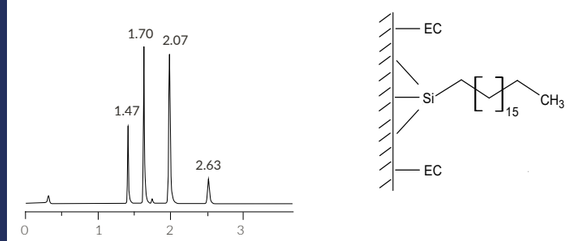
ReproShell ODS - 1
5 µm



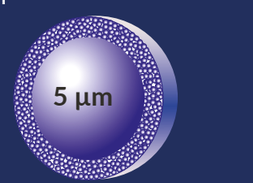


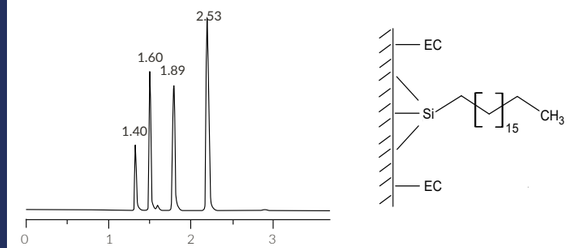
ReproShell ODS - 3
2.7 µm





ReproShell ODS - 3
5 µm





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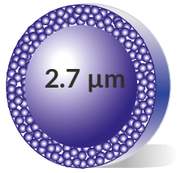
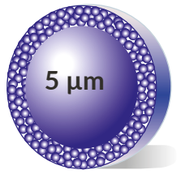
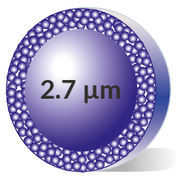
ReproShell Biphenyl,
2.7µm



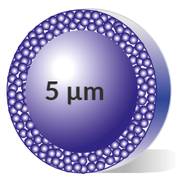
ReproShell Biphenyl,
5 µm

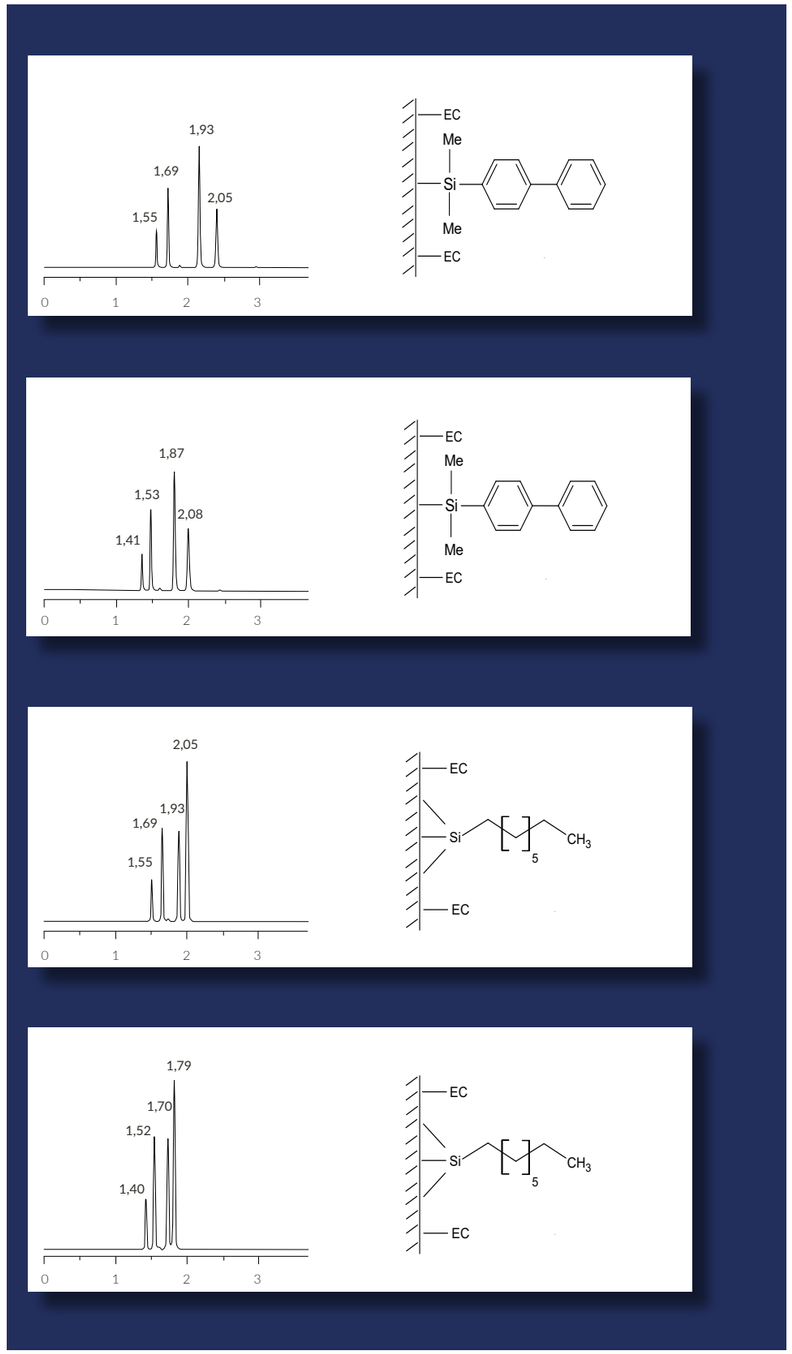


ReproShell C8,
2.7 µm



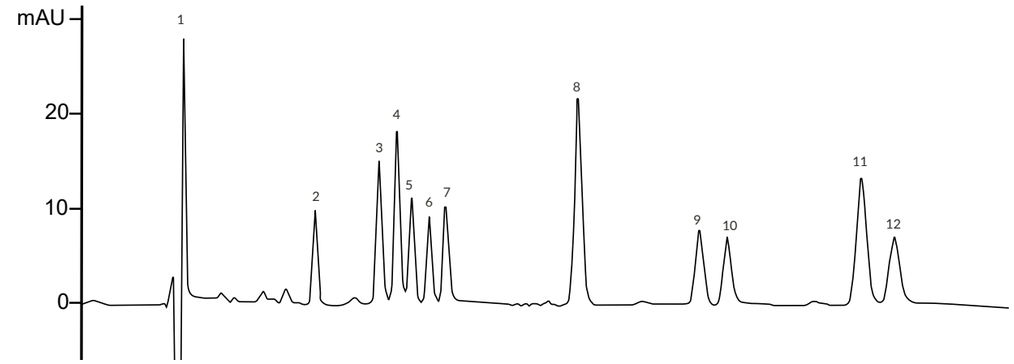
ReproShell C8,
5 µm





REPROSHELL - EFFICIENCY

HPLC-UV quantitation of 11 cannabinoids



1 - THCA
2 - D9 THC
3 - D8 THC
4 - THCV
5 - CBGA
6 - CBG
7 - CBDA
8 - CBD
9 - CBDV
10 - CBN
11 - CBC

Column:	Reproshell ODS-1, 2.7 µm um, 150 x 4,6 mm
Mobile Phase A:	Acetonitrile w / 0.1 % formic acid
Mobile Phase B:	Water w / 0.1 % formic acid
Mobile Phase Composition:	75/25 - A/B - Iscocratic
Flow rate:	2 mL/min
Back pressure:	220-230 bar
Detection:	228 nm
Run Time:	7 minutes
Reference Standard:	Cayman Chemical, Prod No. 32842

Chromatogramme and method courtesy of www.seedlessanalytical.com

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AVAILABLE COLUMNS

Coreshell RP-Phase with nonporous core and porous shell

Particle size 5µm	20 x 2 mm	30 x 2 mm	50 x 2 mm	75 x 2 mm	100 x 2 mm	125 x 2 mm	150 x 2 mm	5 x 2 mm 3/pck
ReproShell ODS-1	cs15.91.s0202	cs15.91.s0302	cs15.91.s0502	cs15.91.s0702	cs15.91.s1002	cs15.91.s1202	cs15.91.s1502	cs15.91.v0002
ReproShell ODS-3	cs15.93.s0202	cs15.93.s0302	cs15.93.s0502	cs15.93.s0702	cs15.93.s1002	cs15.93.s1202	cs15.93.s1502	cs15.93.v0002
ReproShell C8	cs15.8e.s0202	cs15.8e.s0302	cs15.8e.s0502	cs15.8e.s0702	cs15.8e.s1002	cs15.8e.s1202	cs15.8e.s1502	cs15.8e.v0002
ReproShell Biphenyl	cs15.bpe.s0202	cs15.bpe.s0302	cs15.bpe.s0502	cs15.bpe.s0702	cs15.bpe.s1002	cs15.bpe.s1202	cs15.bpe.s1502	cs15.bpe.v0002
ReproShell Phenylhexyl	cs15.ph.s0202	cs15.ph.s0302	cs15.ph.s0502	cs15.ph.s0702	cs15.ph.s1002	cs15.ph.s1202	cs15.ph.s1502	cs15.ph.v0002
ReproShell PFP	cs15.pfp.s0202	cs15.pfp.s0302	cs15.pfp.s0502	cs15.pfp.s0702	cs15.pfp.s1002	cs15.pfp.s1202	cs15.pfp.s1502	cs15.pfp.v0002
ReproShell Silica	cs15.00.s0202	cs15.00.s0302	cs15.00.s0502	cs15.00.s0702	cs15.00.s1002	cs15.00.s1202	cs15.00.s1502	cs15.00.v0002

Particle size 2,7 µm	20 x 3 mm	30 x 3 mm	50 x 3 mm	75 x 3 mm	100 x 3 mm	125 x 3 mm	150 x 3 mm	5 x 3 mm 3/pck
ReproShell ODS-1	cs27.91.s0203	cs27.91.s0303	cs27.91.s0503	cs27.91.s0703	cs27.91.s1003	cs27.91.s1203	cs27.91.s1503	cs27.91.v0003
ReproShell ODS-3	cs27.93.s0203	cs27.93.s0303	cs27.93.s0503	cs27.93.s0703	cs27.93.s1003	cs27.93.s1203	cs27.93.s1503	cs27.93.v0003
ReproShell C8	cs27.8e.s0203	cs27.8e.s0303	cs27.8e.s0503	cs27.8e.s0703	cs27.8e.s1003	cs27.8e.s1203	cs27.8e.s1503	cs27.8e.v0003
ReproShell Biphenyl	cs27.bpe.s0203	cs27.bpe.s0303	cs27.bpe.s0503	cs27.bpe.s0703	cs27.bpe.s1003	cs27.bpe.s1203	cs27.bpe.s1503	cs27.bpe.v0003
ReproShell Phenylhexyl	cs27.ph.s0203	cs27.ph.s0303	cs27.ph.s0503	cs27.ph.s0703	cs27.ph.s1003	cs27.ph.s1203	cs27.ph.s1503	cs27.ph.v0003
ReproShell PFP	cs27.pfp.s0203	cs27.pfp.s0303	cs27.pfp.s0503	cs27.pfp.s0703	cs27.pfp.s1003	cs27.pfp.s1203	cs27.pfp.s1503	cs27.pfp.v0003
ReproShell Silica	cs27.00.s0203	cs27.00.s0303	cs27.00.s0503	cs27.00.s0703	cs27.00.s1003	cs27.00.s1203	cs27.00.s1503	cs27.00.v0003

COLUMNS MADE BY DR. MAISCH 13

AVAILABLE COLUMNS

Particle size 2,7 µm	20 x 4 mm	30 x 4 mm	50 x 4 mm	75 x 4 mm	100 x 4 mm	125 x 4 mm	150 x 4 mm	5 x 4 mm 3/pck
ReproShell ODS-1	cs27.91.s0204	cs27.91.s0304	cs27.91.s0504	cs27.91.s0704	cs27.91.s1004	cs27.91.s1204	cs27.91.s1504	cs27.91.v0004
ReproShell ODS-3	cs27.93.s0204	cs27.93.s0304	cs27.93.s0504	cs27.93.s0704	cs27.93.s1004	cs27.93.s1204	cs27.93.s1504	cs27.93.v0004
ReproShell C8	cs27.8e.s0204	cs27.8e.s0304	cs27.8e.s0504	cs27.8e.s0704	cs27.8e.s1004	cs27.8e.s1204	cs27.8e.s1504	cs27.8e.v0004
ReproShell Biphenyl	cs27.bpe.s0204	cs27.bpe.s0304	cs27.bpe.s0504	cs27.bpe.s0704	cs27.bpe.s1004	cs27.bpe.s1204	cs27.bpe.s1504	cs27.bpe.v0004
ReproShell Phenylhexyl	cs27.ph.s0204	cs27.ph.s0304	cs27.ph.s0504	cs27.ph.s0704	cs27.ph.s1004	cs27.ph.s1204	cs27.ph.s1504	cs27.ph.v0004
ReproShell PFP	cs27.pfp.s0204	cs27.pfp.s0304	cs27.pfp.s0504	cs27.pfp.s0704	cs27.pfp.s1004	cs27.pfp.s1204	cs27.pfp.s1504	cs27.pfp.v0004
ReproShell Silica	cs27.00.s0204	cs27.00.s0304	cs27.00.s0504	cs27.00.s0704	cs27.00.s1004	cs27.00.s1204	cs27.00.s1504	cs27.00.v0004

AVAILABLE COLUMNS

Particle size 2,7 µm	20 x 4.6 mm	30 x 4.6 mm	50 x 4.6 mm	75 x 4.6 mm	100 x 4.6 mm	125 x 4.6 mm	150 x 4.6 mm	5 x 4.6mm 3/pck
ReproShell ODS-1	cs27.91.s0246	cs27.91.s0346	cs27.91.s0546	cs27.91.s0746	cs27.91.s1046	cs27.91.s1246	cs27.91.s1546	cs27.91.v0046
ReproShell ODS-3	cs27.93.s0246	cs27.93.s0346	cs27.93.s0546	cs27.93.s0746	cs27.93.s1046	cs27.93.s1246	cs27.93.s1546	cs27.93.v0046
ReproShell C8	cs27.8e.s0246	cs27.8e.s0346	cs27.8e.s0546	cs27.8e.s0746	cs27.8e.s1046	cs27.8e.s1246	cs27.8e.s1546	cs27.8e.v0046
ReproShell Biphenyl	cs27.bpe.s0246	cs27.bpe.s0346	cs27.bpe.s0546	cs27.bpe.s0746	cs27.bpe.s1046	cs27.bpe.s1246	cs27.bpe.s1546	cs27.bpe.v0046
ReproShell Phenylhexyl	cs27.ph.s0246	cs27.ph.s0346	cs27.ph.s0546	cs27.ph.s0746	cs27.ph.s1046	cs27.ph.s1246	cs27.ph.s1546	cs27.ph.v0046
ReproShell PFP	cs27.pfp.s0246	cs27.pfp.s0346	cs27.pfp.s0546	cs27.pfp.s0746	cs27.pfp.s1046	cs27.pfp.s1246	cs27.pfp.s1546	cs27.pfp.v0046
ReproShell Silica	cs27.00.s0246	cs27.00.s0346	cs27.00.s0546	cs27.00.s0746	cs27.00.s1046	cs27.00.s1246	cs27.00.s1546	cs27.00.v0046

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