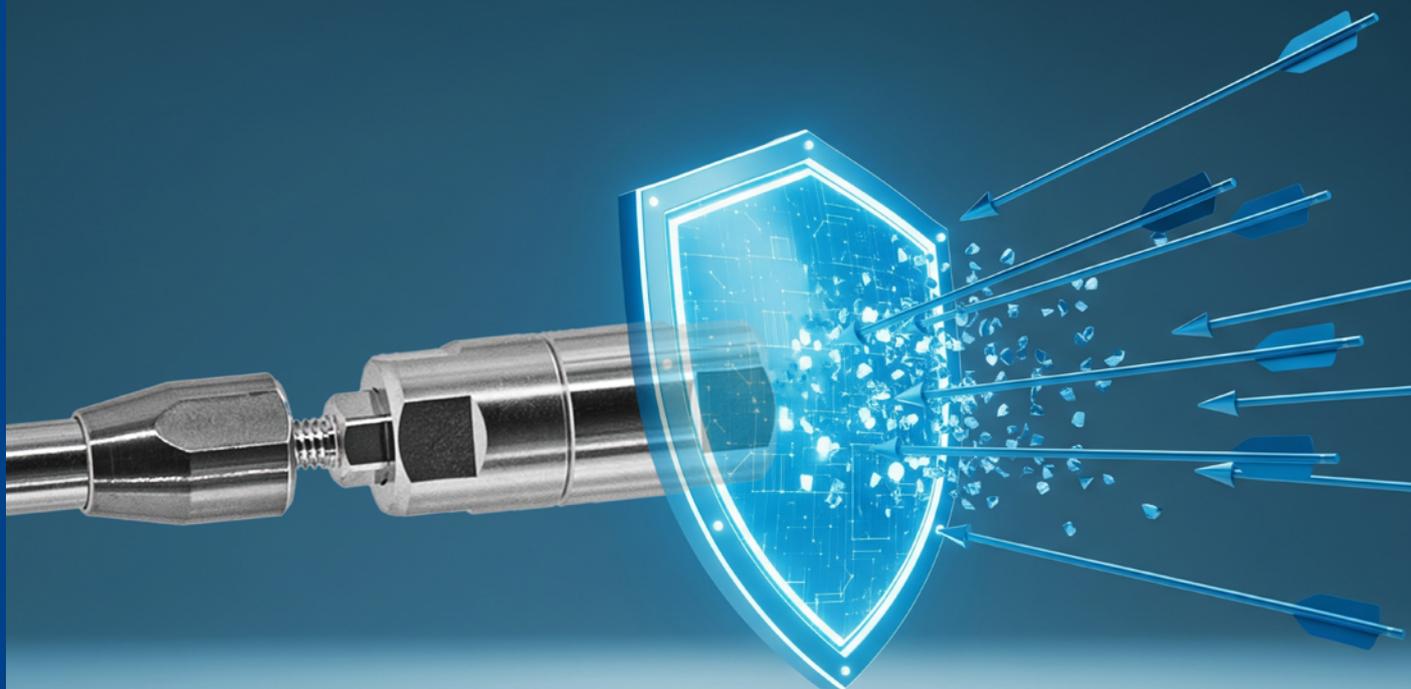


MACHEREY-NAGEL

NUCLEOGUARD

Universal Protection System

Chromatography



Enhanced Column Life

- Extend column lifetime without compromising performance
- Improved two-piece design for better handling
- Compatible with all common analytical HPLC columns  $\geq 5 \mu\text{m}$

**MACHEREY-NAGEL**

[www.mn-net.com](http://www.mn-net.com)

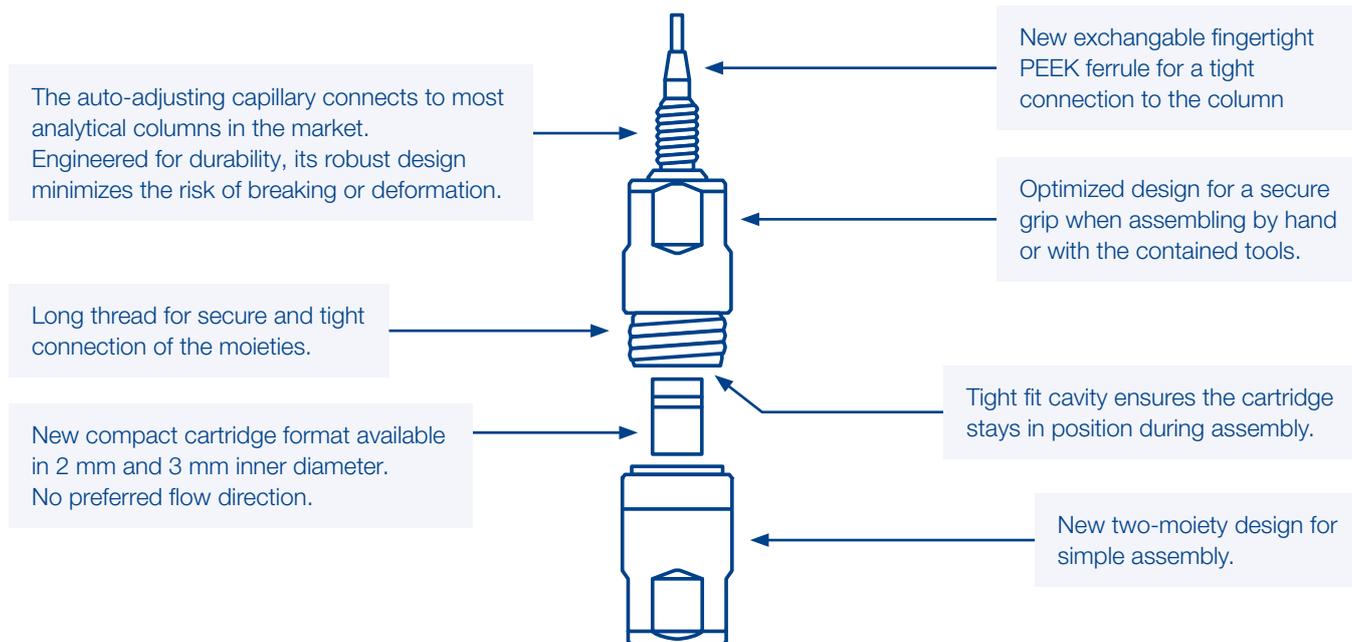


# NUCLEOGUARD – Universal Protection System

## Guard column systems – The key to extended performance

HPLC columns wear out over time, but most performance problems are caused by contaminants. These come from samples, solvents, system seals, and other sources. When contaminants enter the column, they can clog the frits or stick to the stationary phase, changing how the column works. This often leads to high backpressure, split peaks, and poor resolution, forcing early column replacement.

The NUCLEOGUARD Universal Protection System provides a simple solution. It removes contaminants before they reach and damage your analytical column, helping maintain reliable chromatographic performance. Its universal design makes it compatible with analytical columns from most manufacturers.

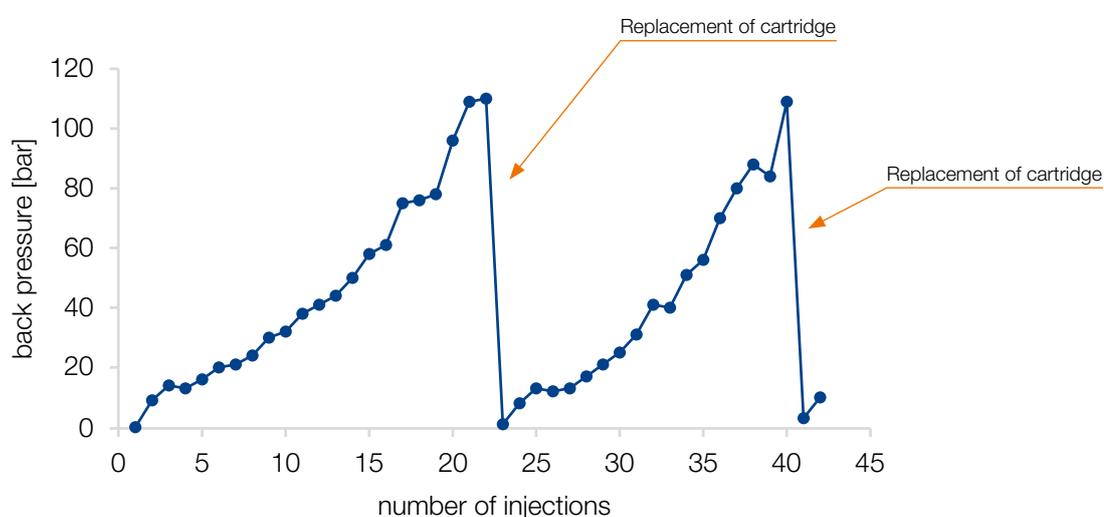


# NUCLEOGUARD – Universal Protection System

## Impact of a guard column

Analytical column performance inevitably declines as it is exposed to contaminants over time. Fine particles can clog the inlet frit and the sorbent bed, resulting in increased backpressure. Eventually, the pressure may exceed operating limits, necessitating column replacement. Incorporating a column protection system offers a cost-efficient alternative. While guard columns also clog over time, they are inexpensive and easily replaced, extending the lifespan of the primary analytical column.

The effectiveness of the NUCLEOGUARD Universal Protection System was demonstrated in a simulated clogging study. Therefore, a NUCLEODUR® C18 Gravity, 5 µm, 100 × 3 mm column was subjected to repeated injections of a matrix-contaminated sample. The data shows a progressive increase in backpressure with each injection due to contamination. However, replacing the guard column cartridge after the 22nd injection immediately restored normal backpressure levels. This result was reproducible, confirming that the system can successfully extend a column's lifespan.



Note: Only the contribution of the NUCLEOGUARD Universal Protection System towards the total back pressure is displayed. Intact systems always start from a positive total back pressure > 0 bar.

## Order information

Product	Format	REF
■ NUCLEOGUARD Universal Protection System Starter Kit		718981
■ NUCLEOGUARD Universal Protection System Guard Column Holder		718982
■ NUCLEOGUARD UPS Replacement Ferrule (3 pcs)		718983
■ NUCLEOGUARD UPS Guard Column Cartridge 4/2 C18 Gravity	4 × 2 mm	761904.20
■ NUCLEOGUARD UPS Guard Column Cartridge 4/3 C18 Gravity	4 × 3 mm	761904.30
■ NUCLEOGUARD UPS Guard Column Cartridge 4/2 C18 ec	4 × 2 mm	761934.20
■ NUCLEOGUARD UPS Guard Column Cartridge 4/3 C18 ec	4 × 3 mm	761934.30

For more phases please visit the product page.

# NUCLEOGUARD – Universal Protection System

## Instruction manual

The NUCLEOGUARD Universal Protection System Starter Kit contains a quick installation guide for your guard column holder.

Find the digital long instruction manual here:



Modern HPLC phases

## Good to know

The MACHEREY-NAGEL application database provides over 3000 chromatography application examples from HPLC, GC, TLC and SPE and is accessible free of charge:



<https://chromaappdb.mn-net.com/>

Do you want to learn more about HPLC columns?



Modern HPLC phases



NUCLEOSIL® phases



Chromatography Catalog

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[www.mn-net.com/chromatography-service](http://www.mn-net.com/chromatography-service)



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Management System  
EN ISO 13485:2016  
ISO 9001:2015

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