

SureSTART Vial Quick Select Guide

For every LC/GC application and budget

Choosing your vials and inserts

The chart below provides a quick guide to selecting the right Thermo Scientific™ SureSTART™ vial and insert material for your experimental and application requirements.

Performance			Sample volume		
Non-MS Compound levels not challenging	MS Compound levels at relatively low levels	MS Compound levels near method detection limit or for research analysis	Not sample limited	Volumes vary	Limited
↓	↓	↓	↓	↓	↓
SureSTART Performance level 1 General purpose: chromatography approved	SureSTART Performance level 2 high-throughput: for applications requiring robust and reproducible results High-throughput: for applications requiring robust and reproducible results	SureSTART Performance level 3 High performance: for applications requiring high selectivity and sensitivity	2 mL vial SureSTART Performance level 1, 2 and 3	High recovery vial Total recovery vial SureSTART Performance level 3	Polyspring insert (self-aligning) Pulled insert (economical choice) Fused insert vial 2 mL vial with separate inserts SureSTART Performance level 2 and 3

Compound polarity			Compound volatility		Compound stability	
Non-polar Mid-polar	Polar	Highly polar	Volatile	Non-volatile	Light-stable	Light-sensitive
↓	↓	↓	↓	↓	↓	↓
Glass vials SureSTART Performance level 1, 2 and 3	***GOLD-grade glass SureSTART Performance level 3	***Silanized glass vials ****Polypropylene (PP) vials GOLD-grade glass vials and inserts When low levels of inorganic are required and for solvent stability SureSTART Performance level 1 (PP), 2 and 3 (silanized)	Crimp top vial ***Thermo Scientific SureStop vial Screw thread vial Headspace vials	Screw thread vial Snap-It vial Crimp top vial	Clear vials	Amber vials

***These products can be found in SureSTART Performance level 3
****Not recommended for GC applications

Performance levels

Our vials come in three distinct SureSTART performance levels which are differentiated by instrument compatibility, performance, reproducibility, quality, and value which makes selecting the right vial simple.



Performance level 1: Everyday analysis

Achieve your results with our accessible range of vials and caps

Suitable for QA/QC applications using core detectors, e.g., UV/Vis, PDA, RI, ELSD, FLD, FID, NPD, ECD, TCD, or FPD. Compound concentrations are at easily detectable levels.



Performance level 2: High-throughput analysis

Help ensure compliance in regulated environments

Suitable for routine QA/QC applications using MS technology. Compound concentrations are at easily detectable or low levels of detection.



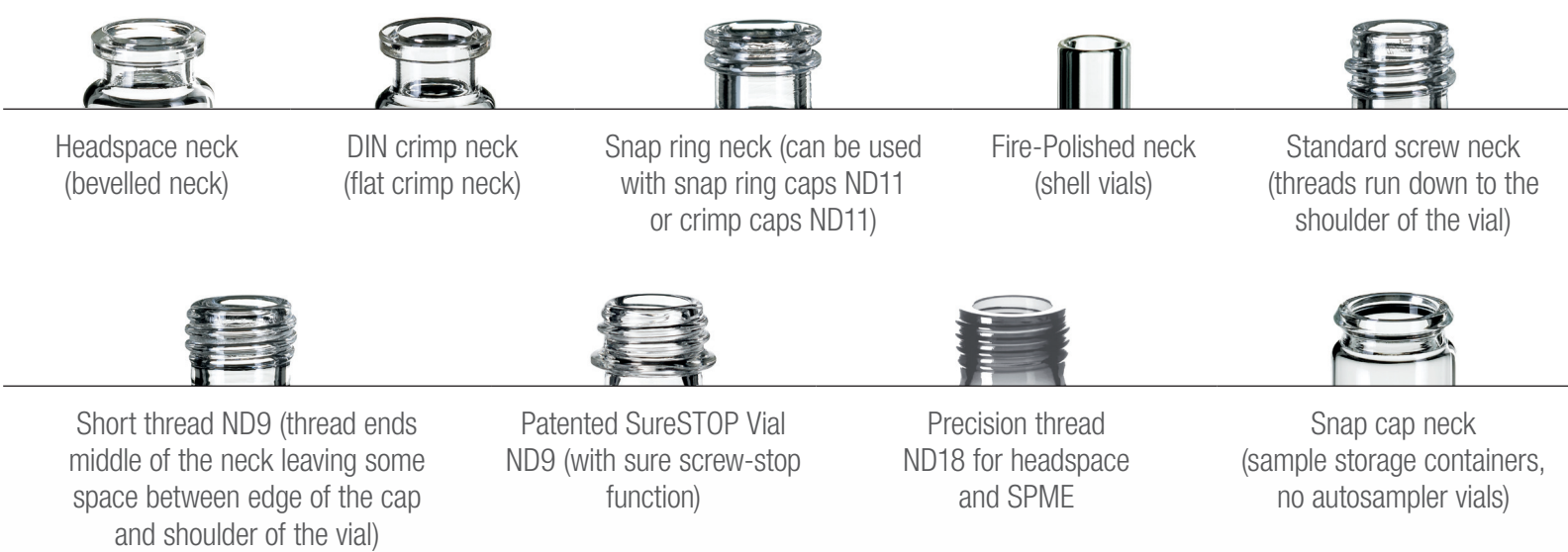
Performance level 3: High performance

Protect valuable samples for demanding analyses

Suitable for challenging applications, and research-focused applications, using MS technology. Compound concentrations are at/near the method detection limit.

Vial neck and bottom design types

Design of the neck



Design of the bottom



Closure types: choosing your cap and septa

Choosing your cap

The patented Thermo Scientific™ SureSTART™: SureSTOP™ and AVCS screw technology is designed to remove subjectivity around achieving the optimal closure compression when closing a vial. Compatible with all LC and GC autosamplers, our SureSTOP vials with our AVCS caps:

- Effective closure every time
- Obtain cleaner spectra
- More consistent data for GC and LC applications
- Reduce instrument downtime and ensure sample throughput
- Standardize your stockroom



Cap tilt and septum displacement due to over tightening can occur with other standard options



SureSTOP vial with AVCS closure provides optimal cap positioning

SureSTART vial size	SureSTART vial type	SureSTART AVCS cap size
2 mL	Screw	9 mm
2 mL	GOLD-Grade	9 mm
2 mL	Crimp	11 mm
2 mL	Snap	11 mm
4 mL	Screw	13 mm (13-425)
8 mL	Screw	15 mm (15-425)
10 mL	Screw	18 mm
10 mL	Crimp	20 mm
12 mL	Screw	15 mm (15-425)
16 mL	Screw	18 mm (18-400)
20 mL	Crimp	20 mm
20 mL	Screw	18 mm
40 mL	Screw	24 mm (24-400)

Choosing your septa

The chart below provides a quick guide to selecting the right septa material type for your experimental and application requirements.

Multiple injection?	Temperature?			Thin, fragile needle?	Blunt, thick needle?	Critical analysis?	Low coring?
Good resealability required	-40 °C to 120 °C	-40 °C to 110 °C	-60 °C to 200 °C	Soft and thin septa required	Pre-slit/ pre-cut liner as penetration aid (HPLC)	Very clean liner required/ low-extractables	Double-sided PTFE laminated liners required
↓	↓	↓	↓	↓	↓	↓	↓
Silicone/PTFE Natural rubber/TEF	Natural rubber/TEF Butyl/PTFE	Red Rubber/PTFE	Silicone/PTFE	Silicone/PTFE	Silicone/PTFE, pre-slit septa	Silicone/PTFE	PTFE/silicone/PTFE



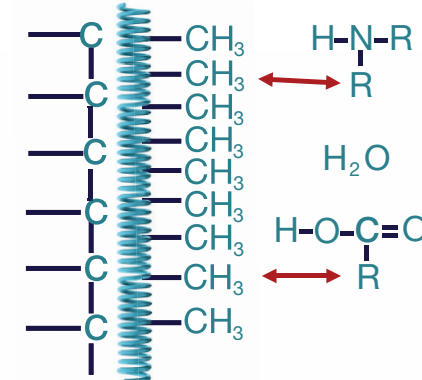
These are just a few examples of our cap and septa colors. Explore our full range available in the SureSTART portfolio.

Surface effects of plastic and glass

Plastic (Polypropylene)

A plastic surface is non-polar and has no hydrate cover, but still surface effects. Non-polar interactions may lead to unpredictable adsorption, as large biological molecules are able to invert surface polarity, depending on the environment.

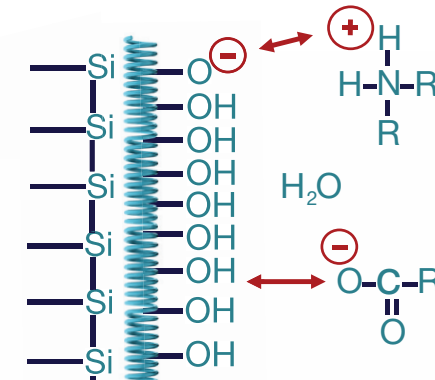
Polypropylene plastic vials are lightweight, shatter-resistant, and provide good chemical resistance for aqueous solutions, but may not be suitable for all organic solvents.



Glass

Autosampler vials are manufactured from first hydrolytic class glass. The glass quality and composition decides, if a sample might be adsorbed due to polar interactions or to chelating effects of glass components. The difference is based in the composition and content of "side-ingredients." These differences are the reason for differing adsorption effects for samples.

Glass vials offer excellent chemical resistance and are suitable for a wide range of solvents. Clear glass vials are ideal for visual inspection, while amber glass vials protect light-sensitive samples.



Vial selection

In this section, you can easily compare and match your vials and inserts by material and type with the illustrations* below. Our SureSTART vials are available in packs of 100, 1,000, and 5,000. We offer various kit options, including HPLC/GC, PFAS, MSCERT, MSCERT+, TOC, SPEC.CERT, and EPA. Scan the QR code to explore the full SureSTART vial selection and to learn more about our chromatography products.



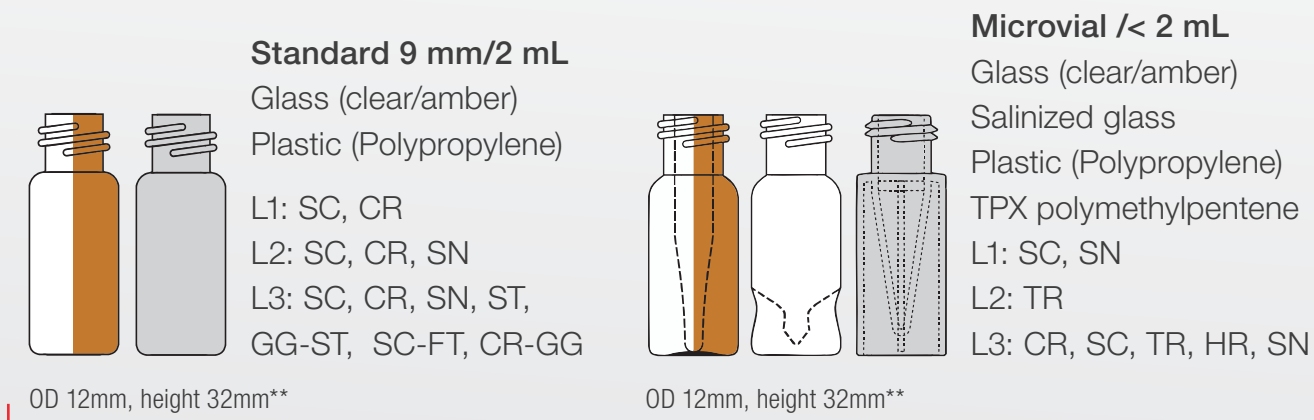
LEGEND

SC = Screw top
CR = Crimp top

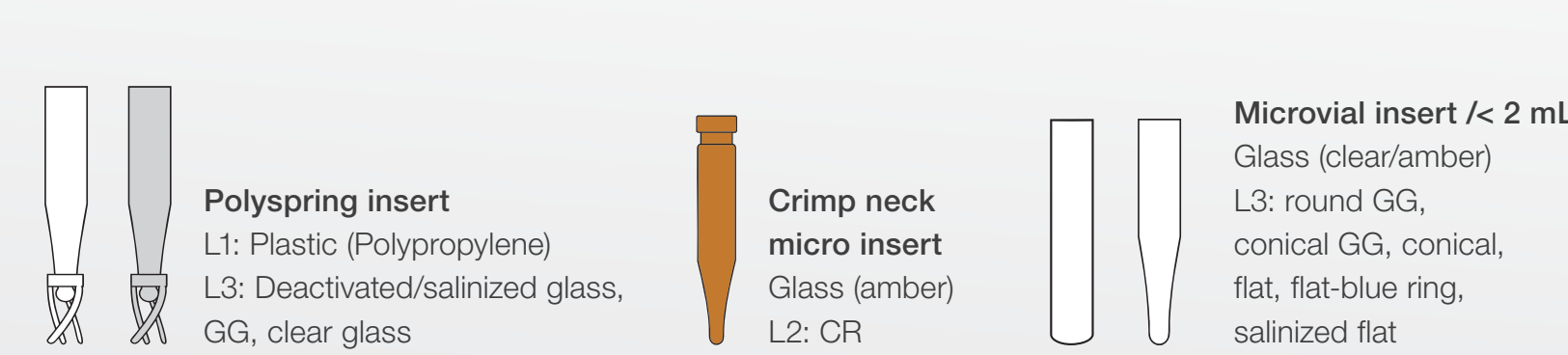
SN = Snap top
TR = Total recovery

HR = High recovery
ST = SureSTOP

FT = Fused insert
GG = GOLD-grade glass



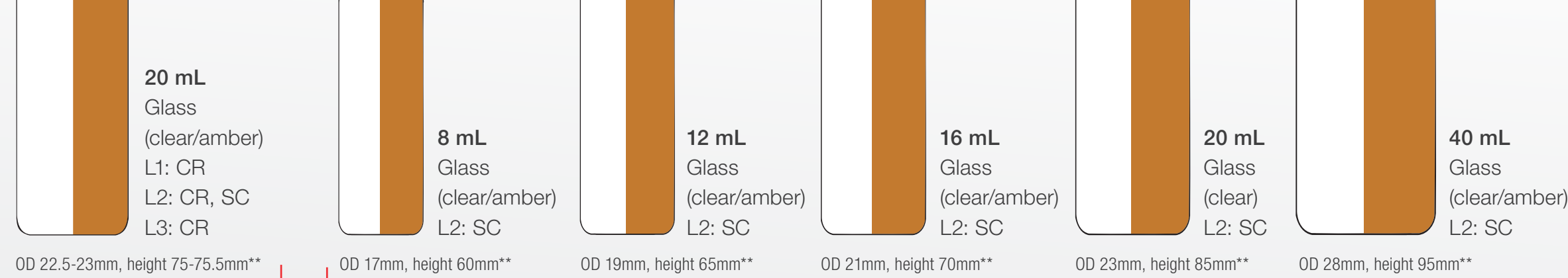
Standard and micro vials



Vial inserts



Headspace vials



EPA certified vials

* The vial illustrations are as close to their actual size as possible. There may be slight discrepancies due to the printing. Please contact your local sales representative for any questions concerning vial size.
** Dimensions of the vials will vary slightly in size based on the neck option (i.e. crimp vs screw). The vial illustrations are only showing one type of neck design for reference as there are other options available.