



# Product Brief

## **Micro+™ Vials**

For Small Volumes with Convenience

### **Limited Sample but need the convenience of a standard vial.**

Has your analysis been limited by the amount of sample you have available?

Have you ever run out of sample on your final injection?

Has your last drop of sample remained unattainable in the bottom of your vial?

### **What you require is the Micro+™ solution.**

The solution will depend on the original sample volume and the sampler set-up. Many autosamplers will have extraction needles that enter the vial and stop at a fixed position. They will leave any sample that lies below their inlet port. This is a particular issue with side entry needles such as used on some version of the Waters Alliance sample processors. This is partly overcome by a precise specification for vial base thickness that allows consistent positioning of a low volume fixed insert.



03-FIRV

### **What does Micro+™ mean?**

The Micro+™ vials have a low volume insert permanently fused into the external holder to give a standard 12mm x 32mm external dimension. This makes the vials compatible with the widest range of autosamplers and sample handling systems without having to change racks or injectors. As the needle extracts at a fixed depth it extracts from a fixed insert that collects the residual liquid sample. This allows the small volume to concentrate into the base of the vial, reducing the amount left to a few microliters.

### **Why are tapered inserts used?**

The taper on such vials also forms a reservoir and the depth of only a few tens of microliters is enough to allow a standard needle position to be used. The Micro+™ range of Chromacol vials have fixed tapered inserts to give almost complete recovery of liquid sample.

### **Why don't we just use small vial?**

Chromacol has a most extensive range of micro sampling vials. With total volumes down to 100uL these are used when the total volume is small and the injection volume may be a few microliters. However if sample is to be concentrated down it requires transfer between vials with possible problems of sample loss and adsorption.



09-FIV

### **What are the residual volumes that will be left in typical vials?**

These volumes will depend on the autosampler setup and also the sampling needle type. The following table summarizes the expected volumes that would be left in the Micro+™ vials compared to standard 2mL vials.



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## Residual Volume for different setup.

Vial Type	Maximum Volume (mL)	Residual Volume Position A $\mu$ L	Residual Volume-Position B $\mu$ L	Residual Volume-Position C $\mu$ L
2mL Autosampler Vial	1.8	157.10	78.55	39.28
03-Fused Insert	0.3	9.8	4.9	2.5
09-Fused Insert	0.9	8.3	4.2	2.1

## % Recovery at different setup.

Vial Type	A	B	C
2mL Autosampler Vial	91.28	95.65	97.83
03-Fused Insert	97.23	98.36	98.98
09-Fused Insert	99.01	99.50	99.76

Position A      2mm from base      Position B      1mm from base      Position C      0.5mm from base

For larger volumes the Micro+™ vials including the 03-FIV and 09-FIV give over 99.5% recovery even when not set at optimal needle depth.

For pre-concentration the 09-Fused Insert vials may be used depending on the original sample volume.



## Ordering

Chromacol Part Number	Description	Cap Compatibility
03-FIV	0.3mL Crimp Top Vial - Clear - Micro+™	11mm crimp seals 11-AC
03-FISV	0.3mL Screw Top Vial - Clear - Micro+™	9mm screw caps (robotic) 9-SC
03-FIRV	0.3mL Snap Cap Vial - Clear - Micro+™	11mm snap caps 11-PSN
03-FIV(A)	0.3mL Crimp Top Vial - Amber - Micro+™	11mm crimp seals 11-AC
03-FISV(A)	0.3mL Screw Top Vial - Amber - Micro+™	9mm screw caps (robotic) 9-SC
03-FIRV(A)	0.3mL Snap Cap Vial - Amber - Micro+™	11mm snap caps 11-PSN
09-FIV	0.9mL Crimp Top Vial-Clear-Micro+™	11mm crimp seals 11-AC
09-FISV	0.9mL Screw Top Vial-Clear-Micro+™	9mm screw caps (robotic) 9-SC

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