

## Suppression of ghost peaks in gradient analysis

Mobile phase cleaner for HPLC

# Ghost Trap DS



The causes of ghost peaks are many, but often result from impurities in mobile phases.

The Ghost Trap DS\*, co-developed with Daiichi Sankyo Co., Ltd., realizes shorter analysis time during method development and impurities analysis by adsorbing impurities effectively in the mobile phase.

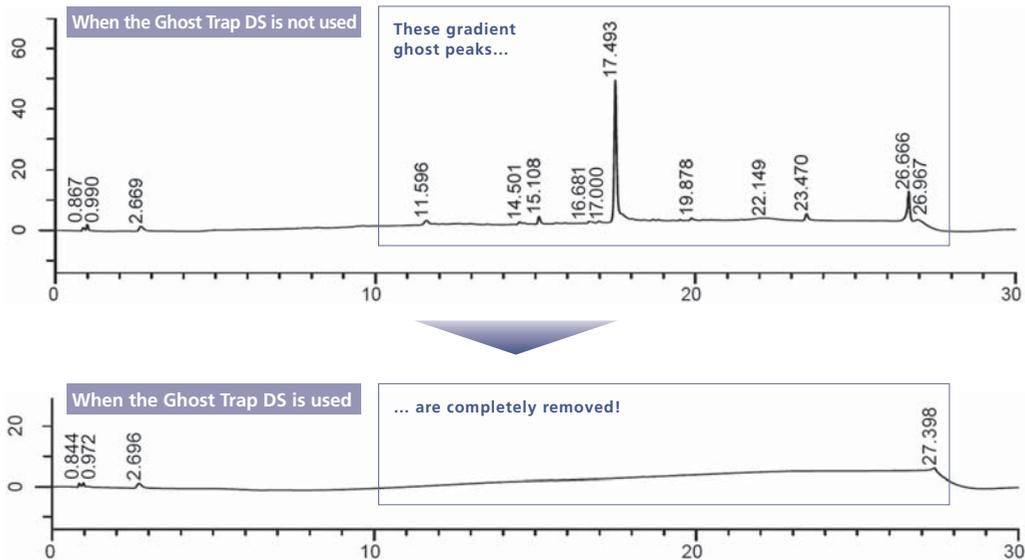
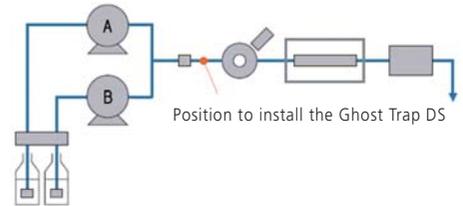
The Ghost Trap DS is applicable for the removal of impurities in organic solvents, and is efficient in the gradient analysis of the reversed phase condition.

\* DS: Abbreviation of Daiichi Sankyo (D) and Shimadzu (S)

### Consistently traps impurities, even in organic solvents

A major feature of the Ghost Trap DS is the ability to remove impurities even in organic solvents. When the Ghost Trap DS is installed between the gradient mixer and autosampler in reversed phase gradient analysis, it can trap impurities from the piping and gradient mixer in addition to those from the mobile phase.

The example below shows that it can effectively trap impurities in mobile phase, when the Ghost Trap DS is installed just downstream of the gradient mixer as displayed in the figure on the right.



Column: ODS column  
 Mobile phase: A: 25 mM Phosphate (Potassium) buffer solution pH 4.0 /Acetonitrile = 9/1  
 B: Water/Acetonitrile = 1/9  
 Flow rate: 0.65 mL/min  
 Oven: 45 °C  
 Detection: UV 210 nm

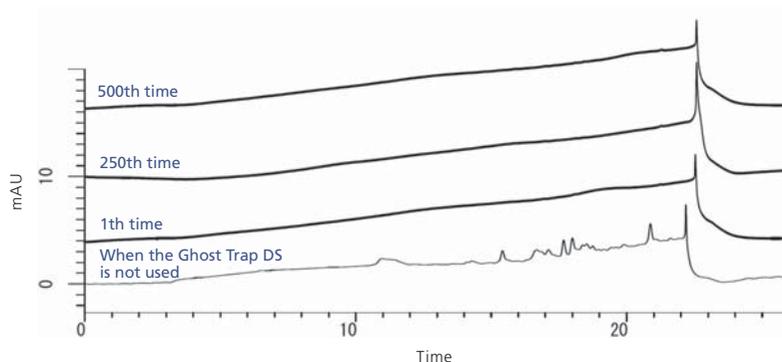
Example of removing ghost peaks by Ghost Trap DS (The data is provided by Daiichi Sankyo Co., Ltd.)

## No performance degradation even after performing analysis 500 times (equivalent to 250 hours)\*<sup>1</sup>

The example below shows a baseline after gradient analysis is repeated 500 times. When compared against a case where the Ghost Trap DS is not used, it becomes clear that ghost peaks are removed by using it. Also, no ghost peak is seen in either the first or 500th analysis. The test result indicates that the Ghost Trap DS can hold trapped impurities and has enough holding capacity to be durable for long-term analyses.

### Analytical conditions

System: High-pressure gradient system  
 Column: ODS column  
 Mobile phase: A: Acetonitrile  
 B: Water  
 Gradient: B 10% (0min) → 90% (20min)  
 Flow rate: 0.4 mL/min  
 Oven: 40 °C  
 Detection: UV 210 nm  
 Ghost Trap DS: 20 mmL. × 4.0 mmI.D.  
 Connection to Ghost Trap DS just after the gradient mixer



## Lineup

Item	P/N	Description	Dimensions	Internal volume * <sup>2</sup>	Pressure
Ghost Trap DS	228-59921-91	Two cartridges	30 mmL. × 7.6 mmI.D.	Approx. 700 µL	35 MPa
	228-59921-92	Two cartridges and one holder			
	228-59921-93	Two cartridges	20 mmL. × 4.0 mmI.D.	Approx. 150 µL	
	228-59921-94	Two cartridges and one holder			

\*<sup>1</sup> The life of the product varies according to analysis conditions such as the mobile phase used. The product may deteriorate earlier than the durability test result shown above.

\*<sup>2</sup> When the product is installed downstream of the gradient mixer or the junction of the pumps, there will be a delay volume equivalent to the internal volume during gradient analysis.

\* When a mass spectrometer is used as the detector, the product may cause bleed noise.

\* In analysis using an ion-pairing reagent, the ion-pairing reagent may be held by the product, influencing the retention time or peak shape.

\* Before connecting an analytical column, be sure to thoroughly clean the flow path attached to the product with the mobile phase (around the final concentration for gradient analysis).

\* Please understand that all impurities are not necessarily removed.



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