

Durability of Packings

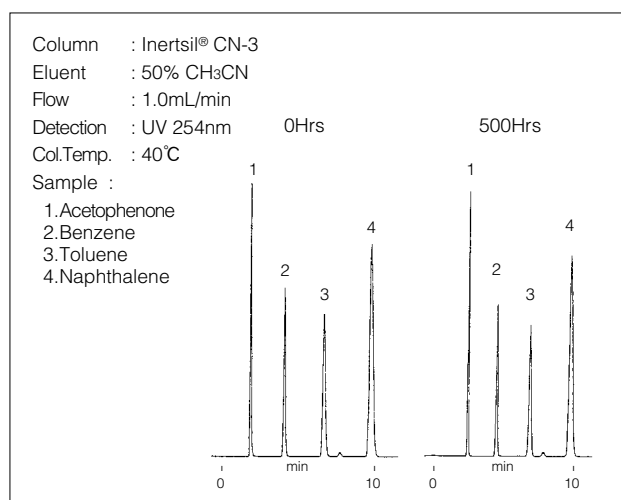
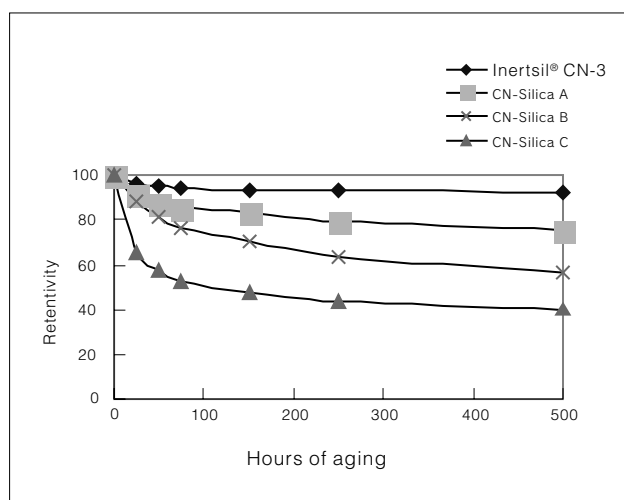
The durability of silica based reversed-phase packing materials depends on the density, the chain length and the chemical nature of the bonded phase. Silica-gel dissolves in alkaline solution. In the acidic solution, although silica-gel itself is stable, the chemical bonding between Si and O in the chemical modification is hydrolyzed and

the reversed-phase packing materials loses the bonded phase. Advanced silica synthesis methods and bonding techniques and extended the useful pH range for silica-based columns. For quality control of column lifetime, the packing materials are exposed to the following aging tests.

Durability to Acidic Condition

The reversed phase packing materials are purged with 0.1% trifluoroacetic acid aqueous solution at pH 2.0 for 500hrs at a flow rate 1.0 mL/min and at ambient tempera-

ture. The chromatograms before and after the aging are shown below. There is almost no difference between the two chromatograms.



Durability to Alkaline Condition

The reversed phase packing materials are purged with alkaline solution of pH 9.0 for 500hrs at a flow rate 1.0 mL/min and at ambient temperature. The chromatograms

before and after the aging are shown below. There is almost no difference between the two chromatograms.

