


series	cap color	membrane	pore size	part #
eXtremelFV®		PVDF	0.45µm	85541

## Analysis of Nitrosamines in Tobacco

### Introduction

Tobacco-specific nitrosamines (TSNA) are a group of carcinogens found only in tobacco products. They are formed from nicotine and related alkaloids during the production and processing of tobacco and tobacco products. In recent years due to their carcinogenic properties, efforts have been made to reduce TSNA levels in tobacco products. The desired goal of this investigation is to develop a sensitive, high-throughput method to monitor TSNA levels in tobacco and tobacco products. This method describes a simple robust sample preparation utilizing the Thomson Filter Vials for in-vial filtration: N'-nitrosanornicotine (NNN), N'-nitrosoanatabine (NAT), N-nitrosoanabasine (NAB), 4-(Methylnitrosamino)-1-(3-pyridyl)-1-butanol (NNAL) and 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone (NNK).

### Prep

- 0.25g of unburned/smokeless tobacco sample
- Extracted with 100mM ammonium acetate solution, filtered with eXtremelFV® PVDF 0.45 µm

### Equipment

#### HPLC

**Injection Volume:** 5 µL

**Column:** Waters® Xterra MS C18, 50x4.6mm, 5µm

**Aqueous phase:** 5mM ammonium acetate in HPLC water

**Organic Phase:** 5mM ammonium acetate in 95/5 acetonitrile/water.

#### Gradient

Time [min]	Organic %
0	5
1	5
2	35
5	35
6	5
8	5

**Flow rate:** 1mL/min

**Temperature:** 60°C

**Detection:** MS/MS

Analyte	Ion pair Q1/Q3 (amu)
N-Nitrosoanabasine (NAB)	192/162
N-Nitrosoanatabine (NAT)	190/160
N-Nitrosanornicotine (NNK)	208/122
4-(Methylnitrosamino)-1-(3-pyridyl)-1-butanone (NNN)	178/148
4-(Methylnitrosamino)-1-(3-pyridyl)-1-butanol (NNAL)	210/180

