

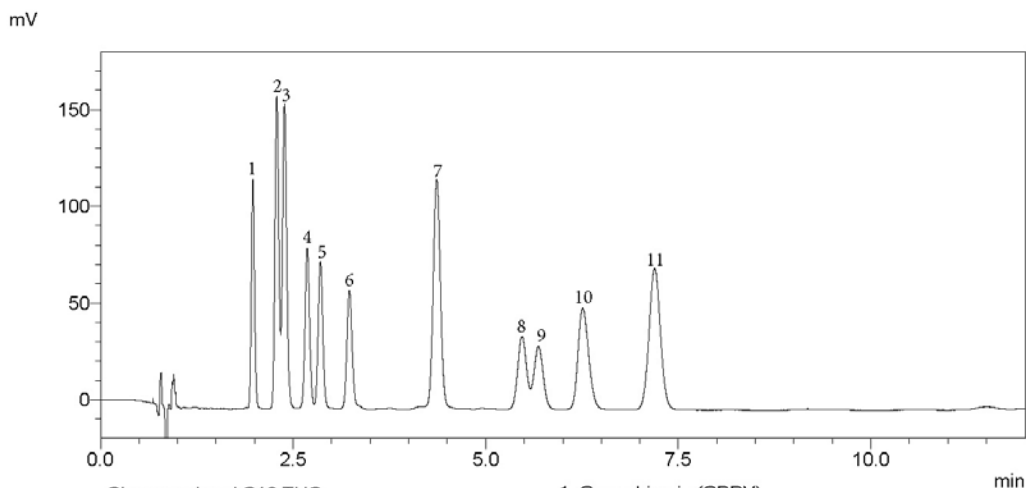
# APPLICATION NEWS

## Chromegabond C18 THC

- Rapid determination of  $\Delta$ -9-THC,  $\Delta$ -8-THC and THCA
- Robust column technology
- Separation is performed using isocratic mobile phase conditions which is easily transferable between instruments and labs.

It is critical that cannabis oils, extracted from cannabis or hemp be analyzed for their THC/THCA content during the CBD oil concentrate production and distribution. Governmental authorities have set strict limits on the maximum THC/THCA content for CBD oil concentrates. As a result of these regulations CBD oil must be analyzed for THC/THCA before release.

In order to tackle this analysis challenge, we have developed a column, Chromegabond C18 THC for the rapid determination of  $\Delta$ -9-THC,  $\Delta$ -8-THC and THCA. At ES Industries we have developed products on a variety of particle sizes from 1.8 $\mu$ m to 20 $\mu$ m; however, for Chromegabond C18 THC we have settled on 5 $\mu$ m particle size. The use of the 5 $\mu$ m particle allows the column to be used on most standard HPLC systems including old systems without modification of internal tubing diameters, injection valve or detector cells. In addition, the columns based on 5 $\mu$ m particles are generally more cost effective and robust than columns based on smaller particle sizes.



Chromegabond C18 THC  
150 X 4.6mmID 5 $\mu$ m  
Catalog # 1352X1-C18-THC

Mobile Phase : 75% Acetonitrile / 25% Water  
0.1% Formic Acid  
10mM Ammonium Formate

Flow Rate : 2.0mL/min  
UV Detection : 254nm  
Oven Temperature : 30°C

1. Cannabivarin (CBDV)
2. Cannabidiolic acid (CBDA)
3. Cannabigerolic acid (CBGA)
4. Cannabigerol (CBG)
5. Cannabidiol (CBD)
6. Tetrahydrocannabivarin (THCV)
7. Cannabinol (CBN)
8.  $\Delta$ 9-Tetrahydrocannabinol ( $\Delta$ 9-THC)
9.  $\Delta$ 8-Tetrahydrocannabinol ( $\Delta$ 8-THC)
10. Tetrahydrocannabinolic acid (THCA)
11. Cannabichromene (CBC)

A chromatogram of an 11-component cannabinoid mixture is shown above. This mixture is analyzed in less than 8 minutes and  $\Delta$ -9-THC,  $\Delta$ -8-THC and THCA are well resolved from the other cannabinoids in the mixture. The determination of total THC content for a given sample would be based on the levels of  $\Delta$ -9-THC,  $\Delta$ -8-THC and THCA shown in the chromatogram. In the chromatogram there are also all other major cannabinoids separated providing information for total CBD composition.

Chromegabond C18 THC provides for a cost effective and robust solution for the determination of total THC content for CBD oil concentrates.