

Explore our newest method development application focusing on the determination of residual solvents and terpenes in cannabis by GC-FID.

Below is a snippet from our recently published technical note by Ramkumar Dhandapani, Ph.D. on the analysis of residual solvents and terpenes in cannabis by GC-FID using Zebron™ ZB-624plus™ GC Column.

Scroll down to the bottom to see the full application.

“While legalization of medical and recreational marijuana is proliferating more and more throughout North America, the use of cannabis remains illegal on a federal level in the United States. As such, the range of volatile contaminants, such as residual solvents, have diverse ranges of regulatory guidance on a state by state basis. In addition, terpenes account for the flavor and aroma of cannabis and its profiling via GC-FID is a very important tool in identifying and quantifying terpenes in cannabis products for both quality and branding purposes.

624-type phases are common for pharmaceutical residual solvents due to their excellent

selectivity for USP General Chapter <467> residual solvents, which are generally consistent with typical residual solvents to examine in cannabis and cannabis products. Some unique challenges with cannabis residual solvents arrive from some additional light solvents, like butane and isobutane that are difficult to retain with the typical 624 selectivity, as well as some heavier terpenes that one might want to quantify together, or, even if analyzing separately, would still have to elute from the column at a higher temperature than a traditional 624-type phase is stable to.

Provided in this technical note is a method for both residual solvents and terpenes in one column. The sample has both light and heavy boiling analytes. While common practice is to use a traditional 624 selectivity for residual solvents and go for a low polar 5 % phenyl phase with a thin film for terpene analysis, here we utilized the versatile 624 selectivity and high temperature limit of the Zebron ZB-624plus to provide a one column solution to cannabis residual solvent and terpenes testing via GC-FID.”

To read the rest of the application, click the image below!

APPLICATIONS

Determination of Residual Solvents and Terpenes in Cannabis by GC-FID using Zebron™ ZB-624PLUS™ GC Column

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Introduction

While legalization of medical and recreational marijuana is proliferating more and more throughout North America, the use of cannabis remains illegal on a federal level in the United States. As such, the range of volatile contaminants, such as residual solvents, have diverse ranges of regulatory guidance on a state by state basis. In addition, terpenes account for the flavor and aroma of cannabis and its profiling via GC-FID is a very important tool in identifying and quantifying terpenes in cannabis products for both quality and branding purposes.

624-type phases are common for pharmaceutical residual solvents due to their excellent selectivity for USP General Chapter <467> residual solvents, which are generally consistent with typical residual solvents to examine in cannabis and cannabis products. Some unique challenges with cannabis residual solvents arrive from some additional light solvents, like butane and isobutane that are difficult to retain with the typical 624 selectivity, as well as some heavier terpenes that one might want to quantify together, or, even if analyzing separately, would still have to elute from the column at a higher temperature than a traditional 624-type phase is stable to.

Experimental Conditions Residual Solvents



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Click the image to find the full method development, “Determination of Residual Solvents and Terpenes in Cannabis by GC-FID using Zebron ZB-624PLUS GC Column”

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