Application Note RAD9040

View on rigaku.com

COMBATING THE FENTANYL EPIDEMIC USING HANDHELD 1064 nm RAMAN

Introduction

As synthetic opioid overdose deaths continues to rise, the use of fentanyl and its analogues in legacy drugs are posing significant danger to communities, as well as first responders. Fentanyl has become popular in illicit drug sales by itself, or as a cutting agent in heroin, cocaine, and methamphetamine. The lethal dose of pure fentanyl is estimated at 2 milligrams for a typical adult (Reference: U.S. DEA). Responders encounter fentanyl in various forms, such as powder, tablet or liquid and risk potential fatal exposure if swallowed or inhaled. They are faced with this problem at our borders, in mailrooms, and on the streets.

Avoiding Exposure to Fatal Opioids

Due to the high risk of fatal exposure, there is no time for outdated testing techniques of these controlled substances. The use of field-ready analytical techniques that can provide presumptive test results is critical in response to potential fentanyl use. In recent years, handheld Raman spectrometers that provide chemical identification are being used more frequently by law enforcement, border protection (at the border, as well as in international mail facilities), and first responders as a way to identify suspicious threats. Recognized as a Class A analytical technique for presumptive fi eld testing by the U.S. Scientific Working Group for the Analysis of Seized Drugs (SWGDRUG), Raman spectroscopy provides a chemical fingerprint that is legally defensible in court. Even more importantly, handheld Raman analyzers provide a means for the officer to scan through packaging, reducing the risk of exposure to these dangerous synthetics.

Designed for the non-scientist with results that are easy to interpret, the Rigaku portfolio of 1064nm-based handheld Raman analyzers provide fentanyl analysis for the most difficult sample types. By providing the ability to analyze bulk or trace amounts, through colored packaging, or even in mixtures, the user will always receive fast results.

Typically larger, bulk amounts of these drugs are crossing borders and smaller, even trace amounts are making its way onto our streets. It can be difficult for one analytical tool to cover such wide application needs, until now. The Rigaku CQL™ Narc-ID™ 1064 nm Raman analyzer is the first field-ready handheld Raman tool to provide both bulk and trace analysis of

narcotics in seconds. Users benefit from reduced fluorescence interference of the 1064 nm Raman advantage when scanning through packaging or colored substances, while also having the ability to detect residues or non-visible amounts easily using the QuickDetect™ automated colorimetrics functionality - thus providing the ability to analyze more. Law enforcement officials are able to stay ahead of the threats posed by the rapid proliferation of fentanyl variants by easily adding new chemicals to the library as rapidly as they occur.

Result screens from the Rigaku CQL Narc-ID analyzer. The third image is an example of a result using QuickDetect Mode for non-visible sample analysis.

Download PDF


HANDHELD CONFIDENCE.

Rigaku Analytical Devices

APPLICATION NOTE

COMBATING THE FENTANYL EPIDEMIC USING HANDHELD 1064 nm RAMAN

Avoiding Exposure to Fatal Opioids

As synthetic opioid overdose deaths continues to rise, the use of fentanyl and its analogues in legacy drugs are posing significant danger to communities, as well as first responders. Fentanyl has become popular in illicit drug sales by itself, or as a cutting agent in heroin, cocaine, and methamphetamine. The lethal dose of pure fentanyl is estimated at 2 milligrams for a typical adult (Reference: U.S. DEA). Responders encounter fentanyl in various forms, such as powder, tablet or liquid and risk potential fatal exposure if swallowed or inhaled. They are faced with this problem at our borders, in mailrooms, and on the streets.

Due to the high risk of fatal exposure, there is no time for outdated testing techniques of these controlled substances. The use of field-ready analytical techniques that can provide presumptive test results is critical in response to potential fentanyl use. In recent years, handheld Raman spectrometers that provide chemical identification are being used more frequently by law enforcement, border protection (at the border, as well as in international mail facilities), and first responders as a way to identify suspicious threats. Recognized as a Class A analytical technique for presumptive field testing by the U.S. Scientific Working Group for the Analysis of Seized Drugs (SWGDRUG), Raman spectroscopy provides a chemical fingerprint that is legally defensible in court. Even more importantly, handheld Raman analyzers provide a means for the officer to scan through packaging, reducing the risk of exposure to these dangerous synthetics.

Designed for the non-scientist with results that are easy to interpret, the Rigaku portfolio of 1064nm-based handheld Raman analyzers provide fentanyl analysis for the most difficult sample types. By providing the ability to analyze bulk or trace amounts, through colored packaging, or even in mixtures, the user will always receive fast results.

Typically larger, bulk amounts of these drugs are crossing borders and smaller, even trace amounts are making its way onto our streets. It can be difficult for one analytical tool to cover such wide application needs, until now. The Rigaku CQL™ Narc-ID™ 1064 nm Raman analyzer is the first field-ready handheld Raman tool to provide both bulk and trace analysis of narcotics in seconds. Users benefit from reduced flourescence interference of the 1064 nm Raman advantage when scanning through packaging or colored substances, while also having the ability to detect residues or non-visible amounts easily using the QuickDetect™ automated colorimetrics functionality - thus providing the ability to analyze more. Law enforcement officials are able to stay ahead of the threats posed by the rapid proliferation of fentanyl variants by easily adding new chemicals to the library as rapidly as they occur.

Result screens from the Rigaku CQL Narc-ID analyzer. The third image is an example of a result using QuickDetect Mode for non-visible sample analysis.

Rigaku Analytical Devices, Inc.

Related products

CQL Gen-ID

A cost-effective solution for departments looking for target ed chemical threat analysis

CQL Max-ID

Offers features and benefits that maximize chemical threat analysis in safety and security applications

CQL Narc-ID

Provides presumptive identification of narcotics, precursor chemicals, and cutting agents