



## TruNarc™ Delta and Tau libraries: rapid identification of narcotic threats for law enforcement and border protection

### Overview

As illicit narcotic manufacturers and distributors race to stay ahead of law enforcement agencies and regulations, officers need tools to identify substances in the field. Rapid, on-site identification of chemicals and mixtures enables officers to combat the spread of narcotic use and keep drugs off our streets. The Thermo Scientific™ TruNarc™ Delta and Tau analyzers, equipped with new, expanded spectral libraries, provide instant and precise identification of over 1,200 narcotics, precursors, cutting agents, and emerging threats. These essential tools in the fight against illegal narcotics strengthen interdiction efforts, improve officer safety, and support better public health outcomes.

At Thermo Fisher Scientific, we continually work to improve the effectiveness of our products. To achieve this goal, our scientists review emerging threat updates from national organizations such as the Center for Forensic Science Research and Education (CFSRE) and the National Forensic Laboratory Information System (NFLIS) (see Resources 2 and 3). The Trend Reports, Bulletins, and other publications by these organizations help guide our library updates. As of 2025, the Thermo Scientific™ TruNarc™ Delta and Tau chemical libraries contain more than 90% of all narcotics that had been reported in at least five instances in the US in the past year, as shown in Figure 1. Library updates help ensure that officers can safely identify emerging threats such as novel chemical derivatives and hazardous cutting agents.

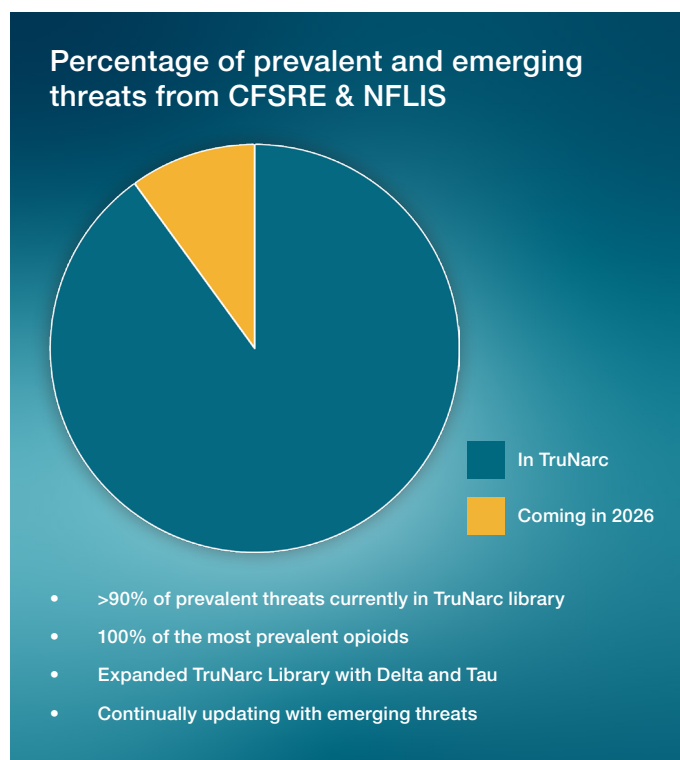


Figure 1. Overview of library alignment with trending and emerging narcotic threats

These libraries are categorized into ten main chemical groups: fentanyl compounds, nitazenes, synthetic cannabinoids, stimulants, synthetic cathinones, opioids, steroids, hallucinogens, benzodiazepines, and others. The 'others' category includes common cutting agents, precursors, and adulterants. These chemical group categories and their relative proportions in the TruNarc Delta and Tau libraries are displayed in Figure 2.

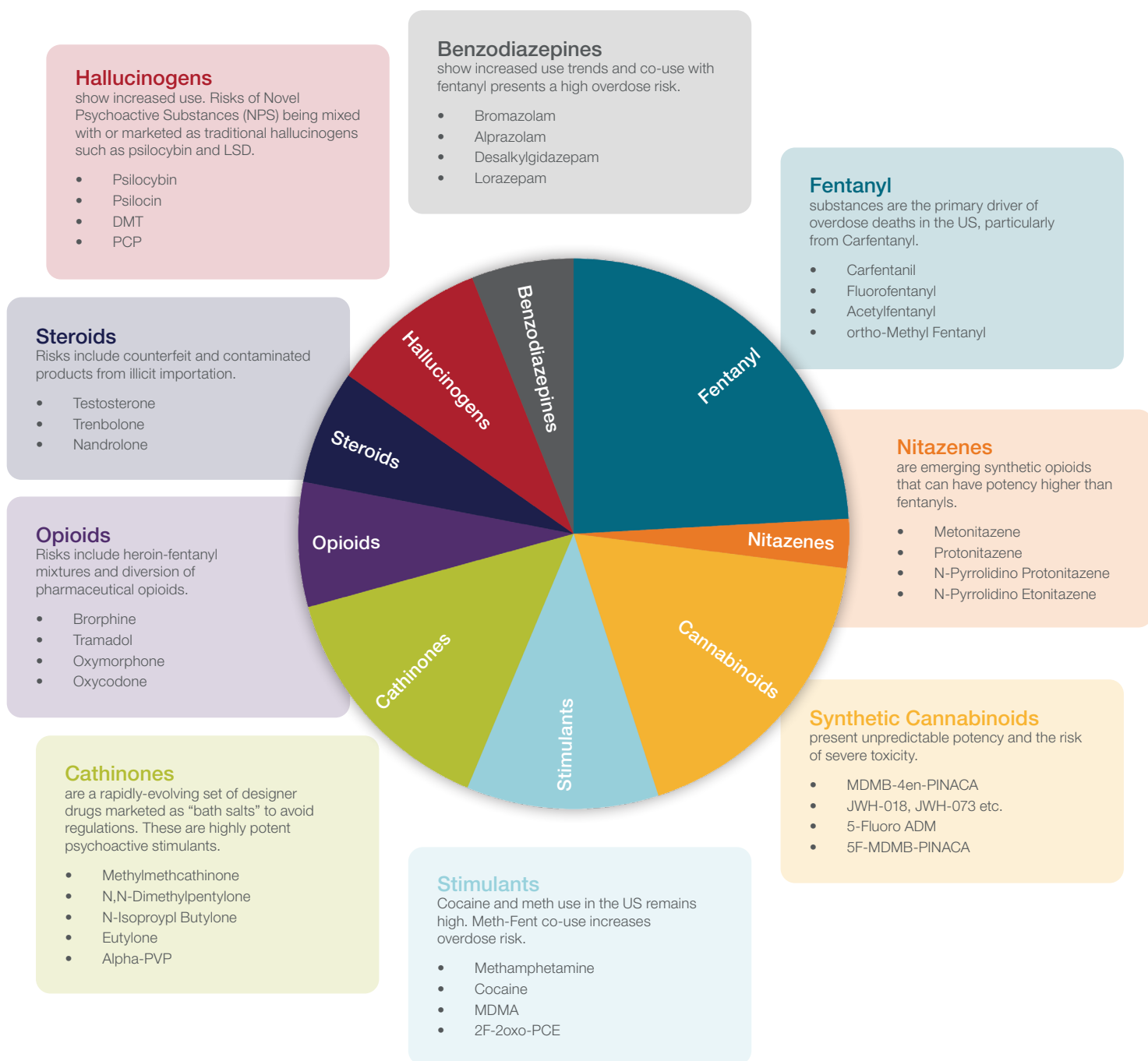


Figure 2. Breakdown of library by categories with descriptions and examples

## Category - other chemicals

TruNarc libraries offer coverage for a wide range of cutting agents, precursors, and adulterants commonly found in street samples. Cutting agents are used to bulk up samples and boost seller margins. Precursors are used to manufacture illicit drugs and can be found in large quantities when an illegal lab is discovered. Adulterants mimic and enhance the effects of drugs, increasing the user's high. Since these substances are often mixed into samples, some results show the message "Cannot rule out presence of narcotics." These substances pose ongoing risks and enforcement challenges, as some are legal and can be purchased by consumers. Some common items in the other category include:

- Acetaminophen
- Aspirin
- Sugars, such as lactose or mannitol
- Lidocaine
- Ephedrine
- Phenylacetic acid
- Xylazine

## Field-deployable efficiency and safety

For the vast majority of analyses, TruNarc analyzers require minimal sample handling and no direct contact with substances, which greatly boosts officer safety. By utilizing non-destructive Raman spectroscopy, TruNarc rapidly matches samples against its extensive Delta and Tau libraries. This provides immediate and accurate results, streamlining field operations, improving interdiction efficiency, and significantly reducing laboratory processing burdens.

For particularly challenging samples, containing <10% by weight of the most potent narcotics, the updated Type H2 Kit offers enhanced detection limits with minimal sample handling. To learn more about this product feature, please see our Tech Note, "Using the Type H2 Kit with the TruNarc Delta Analyzer".<sup>1</sup> The optimized design of the new Type H2 Kit enables detection of fentanyl at "street-relevant" levels as low as 1-2% in mixtures with many of the most common cutting agents.<sup>2</sup>

In addition to the expansive chemical library and ability to adapt to the emerging needs of law enforcement, TruNarc also offers the reliability of our trusted p-value detection algorithms. Recently published field studies by the Dutch police report a true positive rate of over 97% and a false positive rate of 0%.<sup>3</sup> This accuracy and reliability results from creating our chemical libraries in our DEA-licensed laboratory using certified reference materials from ISO 17025 and ISO 17034 certified suppliers.

## Conclusion

TruNarc Delta and Tau spectral libraries are essential frontline tools that enable quick and precise identification of a wide range of narcotics encountered today. This empowers law enforcement, customs, and border protection agencies with the critical intelligence needed to take effective action, keep officers safe, and enhance public health protections.

## Resources

DEA Fact Sheets

[dea.gov/factsheets](https://dea.gov/factsheets)

Center for Forensic Science Research and Education (CSFRE)

[cfsre.org](https://cfsre.org)

National Forensic Laboratory Information System (NFLIS)

[nflis.deadiversion.usdoj.gov](https://nflis.deadiversion.usdoj.gov)

## References

1. Technical Note: [Using the Type H2 Kit with the TruNarc Delta Analyzer](#)
2. Technical Note: [Advanced Low-Dose Accuracy with the Type H2 Kit for Thermo Scientific TruNarc Delta and TruNarc Tau Handheld Narcotics Analyzers](#)
3. Kranenburg, Ruben F., et al. "Performance evaluation of handheld Raman spectroscopy for cocaine detection in forensic case samples." *Drug testing and analysis* 13.5 (2021): 1054-1067.



 Learn more at [thermofisher.com/trunarc](https://thermofisher.com/trunarc)

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