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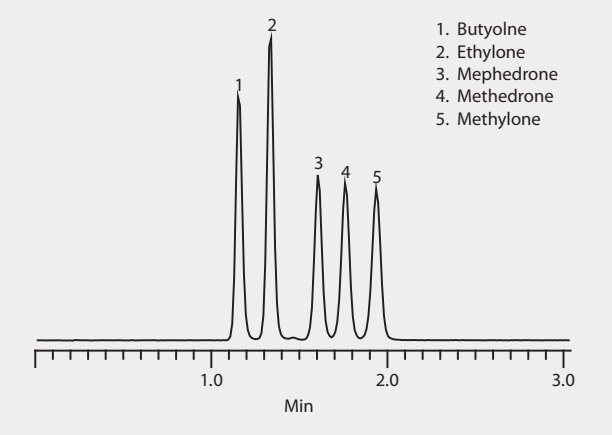
# LC/MS Analysis of Illicit Bath Salts on Ascentis® Express 2.7 µm HILIC, Fast Analysis

With the rapid development of unregulated designer and synthetic compounds, the field of illicit drug testing has recently been met with a changing environment. Of most concern has been the development of a class of phenethylamine and cathinone compounds being marketed as "bath salts," "jewelry cleaner," or "plant food." Forensic testing facilities often experience difficulty in testing these compounds due to the fact that they are not detected under normal ELISA testing methods; additional more specific LC/MS methods are necessary. The challenge for LC/MS detection of these particular bath salts resides in three sets of isobaric compounds that require chromatographic resolution for positive confirmation. For example, both butylone and ethylone have the same mono isotopic mass, making these compounds indistinguishable, even when using accurate mass time of flight TOF-MS. Efficient chromatographic separation is necessary for accurate quantitation of these compounds. The polar basic nature of the bath salts makes these compounds difficult to retain on traditional reversed-phase C18 and even polar embedded stationary phases, making them prime subjects for HILIC chromatographic separation. Shown here is the fast, high-resolution separation of nine synthetic bath salts on Ascentis Express HILIC. Reliable quantitation is achieved by using Cerilliant CRMs.

market focus . . . . . Forensics and Toxicology
column . . . . . Ascentis Express HILIC, 5 cm x 2.1 mm I.D., 2.7 µm particles (53934-U)
mobile phase . . . . . 5 mM ammonium formate in acetonitrile:water (95:5)
flow rate . . . . . 0.6 mL/min
column temp. . . . . 35 °C
detector . . . . . ESI(+), TIC 100 - 1000 m/z
sample . . . . . 1 µL
Application No. . . . . G005444




**Components**

Butylone hydrochloride solution (Cerilliant B-045)
Ethylone hydrochloride (Cerilliant E-071)
Mephedrone hydrochloride solution (Cerilliant M-138)
Methedrone hydrochloride solution (Cerilliant M-147)
Methylone hydrochloride (Cerilliant M-140)

**Related Products**

analytical column
Ascentis® Express HILIC, 2.7 Micron HPLC Column (Supelco 53934-U)
eluent
Acetonitrile (Fluka 14261)
Ammonium formate (Fluka 14266)
Water (Fluka 14263)
standard
Butylone hydrochloride solution (Cerilliant B-045)
Ethylone hydrochloride (Cerilliant E-071)
Mephedrone hydrochloride solution (Cerilliant M-138)
Methedrone hydrochloride solution (Cerilliant M-147)
Methylone hydrochloride (Cerilliant M-140)