Drug Enforcement Administration
Diversion Control Division
Drug & Chemical Evaluation Section

March 2025
DEA/DC/DOE

1-(1,3-BENZODIOXOL-5-YL)-2-(ETHYLAMINO)BUTAN-1-ONE (EUTYLONE)

(Street Names: "Bath salt," bk-EBDB)

Introduction:

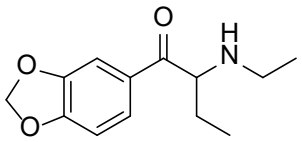
Eutylone is a designer drug of the phenethylamine class. Eutylone is a synthetic cathinone with chemical structural and pharmacological similarities to schedule I and II amphetamines and cathinones, such as 3,4-methylenedioxymethamphetamine (MDMA), methylone, and pentylone. Evidence indicates that eutylone, like other schedule I synthetic cathinones, is abused for its psychoactive effects.

Licit Uses:

Eutylone is not approved for medical use in the United States.

Chemistry:

The chemical name for eutylone is 1-(1,3-benzodioxol-5-yl)-2-(ethylamino)butan-1-one. The molecular formula is $C_{13}H_{17}NO_3$. The chemical structure of eutylone is shown below:



Pharmacology:

Based on the structure of eutylone, eutylone is predicted to cause stimulant-related psychological and somatic effects, similar to schedule I synthetic cathinones (e.g., methylone and pentylone) and schedule I and II substances (e.g., cocaine, methamphetamine, and MDMA). Adverse effects associated with synthetic cathinone abuse include agitation, hypertension, tachycardia, and death. Online forums discussed pleasant and positive effects of eutylone when used for recreational purposes.

In preclinical studies, eutylone has pharmacological effects on the central nervous system that are similar to those of schedule I or II substances (e.g., methylone, pentylone, cocaine, methamphetamine, and MDMA), which have high potential for abuse. In *in vitro* laboratory studies investigating the effects of drugs on monoaminergic systems, eutylone—similar to methylone, pentylone, methamphetamine, MDMA, and cocaine—binds to the dopamine, serotonin, and norepinephrine transporters and inhibited the reuptake of the monoamine neurotransmitters dopamine, serotonin, and norepinephrine, respectively. Methamphetamine, MDMA, methylone, and cocaine have been shown to increase one or more of the monoamine concentrations in the central nervous system, and these increases are thought to be involved in the pharmacological effects of these schedule I and II substances.

Effects reported by users of eutylone include warm tingling sensations, increased focus, changes in vision, euphoria, and an intense high. In general, synthetic cathinones have been reported to cause a number of stimulant-like adverse effects, including tachycardia, hypertension, hyperthermia, palpitations, hyponatremia, tremor, seizures, vomiting, sweating, headache, and rhabdomyolysis.

Illicit Uses:

Anecdotal reports of eutylone use note that individuals often use several smaller doses of 50 mg or lower repeatedly over a session totaling up to 200 mg. One user reported having effects lasting 8 hours after administration. Users have reported administering eutylone by oral, intravenous, and nasal routes.

Reported effects of synthetic cathinones—including eutylone—include euphoria, sense of well-being, increased sociability, energy, empathy, increased alertness, improved concentration, and focus.

User Population:

Eutylone, like other synthetic cathinones, is a recreational drug. Evidence indicates that the main users of eutylone, similar to schedule I synthetic cathinones and MDMA, are youths and young adults.

Illicit Distribution:

Law enforcement has encountered eutylone in the United States and around the world in Europe and Asia. The Drug Enforcement Administration's National Forensic Laboratory Information System (NFLIS) Drug database collects scientifically verified data on drug items and cases submitted to and analyzed by participating federal, state, and local forensic drug laboratories. NFLIS-Drug received over 12,600 reports of eutylone in 2020; over 1,700 in 2022; 645 in 2023; and 265 in 2024 (reports still pending). In total, NFLIS-Drug received over 33,000 reports of eutylone since its first report in 2014.

Control Status:

Eutylone is controlled in schedule I of the Controlled Substances Act.

Comments and additional information are welcomed by the Drug and Chemical Evaluation Section; Fax 571-362-4250, Telephone 571-362-3249, or Email DPE@dea.gov.