

## 1-(1,3-Benzodioxol-5-yl)-2-(ethylamino)butan-1-one (Eutylone) (Street Names: "Bath salt," bk-EBDB)

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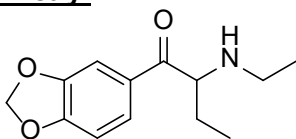
### Introduction:

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 to 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<sub>13</sub>H<sub>17</sub>NO<sub>3</sub>.

### Pharmacology:

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

Experimental evidence demonstrates that eutylone has pharmacological effects on the central nervous system that are similar to those of schedule I or II substances such as methylone, pentylone, cocaine, methamphetamine, and MDMA which have high potential for abuse. 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 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 eight 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 DEA's National Forensic Laboratory Information System (NFLIS) Drug database, which collects scientifically verified data on drug items and cases submitted to and analyzed by participating federal, state and local forensic laboratories in the United States, indicates that there were over 12,000 reports of eutylone in 2021, over 1,600 in 2022, and over 400 in 2023 (reports still pending). In total, there have been over 32,000 reports of eutylone to NFLIS-Drug since it was first reported 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](mailto:DPE@dea.gov).