Drug Enforcement Administration
Diversion Control Division
Drug & Chemical Evaluation Section

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FLUBROMAZOLAM

(Street Names: Liquid Xanax)

Introduction:

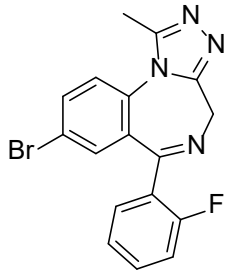
Flubromazolam is a designer benzodiazepine that is structurally similar to the class of drugs known as benzodiazepines. Benzodiazepines produce central nervous system (CNS) depression and are commonly used to treat panic disorders, insomnia, and anxiety. Flubromazolam is generally encountered as pills or tablets.

Licit Uses:

Benzodiazepines are widely prescribed drugs; however, flubromazolam does not currently have an accepted medical use in the United States.

Chemistry:

Flubromazolam is chemically known as 8-bromo-6-(2-fluorophenyl)-1-methyl-4*H*-benzo[*f*][1,2,4]triazolo[4,3-*a*][1,4]diazepine.
Flubromazolam is structurally similar to the benzodiazepine flubromazepam. Flubromazolam is composed of a benzene ring fused to a seven-membered 1,4-diazepine ring that is also fused to a 1,2,4-triazole ring. An alkyl methyl (–CH3) is attached at the 1-position of the triazole ring, a 2-fluorophenyl ring is attached at the 6-position of the diazepine ring, and a bromine is attached at the 8-position of the triazolobenzodiazepine structure. Flubromazolam has a molecular formula of $C_{17}H_{12}BrFN_4$ and a molecular weight of 371.21 g/mol. The structure of flubromazolam is shown below:



Pharmacology:

Flubromazolam, similar to schedule IV benzodiazepines (e.g., alprazolam, clonazepam, diazepam), binds to benzodiazepine receptors with high affinity and efficacy. Flubromazolam possesses CNS depressant effects, such as anxiolytic, anticonvulsant, sedative-hypnotic, and muscle relaxant effects. The recreational use of flubromazolam may result in prolonged, severe intoxication associated with coma, hypotension, and rhabdomyolysis (a breakdown of muscle tissue leading to release of dangerous protein into the bloodstream). Intoxication due to flubromazolam is characterized by excessive drowsiness, partial amnesia, and the inability to follow or participate in conversation.

Flubromazolam is a long-acting benzodiazepine. A single dose leads to two peaks in serum concentrations: the first at approximately 5 hours (7.4 ng/mL) after administration and the second after 8 hours (8.6 ng/mL). In a single-dose pharmacokinetic study in humans, 30 hours following flubromazolam ingestion, a re-emergence of sedative effects was observed.

According to a published case report in 2017, a study author (44 years old, weighing 75 kg) orally ingested a low dose (0.5 mg/day) of flubromazolam and experienced sedative-hypnotic effects, as well as muscle relaxant effects, 90 minutes following drug intake. Drowsiness occurred approximately 3 hours post-drug ingestion, which lasted for 5 hours. Similarly, in a case report published in 2019, a 36-year-old male experienced sedative-hypnotic effects and increased anxiety.

Illicit Uses:

Flubromazolam is generally abused for its sedative-hypnotic effects. The United Nations Office on Drugs and Crime (UNODC) Early Warning Advisory on Novel Psychoactive Substances (NPS) Toxicology Portal (Tox-Portal)—an online tool to collect toxicological and harm data associated with NPS use—has published biannual reports (Current NPS Threats) to identify most harmful NPS. In 2023, flubromazolam was the third most common benzodiazepine-type NPS reported in postmortem (n=17) and second most common in DUID (n=39) cases, alongside reports of its detection in drug-facilitated crime cases. In 2024, UNODC reported that benzodiazepine-type NPS continued to constitute the greatest number of NPS reported to the Tox-Portal across postmortem, DUID (68%), and clinical admission (56%) cases. More recently, the Centers for Disease Control and Prevention released “The Fentalog Study”, which utilizes data collected from 10 geographically diverse hospitals in 9 states across the United States. As of December 2024, the study tested 1,476 samples between February 2020 and August 2024; of these, 8% of blood specimens from suspected opioid-involved overdoses tested positive for illicit benzodiazepines.

User Population:

Flubromazolam is used as a recreational substance in the United States. This substance is abused by a broad range of groups, including youths, young adults, and older adults.

Illicit Distribution:

Flubromazolam can be purchased via the internet and at local retail shops. This substance has been identified in PEZ-like pills or tablets.

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 14 reports of flubromazolam in 2015. Annual reports steadily increased to 670 in 2021, then decreased each following year to 22 in 2024 (reports still pending).

Control Status:

Flubromazolam is controlled in schedule I of the Controlled Substances Act. At the 2021 Commission on Narcotic Drugs’ 64th session, the Commission decided to include flubromazolam in Schedule IV of the 1971 Convention on Psychotropic Substances.

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.