

## FLUBROMAZOLAM (Street Name: Liquid Xanax)

### Introduction

Flubromazolam is a triazole analogue of the designer benzodiazepine, flubromazepam. As a class of drugs, benzodiazepines produce central nervous system (CNS) depression and are commonly used to treat, panic disorders, anxiety and insomnia. The United States Food and Drug Administration has not approved Flubromazolam for therapeutic use.

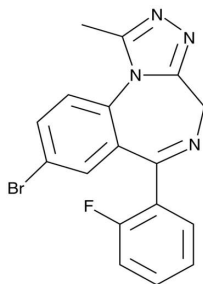
### Licit Uses

Flubromazolam does not currently have an accepted medical use in the United States.

### Chemistry

Flubromazolam (8-bromo-6-(2-fluorophenyl)-1-methyl-4H-benzof[*f*][1,2,4]triazolo[4,3-*a*][1,4]diazepine) is a triazole analogue of 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 (-CH<sub>3</sub>) is attached at the 1-position of the triazole ring, a 2-fluorophenyl ring is attached at the 6- position of the diazapine ring, and a bromine is attached at the 8-position of the benzene ring. Flubromazolam has a molecular formula of C<sub>17</sub>H<sub>12</sub>BrFN<sub>4</sub> and a molecular weight of 371.21 g/mol. The structure of flubromazolam is shown below:



### Pharmacology

Flubromazolam, similar to schedule IV benzodiazepines (such as alprazolam, clonazepam, diazepam), binds to the benzodiazepine receptors with high affinity and efficacy. Flubromazolam possesses central nervous system 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).

According to a published case report in which a 44 year-old investigator (weighing 75 kg) orally ingested a low dose (0.5 mg/day) of flubromazolam, sedative-hypnotic effects as well as muscle relaxant effects occurred 90 minutes following drug intake. Drowsiness occurred approximately three hours post-drug ingestion, and lasted for five hours. Intoxication due to flubromazolam is characterized by excessive drowsiness, partial amnesia and inability to follow or participate in conversation. Peak serum concentration of flubromazolam is

reached approximately 5 hours (7.4 ng/mL) after administration with a second peak occurring after 8 hours (8.6 ng/mL), making it a long-acting benzodiazepine. In a single-dose pharmacokinetic study in humans, 30 hours following flubromazolam ingestion, a re-emergence of sedative effects was observed.

### User Population

Flubromazolam is used as a recreational substance in the United States. It 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. It has been identified in PEZ-like pills or tablets. The National Forensic Laboratory Information System (NFLIS) is a DEA database that collects scientifically verified data on drug items and cases submitted to and analyzed by state, local, and federal forensic laboratories. According to NFLIS-Drug, the number of flubromazolam drug reports has continued to increase significantly since it was first encountered in 2015 (14 NFLIS drug reports). In 2021 NFLIS-Drug reported 638 drug reports associated with flubromazolam.

### Illicit Uses:

According to the United Nations Office on Drugs and Crime (UNODC Current NPS Threats, 2022), benzodiazepine-type novel psychoactive substances (NPS) continue to constitute the greatest number of NPS reported to the Tox-Portal, accounting for 47% of all NPS cases associated with postmortem investigations, and 67% of all DUI cases. Of the substances reported, flubromazolam was reported as one of the most commonly identified benzodiazepine-type NPS, accounting for 89 reported cases. The Centers for Disease Control and Prevention recently released "The Fentalog Study", which utilizes data collected from ten geographically diverse hospitals in 9 states across the United States. As of March 2023, out of 733 samples tested between February, 2020 and December 2022, 9% of blood specimens from suspected opioid-involved overdoses also tested positive for illicit benzodiazepines. Flubromazolam was positively identified in six percent of these illicit benzodiazepine, opioid-involved overdoses.

### Control Status

Flubromazolam is currently controlled under Schedule I of the Controlled Substances Act. At the 2021 Commission on Narcotic Drugs Sixty-fourth session, the Commission decided to include flubromazolam in Schedule IV of the 1971 Convention on Psychotropic Substances.