

## PHENAZEPAM

(Street Names: Bonsai, Soviet Benzo, Fenaz, Panda)

### Introduction:

Phenazepam belongs to a class of substances known as benzodiazepines. Benzodiazepines are a class of drugs that produce central nervous system (CNS) depression and are commonly used to treat insomnia and anxiety. Phenazepam is currently a prescription medication in Russia and other Commonwealth of Independent States (CIS) countries; however, this substance has recently emerged on the illicit drug market in the United Kingdom and United States.

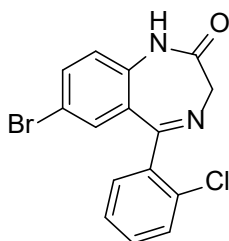
Phenazepam is usually encountered in powder form, in solution contained in dropper bottles, or in tablet form. Phenazepam has also been found in combination with synthetic cannabinoids laced onto smokeable herbal products and spiked onto blotter papers.

### Licit Uses:

Benzodiazepines are widely prescribed drugs; however, phenazepam does not currently have an accepted medical use in the United States. Phenazepam was developed in the Soviet Union and has been used as a prescribed medication since 1978 to treat neurological conditions, such as epilepsy, anxiety, alcohol withdrawal syndrome, and sleep disorders. Phenazepam is available as 0.5 mg and 1.0 mg tablets, 0.1% and 0.3% injectable solutions, or transdermal patches in countries where the substance is marketed for clinical use.

### Chemistry:

Phenazepam is chemically known as 7-bromo-5-(2-chlorophenyl)-1,3-dihydro-1,4-benzodiazepin-2-one. Like other benzodiazepines, phenazepam is composed of a benzene ring fused to a seven-membered 1,4-diazepine ring. A 2-chlorophenyl ring is attached at the 5-position and a bromine is attached at the 7-position. Phenazepam has a molecular formula of  $C_{15}H_{10}BrClN_2O$  and a molecular weight of 349.6 g/mol. The structure of phenazepam is shown below:



### Pharmacology:

Phenazepam is an agonist of the gamma-aminobutyric acid-A (GABA<sub>A</sub>) receptor and produces CNS depression. In plus-maze and conflict tests in male rats, very low doses of phenazepam showed an anxiolytic effect. At conventional doses, phenazepam acts as a potent tranquilizer. Phenazepam has been shown to fully substitute for pentobarbital in adult rats trained to discriminate pentobarbital versus saline. In the antagonism tests, the discriminative

effects of phenazepam were fully antagonized by the selective benzodiazepine antagonist flumazenil.

Phenazepam has a half-life of up to 60 hours and the onset of effects is approximately 2–3 hours following oral administration. Due to this, there is a potential for users to re-dose prior to the observation of its effects. 3-Hydroxyphenazepam, a metabolite of phenazepam, is also a GABA<sub>A</sub> receptor agonist. These pharmacokinetic data suggest that phenazepam would have a high overdose potential.

Adverse effects of phenazepam overdose include loss of coordination, retrograde amnesia, dizziness, and drowsiness with the potential to cause respiratory depression and coma. Death from phenazepam ingestion alone, like other benzodiazepines, is rare. Death can occur if phenazepam is ingested with another CNS depressant that has synergistic effects, such as an opioid or alcohol.

### Illicit Uses:

Phenazepam is abused recreationally due to the euphoric effects it produces. It is also abused for its ability to enhance the euphoric effects of opioids. Additionally, abusers have reported using phenazepam to alleviate withdrawal syndromes, temper cocaine highs, and augment the effects of alcohol.

### User Population:

Although phenazepam is a legitimate pharmaceutical in Russia and other CIS countries, phenazepam is used as a recreational benzodiazepine in the United States. Information suggests that phenazepam is used by several population groups, including youths, young adults, and older adults.

### Illicit Distribution:

Phenazepam is sold over the internet and at local retail shops that promote this substance as a “research chemical.” It has been sold as a powder, in tablet form, and in solution sold in dropper bottles or as an “air freshener.”

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 4 reports of phenazepam in 2005, 113 in 2013, 1 in 2021, 21 in 2022, 15 in 2023, and 13 in 2024 (reports still pending).

### Control Status:

Phenazepam is not controlled under 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).