

## KETAMINE

(Trade Names: Ketalar, Ketaset, Ketajet, Ketavet, Vetamine, Vetaket, and Ketamine Hydrochloride Injection;  
Street Names: Special K, K, Kit Kat, Cat Valium, Super Acid, Special La Coke, Purple, Jet, and Vitamin K)

### Introduction:

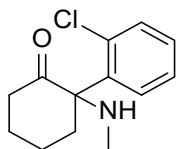
Ketamine is a dissociative anesthetic that has gained popularity as a drug of abuse. Slang for experiences related to ketamine or effects of ketamine include “K-land,” “K-hole,” “baby food,” and “God.”

### Licit Uses:

Since the 1970s, ketamine has been marketed in the United States as an injectable short-acting anesthetic for use in humans and animals. It is imported into the United States and formulated into dosage forms for distribution. According to the IQVIA National Prescription Audit™, total prescriptions dispensed for ketamine in the United States were 22,010 in 2015; 28,684 in 2020; 42,754 in 2022; and 65,411 in 2024. Off-label ketamine use for the treatment of several psychological disorders, such as treatment-resistant depression and anxiety, has contributed to the increase in ketamine prescriptions. The S-enantiomer of ketamine (esketamine) gained approval from the Food and Drug Administration in March 2019 for the treatment of treatment-resistant depression. According to the IQVIA National Prescription Audit™, total prescriptions dispensed for esketamine in the United States were 29,970 in 2019; 87,274 in 2020; 145,475 in 2021; 235,906 in 2022; 397,709 in 2023; and 553,103 in 2024.

### Chemistry:

The chemical name for ketamine is 2-(2-chlorophenyl)-2-(methylamino)-cyclohexanone. The hydrochloride salt of ketamine is a white crystalline powder, which is soluble in water. The structure of ketamine is shown below:



### Pharmacology:

Ketamine is a rapid-acting, non-barbiturate dissociative anesthetic. Ketamine is structurally and pharmacologically similar to phencyclidine (PCP). Like PCP, ketamine has activity at N-methyl-d-aspartate (NMDA) receptors. It also binds to mu opioid and sigma/phencyclidine receptors. Ketamine produces sedation, immobility, amnesia, and marked analgesia. At low doses and upon emergence from anesthesia, ketamine produces changes in mood, body image, and hallucination. Relative to PCP, ketamine is less potent as an anesthetic, has a faster onset, and shorter duration of action.

### Illicit Uses:

Ketamine distorts perceptions of sight and sound and makes

the user feel disconnected and not in control. The subjective effects, including hallucinogenic effects, are relatively short in duration compared to LSD or PCP and last approximately 30 to 60 minutes, as opposed to several hours.

Ketamine powder is usually snorted, mixed in drinks, or smoked. Liquid ketamine is injected, applied on a smokable material, or consumed in drinks. Most abusers of ketamine take small lines or “bumps.” An average dose of ketamine is 100 mg.

### User Population:

Ketamine is abused by teenagers and young adults. The 2024 Monitoring the Future study reported that ketamine use among 12th grade students remained at 1% for the past decade. The 2023 National Survey on Drug Use and Health reported that among people aged 12 and older in the United States, approximately 762,000 (0.3%) used ketamine in 2022 and 943,000 (0.3%) used ketamine in 2023.

The American Association of Poison Control Centers reported that ketamine and its analogs were related to 343, 373, and 369 exposures (with 141, 172, and 160 single substance exposures) in 2020, 2021, and 2022, respectively. In addition, six deaths were related to ketamine and its analogs from 2020–2022.

### Illicit Distribution:

Ketamine is distributed as a dried powder or as a liquid in small vials or bottles. It is snorted, smoked, ingested orally, or injected. Powdered ketamine is formed from pharmaceutical ketamine by evaporating the liquid off.

Ketamine is mainly found in isolation; however, it has also been found in combination with MDMA, amphetamine, methamphetamine, cocaine, or carisoprodol. Occasionally, ketamine is found in polydrug “MDMA” (Ecstasy) 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 over 43,000 reports of ketamine, including 1,965 reports in 2021; 2,112 in 2022; 2,908 in 2023; and 3,557 in 2024 (reports still pending).

### Control Status:

Ketamine is controlled in schedule III of the Controlled Substances Act.