

Ketamine

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(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 IQVIA National Prescription Audit™, total prescriptions for ketamine dispensed in the United States were approximately 22,684 in 2020, 37,282 in 2021, and 42,754 in 2022. 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 FDA approval in March 2019 for the treatment of treatment-resistant depression. According to IQVIA National Prescription Audit™, total prescriptions for esketamine dispensed in the United States were approximately 87,274 in 2020, 145,475 in 2021, and 235,906 in 2022.

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.

Pharmacology:

It is a rapid-acting non-barbiturate dissociative anesthetic, 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, it 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, lasting 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 is 100 mg.

User Population:

Ketamine is abused by teenagers and young adults. The 2022 Monitoring the Future (MTF) study reported the past year use of ketamine among 12th grader students were 0.9% in 2021, 1.2% in 2022, and 1.0% in 2023. Ketamine exposure have been reported by the American Association of Poison Control Centers (AAPCC). The Annual Reports indicated there were 343, 373, and 369 exposures (with 141, 172, and 160 single substance exposures) related to ketamine and analogs in 2020, 2021, and 2022, respectively. Six deaths were reported related to ketamine and 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.

According to 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, there have been nearly 38,000 reports of ketamine, including 1,949 reports in 2021 and 2,008 reports in 2022.

The 2022 National Survey on Drug Use and Health (NSDUH) reported that among people aged 12 and older in the United States, approximately 762,000 (0.3%) used ketamine in 2022.

Control Status:

Ketamine is controlled in schedule III 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.