



## KETAMINE

(Street Names: Special K, "K", Kit Kat, Cat Valium)

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DEA/OD/ODE

### Introduction:

Ketamine is a dissociative anesthetic that has gained popularity as a drug of abuse. On the street, it is commonly known as "K" or "Special K." Other street names include Cat Valium, Super Acid, Special La Coke, Purple, Jet (Texas), and Vitamin K. 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 under the trade names Ketalar, Ketaset, Ketajet, Ketavet, Vetamine, Vetaket, and Ketamine Hydrochloride Injection. There were 16,000 dispensed prescriptions for ketamine in the U.S. in 2012. In the first quarter of 2013, 4,000 ketamine prescriptions were dispensed (IMS Health™).

### Chemistry and Pharmacology:

Ketamine hydrochloride, 2-(2-chlorophenyl)-2-(methylamino)-cyclohexanone hydrochloride, is a white crystalline powder, which is soluble in water. 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. A "Special K" "trip"'s hallucinatory 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 smokeable 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 many teenagers and young adults. The 2011 Monitoring the Future (MTF) study reports the annual use of ketamine among 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> graders is 0.8%, 1.2% and 1.7%, respectively. MTF

reports that in 2012, 1.5% of 12<sup>th</sup> graders used ketamine; past year use for 8<sup>th</sup> and 10<sup>th</sup> graders was not reported. The American Association of Poison Control Centers (AAPCC) 2011 Annual Report indicates that there were 220 exposures related to ketamine (121 single substance exposures) in that year. No deaths were associated with ketamine in 2011. According to the Drug Abuse Warning Network (DAWN ED), an estimated 1,550 emergency department visits in 2011, an increase from 915 estimated visits in 2010, were associated with ketamine. The Florida Department of Law Enforcement reported five deaths in 2011 in the State of Florida in which ketamine was found present in the decedent and eight ketamine associated deaths from January to June 2012.

### Illicit Distribution:

DEA reports indicate that Mexico is a major supplier of illicit ketamine in the United States. Despite DEA and Mexican law enforcement dismantling the major drug ring of illicit ketamine in the United States in September 2002, Mexico continues to supply large amounts of ketamine into the United States. In November 2005, DEA successfully dismantled a large ketamine distribution organization operating throughout Los Angeles, Riverside and Orange counties in California. At that time, approximately 35,000 dosage units of ketamine smuggled from Mexico were seized.

Law enforcement information indicated that another source was an international pharmaceutical drug organization. This organization was smuggling ketamine from India into the United States. In April 2005, that organization was dismantled and 108 kilograms of Indian ketamine was seized with an estimated street value of approximately \$1.62 million.

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 the National Forensic Laboratory Information System (NFLIS) and the System to Retrieve Information from Drug Evidence (STRIDE), federal, state and local forensic laboratories identified 1,067 ketamine exhibits in 2012 and 141 exhibits in the first quarter of 2013.

### Control Status:

On August 12, 1999, ketamine became a Schedule III non-narcotic substance under the Controlled Substances Act.

Comments and additional information are welcomed by the Drug and Chemical Evaluation Section, Fax 202-353-1263, telephone 202-307-7183, or Email ODE@usdoj.gov.