



GAMMA HYDROXYBUTYRIC ACID

(Street Names: GHB, Liquid Ecstasy, Liquid X, Goop, Georgia Home Boy, Easy Lay)

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DEA/OD/ODE

Introduction:

Gamma-hydroxybutyric acid (GHB) is a schedule I depressant. The GHB-containing pharmaceutical product, Xyrem®, is controlled as a schedule III drug. GHB abuse became popular among teens and young adults at dance clubs and “raves” in the 1990s, and gained notoriety as a date rape drug.

Licit Uses:

In 2002, the Food and Drug Administration approved Xyrem® (sodium oxybate) with Orphan Drug Status and limited distribution through a central pharmacy. Xyrem® is approved as a treatment to reduce the incidence of cataplexy and to improve daytime sleepiness in patients with narcolepsy. The aggregate production quota for GHB in 2012 was 37,000 kilograms.

Chemistry and Pharmacology:

GHB is a powdered substance and it is generally dissolved in a liquid. In liquid form, GHB is clear and colorless, and slightly salty in taste.

GHB is present in the central nervous system in very small concentrations; it is a metabolite of the neurotransmitter gamma-aminobutyric acid (GABA). Scientific data suggest that GHB can function as a neurotransmitter or neuromodulator in the brain. It produces dose-dependent depressant effects similar to those of the barbiturates and methaqualone. Low doses of GHB produce drowsiness, nausea, and visual distortion. At high doses, GHB overdose can result in unconsciousness, seizures, slowed heart rate, severe respiratory depression, decreased body temperature, vomiting, nausea, coma, or death. Sustained use of GHB can lead to addiction. Chronic abuse of GHB produces a withdrawal syndrome characterized by insomnia, anxiety, tremors, marked autonomic activation (i.e., increased heart rate and blood pressure) and occasional psychotic thoughts. Currently, there is no antidote available for GHB overdose.

Illicit Uses:

GHB is abused for its euphoric and sedative effects. GHB is mainly self-ingested orally in a liquid mixture. It is sometimes mixed with alcohol to intensify its effects resulting in respiratory depression and coma. The average oral dose ranges from 1 to 5 grams (depending on the purity of the compound this can be 1-2 teaspoons mixed in a beverage). The concentration of GHB in these “home-brews” is variable, and the user is not usually aware of the actual dose they are drinking. The onset of action after oral ingestion is 15 to 30 minutes and the effects last 3 to 6 hours.

The 2010 American Association of Poison Control Centers report indicates that GHB accounted for 546

case mentions, 342 single exposures, and 48 major medical outcomes. According to New DAWN ED, emergency room visits associated with GHB use increased from 1,084 in 2006 to 1,787 in 2010. GHB analogues gamma-butyrolactone (GBL) and 1,4-butanediol (BD) are often abused in place of GHB. Upon ingestion these analogues metabolize to GHB and thus produce physiological effects similar to GHB.

User Population:

GHB is abused by teens and young adults at all-night parties and “raves.” The Monitoring the Future (MTF) Survey indicated that in 2012, 1.4% of 12th graders reported past year use of GHB.

Illicit Distribution:

GHB is produced illegally in both domestic and foreign clandestine laboratories. The major source of GHB is through clandestine synthesis by local operators. GHB is sold usually as a white powder or as a clear liquid. GHB is packaged in vials or small bottles. At bars or “rave” parties, GHB is sold in liquid form by the capful or “swig” for \$5 to \$25 per cap.

National Forensic Laboratory Information System (NFLIS) and the System to Retrieve Information from Drug Evidence (STRIDE) data indicate that there were 161 laboratory submissions identified as GHB by Federal, state and local forensic laboratories in 2011. In the first six months of 2012, 90 drug items were identified as GHB.

Control Status:

On March 13, 2000, GHB, including its salts, isomers, and salts of isomers, were made a schedule I controlled substance. On March 20, 2001, GHB was controlled internationally as a Schedule IV substance under the 1971 Convention on Psychotropic Substances.

Though Xyrem® is a schedule III controlled substance, trafficking of Xyrem® is subject to schedule I penalties.

Gamma-Butyrolactone (GBL) and 1,4-butanediol (BD) are structurally similar to GHB and there is a large body of evidence to confirm that GBL and BD are converted to GHB after oral administration. GBL and BD have been sold and substituted for GHB in an effort to circumvent state and federal laws. If intended for human consumption, both GBL and BD may be treated as a “controlled substance analogue” under the CSA pursuant to 21 U.S.C §§802(32)(A) and 813.

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.