Chlordiazepoxide

\[
\text{C}_{16}\text{H}_{14}\text{ClN}_{3}\text{O} \quad \text{299.75}
\]

3H-1,4-Benzodiazepin-2-amine, 7-chloro-N-methyl-5-phenyl-4-oxide.

7-Chloro-2-(methylamino)-5-phenyl-3H-1,4-benzodiazepine 4-oxide \( [\text{58}-25-3] \).

» Chlordiazepoxide contains not less than 98.0 percent and not more than 102.0 percent of \( \text{C}_{16}\text{H}_{14}\text{ClN}_{3}\text{O} \), calculated on the dried basis.

Packaging and storage—Preserve in tight, light-resistant containers.

**USP Reference standards** (11)—

USP 2-Amino-5-chlorobenzophenone RS

USP Chlordiazepoxide RS

USP Chlordiazepoxide Related Compound A RS

7-chloro-1,3-dihydro-5-phenyl-2H-1,4-benzodiazepin-2-one 4-oxide.

\( \text{C}_{15}\text{H}_{11}\text{ClN}_{2}\text{O} \quad 286.72 \)

**Identification—**

A: Infrared Absorption (197K).

B: The retention time of the major peak in the chromatogram of the Assay preparation corresponds to that in the chromatogram of the Standard preparation as obtained in the Assay.

C: To about 20 mg add 5 mL of hydrochloric acid and 10 mL of water, and heat to boiling to effect hydrolysis. To the cooled solution add 2 mL of sodium nitrite solution (1 in 1000), shake, add 1 mL of ammonium sulfamate solution (1 in 200), then shake for 2 minutes, and add 1 mL of \( \text{N}-(1\text{-naphthyl})\text{ethylenediamine dihydrochloride solution (1 in 1000): a reddish violet color is produced.} \)

**Loss on drying** (731)—Dry at 105 °C for 3 hours: it loses not more than 0.3% of its weight.

Residue on ignition (281): not more than 0.1%.

Heavy metals, Method II (231): 0.002%.

Related compounds—Transfer 50.0 mg to a 10-mL conical flask, add 2.5 mL of acetone, and shake. Allow any undissolved particles to settle, and add 50 \( \mu \text{L} \) of the supernatant to a suitable thin-layer chromatographic plate (see Chromatography (621)) coated with a 0.25-mm layer of chromatographic silica gel. Apply to the same plate 10 \( \mu \text{L} \) of an acetone solution containing 100 \( \mu \text{g} \) per mL of USP Chlordiazepoxide Related Compound A RS and 10 \( \mu \text{L} \) of an acetone solution containing 10 \( \mu \text{g} \) per mL of USP 2-Amino-5-chlorobenzophenone RS. Develop the chromatogram in a chromatographic chamber (not previously saturated with the developing solvent) in ethyl acetate until the solvent front has moved about three-fourths of the length of the plate. Remove the plate from the developing chamber, mark the solvent front, and allow the solvent to evaporate. Locate the spots on the plate by lightly spraying with 2 N sulfuric acid, drying at 105°C for 15 minutes, and then spraying in succession with sodium nitrite solution (1 in 1000), ammonium sulfamate solution (1 in 200), and \( \text{N}-(1\text{-naphthyl})\text{ethylenediamine dihydrochloride solution (1 in 1000): Any spots from the test solution are not greater in size or intensity than the spots at the respective } \text{Rf} \text{ values produced by the Standard solutions, corresponding to not more than 0.1% of chlordiazepoxide related compound A, and to not more than 0.01% of 2-amino-5-chlorobenzophenone.} \)

**Assay—**

B: A portion of finely powdered Tablets, equivalent to about 20 mg of chlordiazepoxide, responds to Identification test C under Chlordiazepoxide.