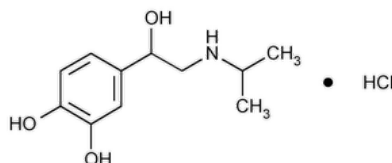


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Isoproterenol Hydrochloride



$C_{11}H_{17}NO_3 \cdot HCl$ 247.72

1,2-Benzenediol, 4-[1-hydroxy-2-[(1-methylethyl)amino]ethyl]-, hydrochloride.

3,4-Dihydroxy- α -[(isopropylamino)methyl]benzyl alcohol hydrochloride CAS RN[®]: 51-30-9; UNII: DIA2A74855.

» Isoproterenol Hydrochloride contains not less than 97.0 percent and not more than 101.5 percent of $C_{11}H_{17}NO_3 \cdot HCl$, calculated on the dried basis.

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

USP REFERENCE STANDARDS (11)—

[USP Isoproterenol Hydrochloride RS](#)

Identification—

Change to read:

A: ▲ [Spectroscopic Identification Tests \(197\)](#), [Infrared Spectroscopy: 197K](#) ▲ (CN 1-May-2020) ·

Change to read:

B: ▲ [Spectroscopic Identification Tests \(197\)](#), [Ultraviolet-Visible Spectroscopy: 197U](#) ▲ (CN 1-May-2020)

Solution: 50 µg per mL.

Medium: water.

MELTING RANGE (741): between 165° and 170°.

LOSS ON DRYING (731):—Dry about 1 g, accurately weighed, in vacuum over phosphorus pentoxide for 4 hours: it loses not more than 1.0% of its weight.

RESIDUE ON IGNITION (281): not more than 0.2%.

SULFATE (221):—A 0.10-g portion shows no more sulfate than corresponds to 0.20 mL of 0.020 N sulfuric acid (0.2%).

Limit of isoproterenone—Its absorptivity (see [Ultraviolet-Visible Spectroscopy \(85U\)](#)) at 310 nm, determined in a solution containing 2 mg per mL, is not more than 0.2.

Chloride content—Dissolve about 500 mg, accurately weighed, in 5 mL of water. Add 5 mL of glacial acetic acid and 40 mL of methanol. Add eosin Y TS, and titrate with 0.1 N silver nitrate VS. Each mL of 0.1 N silver nitrate is equivalent to 3.545 mg of Cl. Between 13.9% and 14.6% of Cl is found, calculated on the dried basis.

Assay—

Standard preparation—Dissolve an accurately weighed quantity of [USP Isoproterenol Hydrochloride RS](#) in freshly prepared sodium bisulfite solution (3 in 1000) to obtain a solution having a concentration of about 2.5 mg per mL. Transfer 5.0 mL of this solution to a 50-mL volumetric flask, dilute with 0.17 N acetic acid to volume, and mix to obtain a solution having a known concentration of about 250 µg per mL.

Assay preparation—Transfer about 125 mg of Isoproterenol Hydrochloride, accurately weighed, to a 25-mL volumetric flask, dissolve in sodium bisulfite solution (3 in 1000), dilute with sodium bisulfite solution to volume, and mix. Transfer 5.0 mL of this solution to a 100-mL volumetric flask, dilute with 0.17 N acetic acid to volume, and mix.

Chromatographic system (see [Chromatography \(621\)](#))—The liquid chromatograph is equipped with a 278-nm detector and a 30-cm × 4-mm stainless steel column that contains packing L1. The mobile phase is 0.17 N acetic acid having a flow rate of about 1.5 mL per minute. Chromatograph five replicate injections of the *Standard preparation*, and record the peak responses as directed for *Procedure*: the relative standard deviation is not more than 3.0%.

Procedure—Using a microsyringe or sampling valve, chromatograph 10 µL of the *Standard preparation*, and adjust the specimen size and other operating parameters, if necessary, until satisfactory chromatography and peak responses are obtained. Chromatograph equal volumes of the *Standard preparation* and the *Assay preparation*, and measure the peak responses. Calculate the quantity, in mg, of $C_{11}H_{17}NO_3 \cdot HCl$ in the portion of Isoproterenol Hydrochloride taken by the formula:

$$0.5C(h_u/h_s)$$

in which C is the concentration, in μg per mL, of [USP Isoproterenol Hydrochloride RS](#) in the *Standard preparation*; and h_u and h_s are the peak responses obtained from the *Assay preparation* and the *Standard preparation*, respectively.

Auxiliary Information - Please [check for your question in the FAQs](#) before contacting USP.

Topic/Question	Contact	Expert Committee
ISOPROTERENOL HYDROCHLORIDE	Documentary Standards Support	SM52020 Small Molecules 5

Chromatographic Database Information: [Chromatographic Database](#)

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