



Certificate of analysis

Product name: Estradiol

Cas number: 50-28-2

Molecular Formula: $C_{18}H_{24}O_2$

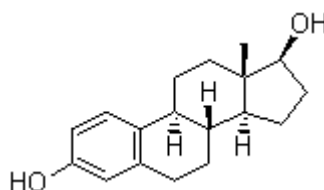
Molecular Weight: 272.38

Date of production: Feb. 15, 2017

Batch NO: 20170515

Exp Date: Feb. 14, 2019

Chemical structure:



Items	Specifications	Results
Appearance	White or almost white crystalline powder	Conforms
Identification	Positive	Conforms
Melting range	173°C ~ 179°C	177°C ~ 179°C
Specific optical rotation	+76.0° ~ +83.0°	+79°
Water	2.9% ~ 3.5%	3.3%
Chromatography purity	Any single impurity $\leq 0.5\%$	Conforms
	Total impurity $\leq 1.0\%$	0.25%
Residual Solvents	Methanol ≤ 3000 ppm	N.D.
	Ethanol ≤ 5000 ppm	1776 ppm
	Acetone ≤ 5000 ppm	N.D.
	Ethyl alcohol ≤ 5000 ppm	745 ppm
Assay	97.0% ~ 103.0%	98.8%

Conclusion: It complies with the USP33 Standard.

Analyst: Zhao

Checker: Liu

Q.C Director: Fang F

