



SHANDONG TIANLI PHARMACEUTICAL CO., LTD.

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CERTIFICATE OF ANALYSIS

Product Name: Ascorbic Acid

Quantity: 4.0MT

Batch No.: 201309150

Date of Certificate: Sep,18,2013

Date of Manufacture: Sep,17,2013

Date of Expiry: Sep,16,2016

Items	Standard	Results
Appearance	White crystalline powder	White crystalline powder
Identification	Positive	Positive
Clarity of solution	Clear	Clear
Color of solution	$\leq \text{BY}_7$	$< \text{BY}_7$
Assay	99.0~100.5%	99.8%
Loss on Drying	$\leq 0.4\%$	0.04%
Residue on ignition	$\leq 0.1\%$	0.03%
Sulphate Ash	$\leq 0.1\%$	0.03%
Specific rotation	$+20.5^\circ \sim +21.5^\circ$	$+20.99^\circ$
pH(with 2% water solution)	2.4-2.8	2.65
PH(with 5% water solution)	2.1-2.6	2.36
Melting range	About 190°C	191°C
Heavy metals	$\leq 3\text{ppm}$	$< 3\text{ppm}$
Iron	$\leq 2\text{ppm}$	$< 2\text{ppm}$
Copper	$\leq 5\text{ppm}$	$< 5\text{ppm}$
Impurity E	$\leq 0.2\%$	$< 0.2\%$
Arsenic	$\leq 1\text{ppm}$	$< 1\text{ppm}$
Lead	$\leq 2\text{ppm}$	$< 2\text{ppm}$
Cadmium	$\leq 1\text{ppm}$	$< 1\text{ppm}$
Mercury	$\leq 1\text{ppm}$	$< 1\text{ppm}$
Organic volatile impurities	Meets the requirements	conform
Related Substances	Impurity C $\leq 0.15\%$ Impurity D $\leq 0.15\%$ Any Other Unspecific Impurities Impurity $\leq 0.10\%$ Total Impurity $\leq 0.2\%$	Complies
Total Plate Count	$\leq 1,000\text{cfu/g}$	$< 1,000\text{cfu/g}$

According to BP2013, E300, USP36, FCC8, EP 7.

Tester: Li Jianting

Checked by: Mu Yonghua

Approved by: Luan Shaohua