

## VERIFICATION WAS PERFORMED

### using standard samples:

State standard samples of composition of carbon and alloyed steels, № on the State Register 10504-2014 (set УГ0-УГ9).

### at the following values the influencing factors:

The temperature – 295,0 K                      Relative humidity – 46%  
 Atmospheric pressure – 91,1 kPa              Supply voltage – (220±5) V

### Visual inspection.

Emission Spectrometer "SPAS-02", № 134 complies technical documentation (TY 4434-003-54296209-07 and Operating instructions ЦПА.002.00.000.06 ПЭ), defects are absent.

### Testing.

Testing. The device is functioning properly, - according to the requirements TY 4434-003-54296209-07.

### Metrological characteristics:

Metrological characteristic	The value of the metrological characteristics			
	Requirements of regulatory documents		The actual value of metrological characteristics	
Working spectral range, nm	174-455		174-455	
Spectral resolution (on line Fe 440,475 nm), nm	not more than 0,05		0,022	
Uncompensated drift for a set of control lines	not more than 0,05		0,016	
Detection limits of alloying and impurity elements, % by mass	not more than 0,010		Al – 0,00105	P – 0,00505
			C – 0,0091	S – 0,00953
			Cr – 0,00055	Si – 0,0071
			Cu – 0,00074	Ti – 0,00013
			Mn – 0,0018	V – 0,00062
			Mo – 0,00035	W – 0,00734
			Ni – 0,00011	Nb – 0,0016
The relative standard deviation of the output of the spectrometer in the measurement mode of the relative intensities, %	not more than			
	Al – 10,0	Ni – 7,5	Al – 4,9	Ni – 0,3
	C – 7,5	P – 10,0	C – 3,1	P – 6,4
	Cr – 10,0	S – 10,0	Cr – 1,3	S – 8,8
	Cu – 10,0	Si – 5,0	Cu – 1,3	Si – 1,5
	Mn – 7,5	Ti – 10,0	Mn – 0,5	Ti – 3,3
	Mo – 10,0	V – 10,0	Mo – 2,1	V – 1,9
The relative standard deviation of the output of the spectrometer in the measurement mode of the relative intensities for 8 hours of operation, %	not more than 10,0		Al – 2,5	Ni – 0,3
			C – 2,1	P – 4,6
			Cr – 0,7	S – 6,9
			Cu – 2,0	Si – 1,3
			Mn – 0,4	Ti – 2,7
			Mo – 1,6	V – 4,0
			Nb – 5,9	W – 4,2

**The conclusion:** Metrological characteristics of Emission Spectrometer "SPAS-02", № 134, don't exceed the limits, normalized in the technical documentation (TY 4434-003-54296209-07 and Operating instructions ЦПА.002.00.000.06 ПЭ) and comply with the requirements the authorized Technique of Verification МИИ-242-0418-2006.