

ICRM-Center, Ltd.

# CERTIFICATE OF ANALYSIS

CERTIFIED REFERENCE MATERIAL

№ SH7/3

## FLUX

CERTIFIED VALUES AND UNCERTAINTIES (95% confidence level), %

Silicon oxide, <b>SiO<sub>2</sub></b>	<b>23.4 ± 0.1</b>	Sulphur, <b>S</b>	<b>0.031 ± 0.001</b>
Calcium oxide, <b>CaO</b>	<b>24.0 ± 0.1</b>	Phosphorus, <b>P</b>	<b>0.011 ± 0.001</b>
Magnesium oxide, <b>MgO</b>	<b>11.4 ± 0.1</b>	Calcium fluoride, <b>CaF<sub>2</sub></b>	<b>28.5 ± 0.1</b>
Aluminium oxide, <b>Al<sub>2</sub>O<sub>3</sub></b>	<b>29.8 ± 0.1</b>	Potassium oxide, <b>K<sub>2</sub>O</b>	<b>0.94 ± 0.02</b>
Manganese oxide (II), <b>MnO</b>	<b>0.40 ± 0.01</b>	Sodium oxide, <b>Na<sub>2</sub>O</b>	<b>1.41 ± 0.03</b>
Ferrum oxide (II), <b>FeO</b>	<b>0.56 ± 0.01</b>		

**ADDITIONAL DATA:**

Powder, less than 0.063mm.

Minimum weight of sample for analysis is 0.1g

Analytical methods used are given in Supplement.

**Producer:** The Institute for Certified Reference Materials, Yekaterinburg

**Date of issue:** February 2002.

**Date of re-certification:** November 2016.

**Storage and transporting conditions:** It is prohibited to storage the CRM in moist and foggy indoor places and to transport it by sea or river ships.

It is hereby certified that the named CRM has been approved by the National Committee on Standards and Metrology and entered in the National Register of measuring devices which had passed official testing.

Director, ICRM-Center

Alexander V. Lipsky

## ANALYTICAL METHODS USED

Silicon oxide, <b>SiO<sub>2</sub></b>	Photometry, as blue Si-Mo complex, reduction by thiourea, by ascorbic acid Gravimetry perchlorate, chloric, sulfuric
Calcium oxide, <b>CaO</b>	Complexometric permanganate titration Gravimetry, as calcium oxide
Magnesium oxide, <b>MgO</b>	Complexometric titration Atomic absorption spectrometry Phosphatic gravimetry Photometric with phenazo
Aluminium oxide, <b>Al<sub>2</sub>O<sub>3</sub></b>	Complexometric titration Photometry with aluminone
Manganese oxide (II), <b>MnO</b>	Titrimetry, persulphate/silver with sodium arsenite Photometry, oxidation potassium periodate, ammonium persulphate Atomic absorption spectrometry
Ferrum oxide (II), <b>FeO</b>	Photometric with sulphosalicylic acid, with O-phenanthroline Atomic absorption spectrometry
Sulphur, <b>S</b>	Titrimetric Iodometric Gravimetry, as barium sulphate
Phosphorus, <b>P</b>	Photometry, as blue Si-Mo complex, reduction by thiourea, by Fe(II)ions with hydroxylamine or sodium sulphite
Calcium fluoride, <b>CaF<sub>2</sub></b>	Pyrohydrolysis Photometric with alizarinechelate Complexometric titration
Potassium oxide, <b>K<sub>2</sub>O</b>	Atomic emission spectrometry Flame-photometric Atomic absorption spectrometry ICP-AES
Sodium oxide, <b>Na<sub>2</sub>O</b>	Atomic emission spectrometry Flame-photometric Atomic absorption spectrometry ICP-AES