



NPK CARBON-SHUNGITE Ltd

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INN 1013003265

CERTIFICATE OF SAFETY

Name of product: size-sorted shungite

Deposit: Zazhoginskoe

Producer: NPK CARBON-SHUNGITE Ltd, 22, Murmanskaya str., Petrozavodsk, Republic of Karelia, 185031, Russian Federation

Hazardous factors: absent (none detected)

First medical aid: product not poisonous to humans

Inflammability: not easily burnt

No emergency incidents involving the product have been recorded

Handling and storing regulations: no special requirements

Personnel safety rules and precautions: no special measures required

The excavated rock possesses the following average chemical composition (% of mass):

SiO ₂	TiO ₂	Al ₂ O ₂	FeO	MgO	CaO	Na ₂ O	K ₂ O	S	C	H ₂ O crys.
57.0	0.2	4.3	2.8	1.2	0.3	0.2	1.5	1.5	28.0	3.0

H₂O crys. is incorporated in chlorite, micas.

Mineral composition (% of mass):

carbon content (C) – no less than 20 %; quartz – 50 %; composite silicates (micas, chlorite) – 17 %; sulfides – 2 %

Physical properties:

Specific weight – 2.3-2.4 g/cm³

Specific weight in one piece – 2400 kg/m³

Bulk density – 1100-1200 kg/m³

Porosity – up to 0.5%

Compression strength – 1000-1500 kg/cm³

Elastic modulus – 0.31x10⁵ MPa

According to the effective specific activity of natural radionuclides shungite is related to the 1st group (less than 151 Bq/kg).

Applications not restricted.

Technical specifications TY 5714-007-12862296-2016 "Crushed shungite from Zazhoginskoe deposit for household and industrial applications".

Shungite rock is not toxic.

Ecologically safe.

Recycling is not necessary.

No special requirements to methods of transportation.

On the grounds of the General List of Products subject to mandatory certification (Decree No. 982 of December 1, 2009 of the Government of the Russian Federation) size-sorted shungite is not liable for mandatory certification.

The deputy of the
general director of the
NPK CARBON-SHUNGITE Ltd



A.Y. Shakhov