

MATERIAL SAFETY DATA SHEET

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JSC BOROVICHI REFRACTORIES PLANT

Mezhdunarodnaya St., 1, Borovichi Novgorod reg., 174411 Russia

Tel/fax: ++7(81664)9-21-95, 9-27-96, 9-22-27

EMERGENCY TELEPHONE NUMBER: ++7(81664)9-26-62, 9-22-28

Issued: March, 2010

Revised March, 2015

SECTION 1: PRODUCT INFORMATION

Product Name: Ceramic Proppant (all mesh sizes)
Chemical Family: Aluminosilicate
Trade Name: BorProp
Application: Hydraulic Fracturing, Oil and Gas Industry

SECTION 2: COMPONENT INFORMATION

INGREDIENTS	% WEIGHT
Corundum	8 - 15%
Mullite	85 - 92%

SECTION 3: PHYSICAL DATA

BOILING POINT:	N/A	SPECIFIC GRAVITY:	3.08 - 3.14 g/sm ³
MELTING POINT:	1800 °F	BULK DENSITY:	104 - 112 lb/cu.ft.
VAPOR PRESSURE:	N/A	SOLUBILITY IN WATER:	Insoluble
VAPOR DENSITY:	N/A	pH:	N/A
APPEARANCE/ODOR:	Odorless dark-green to grey pellets		
VOLATILE ORGANIC COMPOUNDS:	0 kg/l		

SECTION 4: FIRE AND EXPLOSION HAZARD DATA

ESTIMATED EXPLOSIVE LIMITS (%By volume in air): N/A

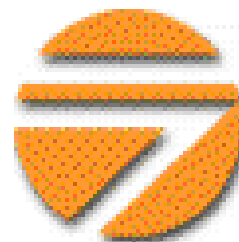
SPECIAL FIRE FIGHTING PROCEDURES: This material does not give a flash point by conventional test methods. Use extinguishing agent suitable for type of surrounding fire.

UNUSUAL HAZARDS: N/A

FLASH POINT: N/A

SECTION 5: HEALTH HAZARD DATA

INHALATION: Product contains little or no particles of respirable size. However, the amount of fines may increase due to attrition during shipment, use and handling. Dusts may cause respiratory tract irritation. Repeated or prolonged breathing of particles of respirable size may cause severe respiratory disease.



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SECTION 6: REACTIVITY DATA

STABILITY:	Stable: X	Unstable:	Conditions to avoid: N/A
HAZARDOUS POLIMERIZATION:	Will Occur:	Will not Occur: X	Conditions to avoid: N/A
HAZARDOUS DECOMPOSITION PRODUCTS: N/A			

SECTION 7: EMERGENCY AND FIRST AID PROCEDURES

INHALATION: Remove affected person from source of exposure. Get medical attention if irritation persists.

INGESTION: No treatment is necessary unless large quantities are ingested. Seek medical advice if large quantities are ingested.

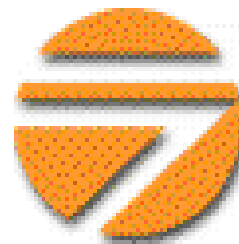
EYE CONTACT: Immediately flush eyes with large amounts of water. Get medical attention if irritation persists.

SKIN CONTACT: Wash the affected area with soap and water. Get medical attention if irritation persists.

SECTION 8: SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: No Special procedures are required for clean-up of spills or leaks of this material. Avoid methods that result in water pollution. Caution should be exercised regarding personal safety and exposure to the spilled material, the material's nature could cause reduced traction. Persons should take care so as not to slip

WASTE DISPOSAL: Disposal must be at an approved waste disposal facility and in accordance with applicable State and Local laws and regulations. Contact the regional rep of the Environmental Protection Agency and/or state regulatory agency for appropriate requirements.



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SECTION 9: SPECIAL PROTECTION

RESPIRATORY:	The approved respirator should be worn where airborne exposures may exceed permissible air concentration.
EYE PROTECTION:	Wear safety glasses or chemical goggles to prevent eye contact. Do not wear contact lenses when working with this substance.
CLOTHING/GLOVES:	Gloves are optional to reduce abrasion.
WORK HYGIENE PRACTICES:	Handle in accordance with good personal hygiene and safety practices.
VENTILATION:	Provide sufficient (general and/or local exhaust) ventilation to maintain exposure below permissible air concentration.

SECTION 10: SPECIAL PRECAUTIONS.

HANDLING/STORAGE: N/A

SECTION 11: TOXICITY AND RADIOACTIVITY.

Toxicity: non-toxic

Radioactivity: 230 Bq/kg

SECTION 12: REGULATORY INFORMATION

Russian State Sanitary Regulations SP 2.61.798-99

Russian State Norms on Radiation Safety NRB-99 (radioactivity of 1 class materials not greater than 740 Bq/kg).

Russian State Standard GOST 24717-2004 "Marking, Package, Storage and Transportation of Refractory Materials".

Russian State Standard GOST R 51761-2005 "Alumino-Silicate Proppants - Technical Specifications".

Russian State Standards GOST 12.1.007-76 and GOST 12.0.004-90 "Personal Safety Measures".