


Research Group



Info Mine 

Association of Independent Consultants and Experts
in the Field of Mineral Resources, Metallurgy and Chemical Industry

**Market Survey of
Ball-Clay in the CIS**

*MOSCOW
June, 2006*

CONTENTS

Annotation	5
INTRODUCTION	6
1. Ball-Clay Reserves and Deposits in the CIS	7
2. Ball-Clay Quality Requirements	15
3. Ball-Clay Mining in the CIS	18
3.1. Russia	19
3.1.1. <i>Production Statistics</i>	19
3.1.2. <i>Current State of Mining Enterprises</i>	21
<i>OJSC Voronezhskoye Mine Group (Voronezh Region)</i>	21
<i>OJSC VKTG (Rostov Region)</i>	23
<i>CJSC PE Chelyabinskoye Mine Group (Chelyabinsk Region)</i>	26
<i>Evro-Keramika LLC (Pskov Region)</i>	28
3.2. Ukraine	30
3.2.1. <i>Production Statistics</i>	30
3.2.2. <i>Current State of Mining Enterprises</i>	31
<i>CJSC Vesco (Donetsk Region)</i>	31
<i>CJSC JV Gliny Donbassa (Donetsk Region)</i>	35
<i>OJSC Druzhkovka Mine Group (Donetsk Region)</i>	39
<i>Donkerampromsyrio Company LLC (Donetsk Region)</i>	41
<i>OJSC Chasov-Yar Refractory Combine (Donetsk Region)</i>	42
<i>CJSC Mineral (Zaporozhye Region)</i>	43
3.3. Other Countries	44
4. Ball-Clay Exports-Imports Operations	46
4.1. Russian Exports-Imports Operations	46
4.1.1. Exports.....	46
4.1.2. Imports.....	49
4.2. Ukrainian Exports-Imports Operations	52
4.2.1. Exports.....	52
4.2.2. Imports.....	55
4.3. Belarusian Exports-Imports Operations	57
4.4. Kazakh Exports-Imports Operations	58
5. Russian Ball-Clay Domestic Consumption	59
5.1. Balance of Ball-Clay Production and Consumption	59
5.2. Ball-Clay Consumption Structure	60
5.2.1. <i>Regional Consumption Structure</i>	60
5.2.2. <i>Industrial Consumption Structure</i>	61
5.2.3. <i>Major Ball-Clay Consumer Enterprises</i>	63
6. Forecast of Ball-Clay Market Development in the CIS	73
<i>Appendix</i>	78

LIST OF TABLES

- Table 1: Russian Ball-Clay Deposits**
- Table 2: Basic Ukrainian Ball-Clay Deposits**
- Table 3: Basic Kazakh Ball-Clay Deposits**
- Table 4: Basic Belarusian Ball-Clay Deposits**
- Table 5: Classification of Clayly Crude Ore for Ceramics Industry by Refractory Property**
- Table 6: Classification of Clayly Crude Ore for Ceramics Industry by Al₂O₃ Content**
- Table 7: Classification of Clayly Crude Ore for Ceramics Industry by Coloring Oxides Content**
- Table 8: Classification of Clayly Crude Ore for Ceramics Industry by Mineral Composition**
- Table 9: Classification of Clayly Crude Ore for Ceramics Industry by Plastic Property**
- Table 10: Classification of Clayly Crude Ore for Ceramics Industry by Mechanical Strength of Flexure**
- Table 11: Classification of Clayly Crude Ore for Ceramics Industry by Sintering Temperature**
- Table 12: Ball-Clay Extraction in the CIS in 2000-2005**
- Table 13: Ball-Clay Extraction in Russia in 2000-2005**
- Table 14: Qualitative Indicators of Refractory Clays at OJSC Voronezhskoye Mine Group**
- Table 15: Major Customers of OJSC Voronezhskoye Mine Group in 2004-2005**
- Table 16: Mixture Qualitative Indicators at OJSC VKTG**
- Table 17: Major Customers of OJSC VKTG in 2004-2005**
- Table 18: Major Customers of CJSC PE Chelyabinskoye Mine Group in 2004-2005**
- Table 19: Qualitative Indicators of Clay at Pechorskoye Deposit Extracted by Evro-Keramika LLC**
- Table 20: Major Customers of Evro-Keramika LLC in 2004-2005**
- Table 21: Ball-Clay Extraction in Ukraine in 2003-2005**
- Table 22: Qualitative Indicators of Ball-Clay at CJSC Vesco**
- Table 23: Qualitative Indicators of Composite Clay at CJSC JV Gliny Donbassa**
- Table 24: Qualitative Indicators of Clay at OJSC Druzhkovka Mine Group**
- Table 25: Qualitative Indicators of Clay at Toretskoye Deposit Extracted by Donkerampromsyrlo LLC**
- Table 26: Qualitative Indicators of Ball-Clay at Chasov-Yarskoye Deposit Extracted by OJSC Chasov-Yar Refractory Combine**
- Table 27: Qualitative Indicators of Clay at Polozhskoye Deposit Extracted by CJSC Mineral**
- Table 28: Regional Structure of Russian Ball-Clay Exports in 2000-2005**
- Table 29: Major Russian Ball-Clay Exporters in 2003-2005**
- Table 30: Regional Structure of Russian Ball-Clay Imports in 2000-2005**
- Table 31: Major Russian Ball-Clay Importers in 2003-2005**
- Table 32: Regional Structure of Ukrainian Ball-Clay Exports in 2000-2005**
- Table 33: Major Ukrainian Ball-Clay Exporters in 2003-2005**
- Table 34: Regional Structure of Ukrainian Ball-Clay Imports in 2000-2005**
- Table 35: Major Belarusian Ball-Clay Importers in 2003-2005**
- Table 36: Balance of Ball-Clay Production and Consumption in Russia in 2000-2005**
- Table 37: Ceramic Tile and Sanitary Stoneware Production in Russia in 2000-2005**
- Table 38: Ball-Clay Supplies to Largest Customers in 2004-2005**
- Table 39: Execution of Work under Building Contracts in Russia in 2000-2005**

LIST OF FIGURES

- Figure 1: Regional Structure of Russian Ball-Clay Deposits**
- Figure 2: Ball-Clay Mining in Russia in 2000-2005**
- Figure 3: Clay Production Dynamics at OJSC Voronezhskoye Mine Group in 2000-2005**
- Figure 4: Clay Production Dynamics at OJSC VKTG in 2000-2005**
- Figure 5: Clay Production Dynamics at CJSC PE Chelyabinskoye Mine Group in 2000-2005**
- Figure 6: Clay Production Dynamics at Evro-Keramika LLC in 2000-2005**
- Figure 7: Growth Dynamics of Ball-Clay Output in Ukraine in 2000-2005**
- Figure 8: Russian Ball-Clay Exports in 2000-2005**
- Figure 9: Russian Ball-Clay Imports in 2000-2005**
- Figure 10: Ukrainian Ball-Clay Exports in 2000-2005**
- Figure 11: Ukrainian Ball-Clay Imports in 2000-2005**
- Figure 12: Belarusian Ball-Clay Imports in 2000-2005**
- Figure 13: Regional Structure of Ball-Clay Consumption in Russia in 2005**
- Figure 14: Industrial Structure of Ball-Clay Consumption in Russia in 2004-2005**
- Figure 15: Rates of Growth of Ball-Clay Production Volume in Russia in 2000-2005 (Output in 2000 is 100%)**
- Figure 16: Russian Residential Construction in 2000-2005**
- Figure 17: Forecast of Ball-Clay Consumption in Russia in 2006-2010**

Annotation

This survey is dedicated to market research of clayly material for production of ceramics in the CIS and forecast of its development. The survey includes 6 chapters, 79 pages, 17 figures, 39 tables and an appendix. As a source of information we used the data of Federal Service of Government Statistics (Rosstat), Interstate Statistical Committee of the CIS (CISSTAT), Federal Customs Service of the Russian Federation (FTS RF), the State Customs Committee of Ukraine, internal rail traffic statistics of MPS RF (Ministry of Railway Transport of the Russian Federation), industrial and regional mass, annual and quarterly reports of issuers, as well as internet web sites of ball-clay producers and consumers.

The first chapter of this survey is dedicated to market analysis of raw material base of ball-clay in the CIS countries. This chapter includes data concerning reserves and location of major ball-clay deposit.

The second chapter includes analysis of existing classifications and quality requirements to quality composition of ball-clay used in ceramics production.

The third chapter of this survey dedicated to ball-clay extraction and production in the CIS countries includes statistical data concerning its extraction volumes for the last six years. This chapter also includes the current situation of major ball-clay producers including existing production capacities and the extent of their employment, the quality characteristic of selling products, supply destinations of ball-clay and their volumes and plans for further development of production capacity.

The fourth chapter describes ball-clay exports-imports operations in the CIS countries. This chapter includes data concerning dynamics of exports and imports in 2000-2005 in natural kind and in money terms, average prices dynamics for the same period, regional structure of exports-imports operations and data concerning directions of ball-clay supplies by its major exporters and importers.

The fifth chapter includes internal ball-clay consumption in Russia. This chapter also describes the balance of ball-clay production and consumption, its regional and industrial consumption structures and largest Russian producers consuming ball-clay.

The sixth chapter includes the forecast of ball-clay market development in the CIS in 2006-2010.

Appendix contains contact details of ball-clay producers in the CIS.

INTRODUCTION

Clayly rocks are a group of rocks mainly consisting of clayly minerals (kaolinite, hydrous mica, montmorillonoid, palygorskit and others) whose size of particles does not exceed 0.01 mm in diameter (according to some classifications, it does not exceed 0.005 mm). The colour of clay varies from white and green-grey to yellow, red, brown and black that depends on the content of impurities of hydrous ferric oxides, organic substances and others.

Clays can be kaolonic, montmorillonite, palygorskit, hydromicaceous and others depending on domination of various minerals in them. Kaolonic clays are high-melting and refractory clays (under 1750°C and over). Montmorillonite clays are characterized by binding capacity, adsorption (bleaching) property and catalytic activity. Palygorskit clays are used for preparation of salt resistant drilling fluids and hydromicaceous clays are widely used in production of bricks and keramzit.

According to their origin, there are residual (derived while rock weathering) and sedimentary clays (the most widely spread). According to their accumulation characteristics, sedimentary clays can be continental (riverine, lake, lakustrine, glaciolacustrine and others), marine and lagoonal; hydrothermal (derived in near-surface conditions and at a depth under conditions of thermal waters).

Clayly rocks are widely used in different industries as they obtain such technological properties as plasticity, refractory property, sintering ability, bloating, adsorption and binding ability. The main quantity of them is used while production of building materials, coarse and fine ceramics, refractory materials, cement and keramzit.

This survey provides information about clayly material used in production of ceramics including ceramic tiles, sanitary stonewares, electrical insulators, ceramic tablewares and art pottery. Information containing production volumes of ceramic bricks were not overviewed.

1. Ball-Clay Reserves and Deposits in the CIS

In accordance with currently classification existing in the CIS countries, refractory and high-melting clays are used in ceramics. High-melting clays are used, basically, for production of ceramic wall, floor and facade tiles, sanitary stonewares, technical and electrical porcelain, as well as acid-resistant and facing ceramic bricks, sewer and drain pipes.

Refractory clays are used for production of refractory products and materials and as a raw material they are used in ceramics industry.

Known reserves of high-melting clays and refractory clays used in ceramics industry (hereinafter ball-clays) are available only in Russia, Ukraine, Kazakhstan, Belarus and Armenia. According to InfoMine, the total CIS ball-clay reserves are about 1270 Mt. Russia has the most part of the given reserves that is about 60% of the total CIS reserves.

Russia

The State Balance of Mineral Resources Reserves of the Russian Federation as of 01.01.2001 included 69 deposits of high-melting clays with 425 Mt of A+B+C₁ category reserves, 117.8 Mt of C₂ category reserves and 4.2 Mt of non-commercial reserves including 26 mined deposits with 125.3 Mt of A+B+C₁ category reserves and 117.8 Mt of C₂ category reserves.

The State Balance of Mineral Resources Reserves of the Russian Federation as of 01.01.2001 included 37 deposits of refractory clays with 644.5 Mt of A+B+C₁ category reserves, 743.9 Mt of C₂ category reserves and 117.6 Mt of non-commercial reserves including 15 mined deposits with 367.6 Mt of A+B+C₁ category reserves.

According to InfoMine, only 25 deposits (including 10 deposits of refractory clays) of refractory and high-melting clays are used in ceramics industry (table 1). At present total estimated Russian ball-clay reserves of A+B+C₁ category are 770 Mt.

Besides, nowadays ball-clay deposits are being searched in Russia. There has already been known a deposit of high-melting plastic white-burning clays of marine origin in Kurgan Region (Karasinskoe, Yurgamyshsky area), however these reserves have not been registered in the State Balance of Mineral Resources Reserves of the Russian Federation because the deposit has not been explored definitively.

Table 1: Russian Ball-Clay Deposits

<i>Deposit</i>	<i>Region</i>	<i>Type of mining clays</i>	<i>Reserves, Mt</i>		<i>Extent of commercial development</i>	<i>Mining enterprise</i>
			<i>A+B+C₁</i>	<i>C₂</i>		
<i>Central Federal District</i>						
Uliyanovskoye	Kaluga Region	refractory	51.1	45.7	under development	CJSC Uliyanovsky Refractory-Ceramic Plant
		high-melting	74.3	52.5	under development	CJSC Hudozhestvennyye Promysly
Kondorovskoye		high-melting	13.7	-	government reserve	-
Prizavodskoye	Moscow Region	high-melting	2.7	-	under development	OJSC Kudinovo Combine
Shulepovskoye	Ryazan Region	refractory	1.1	2.1	under development	Public unitary enterprise (PUE) of Miloslavsky District on Mining Operations
Latnenskoye	Voronezh Region	refractory	22.0	16.8	under development	OJSC Voronezhskoye Mine Group
Maloarhangelskoye II	Oryol Region	high-melting	3.9	-	under development	CJSC Welor
			12.5	-	government reserve	-
Lukoshkinskoye	Lipetsk Region	high-melting	17.6	-	under development	CJSC Lukoshkinsky Open Cut, CJSC Nedra-Keramik
Chibisovskoye		high-melting	13.9	-	government reserve	-
Krasnoyarskoye	Belgorod Region	high-melting	4.1	-	under development	Borisovskaya Keramika LLC