

EXCAVATION SITE GADŽIN HAN CALCITE

Physical and Mineralogical properties:

- Colour: White, percentage of whiteness 97
- Structure: Crystal, hexagonal prismatic crystals
- Radiance: Glass-like
- Hardness: MOS 3
- Specific density: 2,98 T/m³

Chemical structure:

CaCO ₃	99,80%
Al ₂ O ₃	0,01%
SiO ₂	0,08%
Fe ₂ O ₃	0,01%
MgO	0,01%
K ₂ O	0,01%
Insoluble	0,09%
MnO	< 0,01%
Pb	0,3 ppm.
Cd	0,05 ppm

APPLICATION

Calcite Gadžin han near Niš is applied in the following branches of industry:

- Paper making Industry
- Pharmaceutical Industry
- Colour and Lacquer Industry
- Rubber Industry
- Chemical Industry
- Cable Industry
- Artificial Fertilizer Industry

Since the Gadžin Han calcite has got low abrasion, a high degree of whiteness and high degree of chemical cleanliness it is appropriate specially for producing pigments for production of high-quality coated papers.

The high quality of Gadžin Han calcite can be seen from following data:

1. Chemical cleanliness 99,8%
2. The degree of whiteness 97%
3. Abrasion below 1
4. Easy to grind and micronize

Physical properties:

- ph 73% suspension approx. 8.0%
- density 3.7 x 10³ Kg/m³
- abrasion, metal sieve approx. 0,8 mg
- whiteness approx. 97%
- Zeta Potential: 13 mV at pH – 9,7
- size of particles:

10 um	- MA%
6-10 um	0,5 MA%
4-6 um	0,5 MA%
2-4 um	2,0 MA%
1-2 um	17,0 MA%
0-1 um	80,0 MA%

Methods of Measurements:

Density – ASTM D 153-54
Abrasion – AT 1000 Einlehner Apparatus
Whiteness – Elrepho Apparatus, Filter R 457
Zeta Potential – Laser Zetmeter PEN KEM Inc.
Size of Particles – Sedigraph 5.000 D

Fine grinded calcite is used as an excellent pigment for paper and carton coating. High degree of whiteness gives it a great advantage over other pigments.

Pharmaceutical Industry

Calcite is in appearance white, crystal powder with no smell nor taste, soluble in diluted acids, insoluble in water.

By its chemical structure calcite Gadžin han fully satisfies requirements of pharmaceutical industry and can be used i production of certain drugs.

Rubber Industry

Volatility basicity, heat loss, covering weight, rest on sieve, insolubility in HCL, are all characteristics of Gadžin han calcite which in fully meet demands for its use in rubber industry.

Rapid vulcanization and better physical and mechanical characteristics as compered with other fillings and some of the results of its application in this industry.

NOTICE:

This quality has been attested and proved by:

1. ALS
2. IRM Bor, Serbia
3. ITNMS Beograd, Serbia
4. SGS

Updated technology of exploitation and micronization of Gadžin han calcite foresees production of the following commercial types:

- micro calcite (20-10 microns)
- ultra calcite (10-0 microns)
- ultra calcite (5-2 microns)
- super calcite (2-0 microns)

Exploitation and micronization of calcite is expected for second half of 2023.