

KAOLINS FOR CERAMIC WHITEWARES



TYPICAL DATA

TEST	UNITS	DIAMOND STAR	DIAMOND DP PLUS	DIAMOND PORCELAIN	DIAMOND TABLEWARE	DIAMOND DTC	DIAMOND ULTRABRIGHT
MODULUS OF RUPTURE	lbs/sq in (kg/cm ²)	700 (49)	450 (32)	450 (32)	350 (25)	190 (13.25)	100 (7)
CASTING DATA	Casting Rate mm ² /min	0.6	0.5	0.8	0.9	3.0	4.0
	Casting Concentration (% solids @ 5 poise)	55.0	58	58.0	60.0	63.5	66.0
	P84 Demand (% w/w to give a slip @ 5 poise)	0.5	0.40	0.42	0.40	0.60	0.45
FIRED PROPERTIES	Brightness 1180 °C	97	90	84	80	80	80
	1250 °C	-	-	80	-	-	-
	1350 °C (reducing)	-	80	72	-	-	-
	Total % Contraction (wet fired) 1180 °C	9.0	9.0	11.5	11.0	8.5	8.0
	1350 °C	-	15.0	14.0	-	-	-
CHEMICAL ANALYSIS	SiO ₂	52	47.0	48.7	48.6	47.9	47.10
	Al ₂ O ₃	34	37.50	35.6	35.7	36.5	37.5
	Fe₂O₃	0.42	0.60	0.65	0.75	0.80	0.80
	TiO ₂	0.08	0.04	0.02	0.02	0.03	0.03
	CaO	0.25	0.12	0.14	0.12	0.09	0.02
	MgO	0.4	0.24	0.36	0.32	0.35	0.20
	K₂O	1.6	1.80	2.9	2.8	2.1	2.0
	Na ₂ O	0.04	0.10	0.10	0.10	0.07	0.08
LOI	11.3	12.50	11.40	11.50	11.8	12.5	
METHYLENE BLUE INDEX	m.eq/100g	9.0	7.2	7.2	6.5	4.3	3.0
PARTICLE SIZE	+53µm	0.02	0.01	0.01	0.05	0.10	0.05 max
	-2µm	70	55	53	50	43	45
MINERALOGICAL COMPOSITION %	Kaolinite	90	85	70	75	80	86
	Mica	4	9	17	15	14	12
	Felspar	1	1	5	4	2	1
	Quartz	-	1	4	3	2	1
	Smectite	5	4	4	3	2	-

A SUMMARY OF TEST PROCEDURES IS SHOWN OVERLEAF

Goonvean Ltd. was the first china clay company in the UK to be awarded the Certificate ISO 9001. The Company was founded in 1931 and since that time has established a strong reputation for the supply of high quality kaolins for all Ceramic applications. Our products are used by many of the major ceramic producers throughout the world where quality and service are essential.

Product Form and Packaging

Products are sold in noodle form with 10% moisture either in bulk, 1 tonne, 50kg or 25kg bags. Certain grades are also available in powder form with 1% moisture in 25kg bags.

Storage As a general guide, 1000kg of kaolin will occupy:-
Noodles in bulk - 1.0 cu metres
Noodles in sacks - 1.1 cu metres

Summary of Laboratory Test Procedures (available on request)

Modulus of Rupture lbs/sq in (kg/cm²)
Measured by Netzsch test equipment on extruded bars 12 mm diameter dried at 110 °C.
Clay slip is not deflocculated.

Casting Data *Casting Concentration*
% solids of clay which gives a viscosity of 5 poise when the slip is fully deflocculated by P84 Sodium Silicate. (P84 = 9Na₂O:30SiO₂)

Casting Rate mm²/min
Thickness of cast in plaster mould, measured in mm²/min after 4 mins. Slip used at the Casting Concentration.

P84 (Sodium Silicate) Demand
Quantity of P84 w/w required to fully deflocculate slip.

Fired Properties *Fired Colour (% reflectance at 495 nm) and Total Contraction (wet-fired).*
Measurements are made on a pressed clay disc, fired to 1180 °C, 1250 °C or 1350 °C using the following fired schedule:- Ambient to 990 °C @ 3°/min; 80 min soak; 990 °C – peak @ 0.8°/min, 45 min soak

Chemical Analysis K₂O % XRF.
Fe₂O₃ % XRF.
M.B.I. m.eq/100g Methylene Blue Index – dye adsorbed on surface of clay particles.
Soluble Salts (ppm) Conductivity of clear filtrate from 33% suspension.

Particle Size +53µm % Particles retained on BSS 300 mesh
-2µm % Sedigraph – measured on a 5% w/v fully deflocculated suspension.

Mineralogical Composition Kaolinite %
Mica %
Felspar % All measured by XRD.
Quartz %
Smectite %

Data The data quoted are determined by the use of Goonvean Standard Laboratory Test Procedures. Whilst every effort is taken to ensure the accuracy of technical information, the contents of this publication are not intended to constitute, or to be construed as product specification.

Conditions of Sale Sales are in accordance with our “Conditions of Sale”, copies of which will be supplied upon request.

Further Information Should you require any further information or advice on our products, please contact us at the address given below.

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