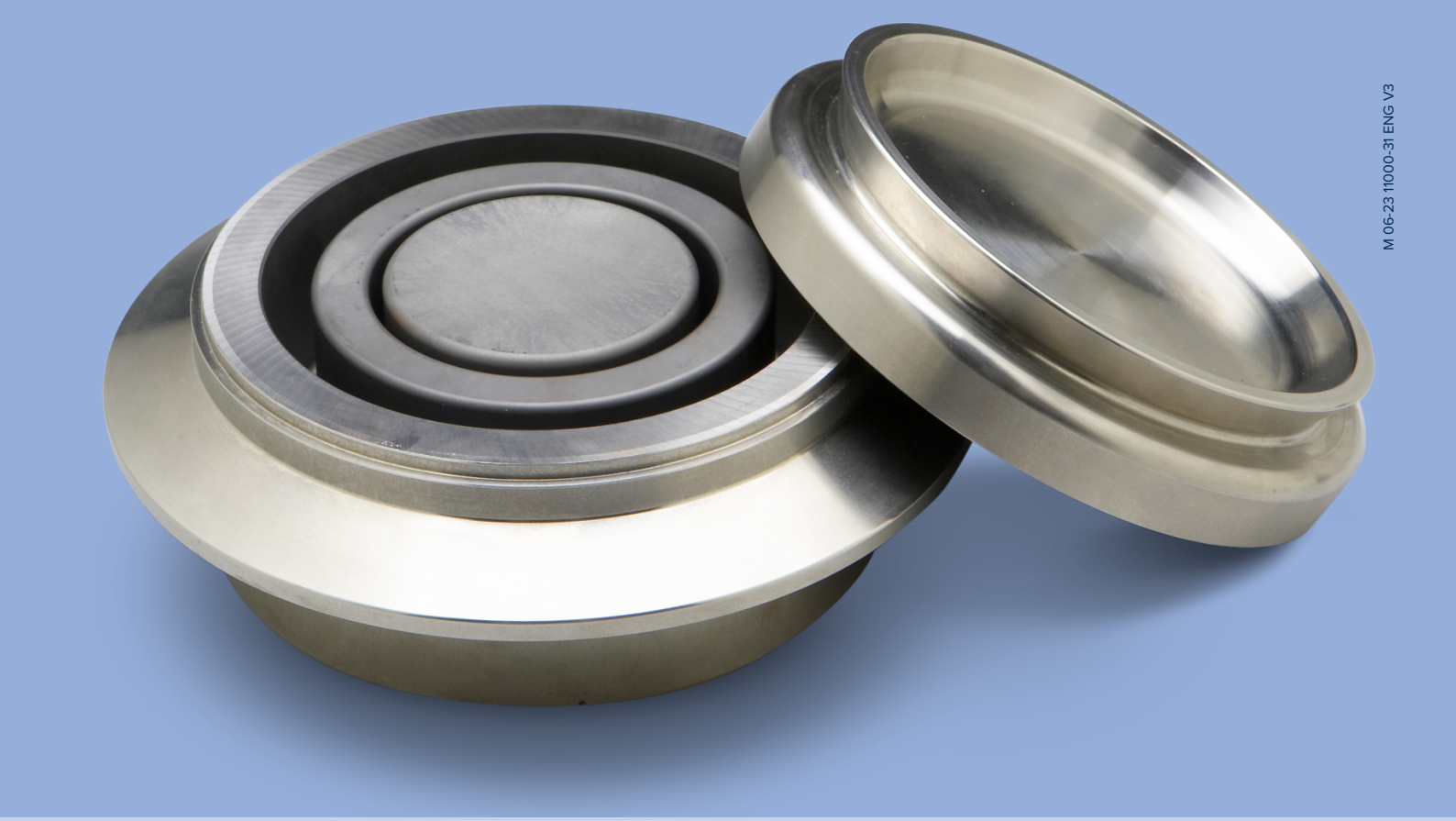

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Product datasheet

Essa® WC125 Tungsten Carbide Bowl Set

High-quality 125cc tungsten carbide grinding head for low-level, multi-element analysis sample preparation

By its very nature, most geological material is extremely resistant. Accordingly, the crushing and grinding process necessary to reduce geological material to a homogeneous powder for analysis has great potential to introduce contamination by wearing away the grinding medium. Knowledge of the type and level of contaminants introduced by grinding, therefore, is of utmost importance and ensures that the analyst can provide clients with the best analytical outcomes.

This is also true for many industrial applications where critical processes rely on accurate quality control data to maintain desired production and profitability levels.

These applications can include the production of:

- Construction materials
- Ceramics and glass
- Chemicals
- Foodstuffs
- Pharmaceutical goods plastics

In addition, many environmental and metallurgical analyses demand low contaminant levels when preparing samples for further testing.

FLS

Providing best analytical outcomes

Tungsten carbide grinding heads are made by sintering carbide powder with a cobalt metal powder binder. Tungsten carbide is the grinding head of choice for many laboratories where elemental contamination is limited to just two principal contaminants: tungsten and cobalt.

With the Essa® WC125 grinding head all surfaces in contact with the sample (bowl, ring, roller and lid) are machined from tungsten carbide. The bowl chamber and inner lid layer are encased in stainless steel to increase overall strength and to reduce material cost. The bowl and lid incorporate ergonomically-designed lifting flanges to enable easier handling when processing samples.

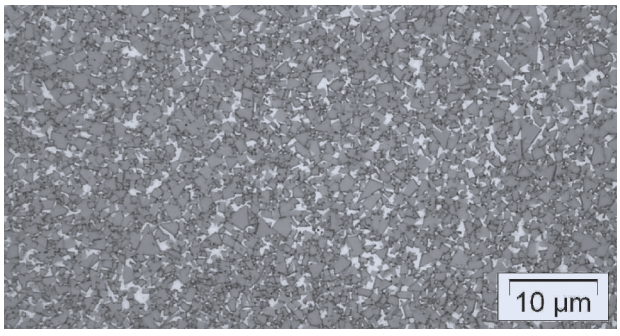
Compatible Mill (requires spacer ring)	LM2, LM201
Recomended Sample Mass	25 to 100 g
Grinding Element	Ring and Roller

Grade	
ISO Code	K40
US Industry Code	C11/C12

Physical and mechanical properties		
Average Grain Size		Fine
Density (ISO 3369)	g/cm^3	14.25
Hardness (ISO 3878)	HV10	1360
Hardness (ISO 3878)	HRA	90.0
Transverse Rupture Strength (ISO 3327)	MPa	3000
Compressive Strength	MPa	4900
Young's Modulus	GPa	560
Fracture Toughness	MPa $m^{1/2}$	12.0
Thermal Conductivity	$Wm^{-1}K^{-1}$	95
Thermal Expansion Coefficient (20-400°C)	$10^{-6}K^{-1}$	5.4
Bowl Weight		7.3 kg
Roller Weight		2.1 kg
Ring Weight		1.9 kg
Lid Weight		3.7 kg
Bowl Internal Diameter		120 mm
Bowl Internal Height		44 mm

Chemical composition	**% by weight**
Cobalt (Co)	12.0
Other	0.5
WC	Balance

Typical microstructure



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