

**SPECIFIED PRODUCT PROPERTIES**

Parameter	Value	Unit	Method
Shot content >125 µm	Max 1.0	wt%	TV316 (internal method)
Fibre length weighted average	230 ± 50	µm	TV305 (internal method)
Moisture content	Max 0.1	wt%	TV302 (internal method)
Ignition loss	Max 0.3	wt%	TV302 (internal method)

**TYPICAL CHEMICAL PRODUCT PROPERTIES**

Chemistry	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	TiO <sub>2</sub>	Fe <sub>2</sub> O <sub>3</sub>	CaO	MgO	Na <sub>2</sub> O	K <sub>2</sub> O	P <sub>2</sub> O <sub>5</sub>	MnO
wt%	42.7	18.5	1.3	7.7	20.6	6.0	2.2	0.6	0.2	0.2

Test Method: XRF

Trace elements	Chromium* (CrVI)	Thallium (Tl)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Cadmium (Cd)	Cobalt (Co)
	ppm	<0.50	<5.0	<5.0	140	<1.0	<0.40
	Mercury (Hg)	Copper (Cu)	Nickel (Ni)	Lead (Pb)	Selenium (Se)	Vanadium (V)	Antimony (Sb)
	<0.10	15	15	<10	<2.0	56	<0.10

Test Method: NEN-EN-ISO17294-2 / \* NEN-EN15192

**TYPICAL PRODUCT PROPERTIES**

Parameter	Value	Unit	Method
Shot content >45 µm	6.1	wt%	TV316 (internal method)
Shot content >63 µm	3.1	wt%	TV316 (internal method)
Shot content >125 µm	0.7	wt%	TV316 (internal method)
Shot content >250 µm	0.1	wt%	TV316 (internal method)
Shot content >600 µm	<0.1	wt%	TV316 (internal method)
Fibre diameter numerical average	5.5	µm	TV165 (internal method)
Fibre diameter numerical D10	1	µm	TV719 (internal method)
Fibre diameter numerical D50	4	µm	TV719 (internal method)
Fibre diameter numerical D90	8	µm	TV719 (internal method)
Specific surface area	0.20	m <sup>2</sup> /g	TV165 (internal method)
Fibre length distribution	Log-normal		
Aspect ratio	40	l/d	Theoretical calculation
Colour	Grey-green		Visual appearance
Colour	65 - 0.8 - 11	CIE L*a*b*	TV711 (internal method)
Hardness	6	moh	ASTM E2546-07

## TYPICAL PRODUCT PROPERTIES

Parameter	Value	Unit	Method
Extract pH	9.8		ISO787-9:1995
Acid resistance (pH)	≥3		HCl 20°C (internal method)
Alkaline resistance (pH)	≤12		NaOH 20°C (internal method)
Water solubility cold	0.2	wt%	ISO787-8-2001
Water solubility hot	0.1	wt%	ISO787-3-2001
Melting point (full liquification)	>1200	°C	DSC
Crystallization temperature	881	°C	DSC
Dimensional stability	>1100	°C	TV315 (internal method)
Softening point	833	°C	Littleton
Glass transition temperature	683	°C	DSC
Specific density	2.75	g/cm <sup>3</sup>	Chemical calculation
Elastic modulus	100	Gpa	20°C- 50%RH (internal method)
Tensile strength	800	Mpa	20°C- 50%RH (internal method)
Surface treatment	Amino-silane		
Oil absorption	20	g/100g	ASTM D281
Storage conditions	dry, <50°C		

All Lapinus products are certified biosoluble and safe for human and environment.

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Issue date: September 2018

Replaces issue: September 2017

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## Content and interpretation of the Lapinus PDS

With the new PDS, we want to give as much relevant information on our products as we can, which can better serve your needs in application development.

With the increased amount of information on the PDS, we have made a split in 'Specified', 'Chemical' and 'Typical' product properties.

The 'Specified' product properties are the properties which are controlled on a regular interval and are our specification of the product.

The 'Chemical' product properties show the chemical proprietary composition of our stone wool products. This composition guarantees that the fibres are safe to use.

The 'Typical' product properties are a list of various product properties that are known from the Lapinus® material. The list is based on past inquiries from customers in various applications. Not all properties will be relevant for all applications. The list is included in the PDS for your reference. The values of the 'Typical' product properties do not form part of the specification of the products.