

## Nano Reinforcing Filler

Technical Data Sheet

SZ0722-2020-21 V2

### GreenThinking® PF87

**Description:** GreenThinking®PF87 is a flake-shaped, soft nano-reinforcer, processed from selected natural composite mineral materials. It is produced through special nano-modification and surface treatment processes. The product has uniform chemical purity and stable particle size distribution, with most particles distributed at the fine nanoscale (over 100nm), similar to the particle size of precipitated silica, offering excellent reinforcing effects, high air tightness, wear resistance, oil resistance, fatigue resistance, heat aging resistance, and flow performance. It is particularly suitable for high-strength, high-air-tightness, aging resistance, high-filling, and easy extrusion rubber products.

**Applications:** It is a versatile nano-reinforcer, used in synthetic rubber, natural rubber, PVC, CPE, and other plastic fields, serving as a functional nano-reinforcer. It can replace various reinforcing materials (carbon black, precipitated silica ) and filling materials (kaolin, calcium carbonate, etc.) in rubber compounds, with high filling and low hardness, and excellent processing performance.

#### Key benefits:

- Reinforcement effect: Similar to N550 reinforcement, improving wear resistance, oil resistance, fatigue resistance, and heat aging performance.
- Air tightness: High air-tight rubber products, with smooth extrusion, low pressure variation, and low heat generation.
- High filling cost reduction: High filling with low hardness, without affecting flowability, effectively reducing costs.
- Processing performance: Good rubber flowability, easy extrusion, excellent dimensional stability, extended scorch time, and shortened vulcanization time.
- Physical properties: Flake structure, high porosity; high specific surface area; nanoscale, light, soft, and reasonable particle size distribution. Improved wear resistance, oil resistance, and thermal aging properties
- Chemical stability: Low impurity content, non-toxic, tasteless, and excellent chemical stability.

#### Typical properties

Physical and Chemical Properties				Chemical Analysis	
%+325 mesh (>45 um)	0.01%	Regular whiteness GEM	71	SiO <sub>2</sub>	50.30%
Median particle size D10 (nm)	73	PH (aqueous solution) AFS113-87-S	5.95	Al <sub>2</sub> O <sub>3</sub>	34.50%
Median particle size D50 (nm)	153	Moisture content AFSC-566	0.91%	TiO <sub>2</sub>	1.60%

**Recommended Dosage:** The general dosage of GreenThinking®PF87 is to replace various reinforcing agents and fillers in rubber compounds, with a dosage range of 30~150phr. The specific dosage can be adjusted according to the performance required by the product. Generally, an addition of 8-10phr can increase the hardness by one degree. The dosage should be adjusted according to the specific requirements of the product to achieve the best processing and physical properties.

**Packaging:** 25 KG/ Bag, 1000 KG/Pallet.

**Storage:** Keep in dry, cool, and sealed conditions at around 25°C, with a shelf life of approximately more than 2 years.

For More Product Information, Please Visit Our Website: [www.sanezen.com](http://www.sanezen.com)

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