

# SILKLEER

## Filter Aid

**Overview** Sil-Kleer filter aids are produced by subjecting a single ingredient, perlite rock (a naturally occurring volcanic glass), to a temperature in excess of 1500 °F. Combined moisture within the rock vaporizes and the molten glass forms a multicelled bubble cluster, then it is milled to form amorphous-shaped particles.

**Uses** Perlite filter-aids are used as a cost-effective replacement for other filter-aids, including diatomaceous earth, silica gels, and clays. They are used as a both a precoat and body feed on pressure and vacuum filters of various designs, and also as a process aid for applications on pressure leaf filters, filter presses, pressure tube, pressure belt, vacuum belt, vacuum tube, and rotary vacuum filters.

Please see back page for a list of the extensive uses of perlite filter-aids across industries.

**Structure** Once the perlite is expanded at an extreme temperature, the relatively coarse aggregate is then milled and classified to strict specifications for particle size. The resulting particles are highly amorphous and exhibit a packing arrangement that is ideal for cake filtration. Our exfoliation process allows for separation and removal of other non-perlite volcanic glasses, i.e. obsidian, which lack the amorphous shape of the perlite and are non-filtering resulting in a superior perlite filter-aid.

### Standard Chemical Analysis

**SiO<sub>2</sub>** Silicon Dioxide **73%**  
**Al<sub>2</sub>O<sub>3</sub>** Aluminum Oxide **17%**  
**K<sub>2</sub>O** Potassium Oxide **5%**  
**Na<sub>2</sub>O** Sodium Oxide **3%**  
**CaO** Calcium Oxide **1%**  
 Trace Elements **1%**

### Physical Properties

**Hygroscopic Moisture 0%**  
**Surface pH 6.5-7.5**  
**Color White**  
**Fusion Point (°F) 2300**  
**Fusion Point (°C) 1260**

### Trace Elements

Manganese	<0.3%
Sulfur	<0.2%
Titanium	<0.1%
Barium	<0.1%
Gallium	<0.05%
Boron	<0.01%
Chromium	<0.0075%
Zirconium	<0.003%
Molybdenum	<0.002%
Nickel	<0.002%
Copper	<0.0015%
Lead	<0.001%*
Arsenic	<0.001%*
Chlorine	<0.0005%

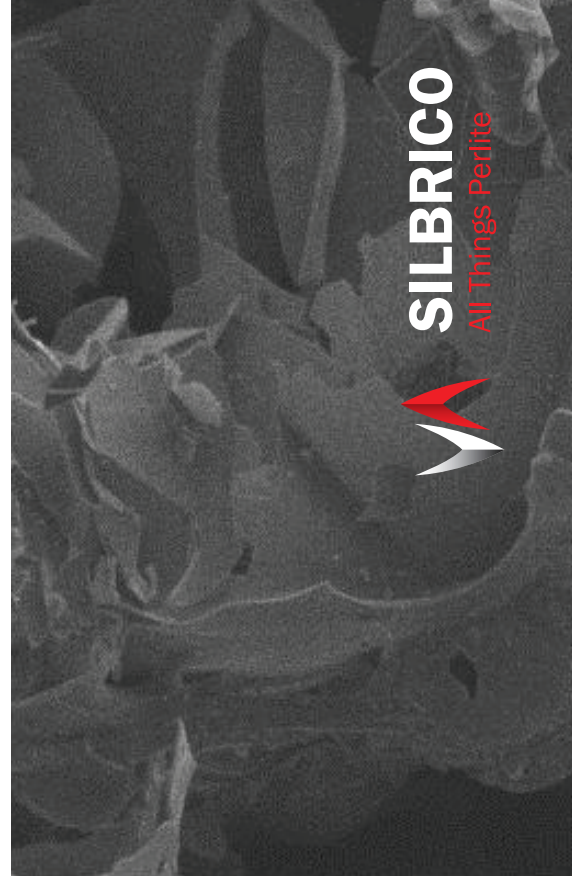
All analyses are shown in elemental form even though the actual forms present are mixed glassy silicates. Free Silica may be present in small amounts, characteristic of the particular ore body.

\*By Food Chemicals Codex Method

### Typical Filtration and Physical Characteristics

	Fine/Slow Flow		Medium Flow		Coarse/Fast Flow			Air/Gas	
	27-M	25-M	23-S	21-S	19-S	17-S	15-S	23-M	17-M
Flow Rate (mL)	300	550	750	950	1100	1300	1700	750	1300
Cake Density (bs/ft <sup>3</sup> )	12.0	8.0	9.0	8.5	8.0	7.0	6.0	7.0	5.0
Permeability (Darcy)	.2	.5	1.0	1.5	2.0	3.0	5.0	1.0	3.0
Mean Diameter (μ)	20-25	30-35	35-40	45-50	55-60	60-65	80-85	40-45	65-70
Size Range (μ)	5-120	5-140	5-150	5-180	5-200	5-300	5-300	5-200	5-300

**SILBRICO**  
All Things Perlite



## Applications

### Food Fermentation

Wine, beer, penicillins, cyclines, soy sauce, pickled fruits and vegetables

### Industrial Filtration

Solvent recovery, waste water, cyclic crudes, dyes, pigments, disposal wells, completion fluids, inks

### Metal Working

Coolants and oils, plating baths, rolling mill lubricants, surface agent oils

### Air/Gas

Baghouse precoat for asphalt, cement kilns, foundries and steel mills, coke ovens

### Industrial Fermentation

Enzymes/amino acids, bio-based chemicals, biological products, citric acid

### Process Chemicals

Sulfuric acid, inorganic and organic chemicals, chlorine, molten sulfur, gum and wood chemicals

### Energy

Biodiesel

## Perlite Benefits

- Sterile
- Inert
- Non-Hazardous
- Inorganic fused glass that is virtually insoluble
- No color, taste or odor
- Used in standard filter equipment
- Various packaging options (4 ft<sup>3</sup> bags, super sacs, bulk)
- Increased filter cloth/screen backwashing capacity
- Kosher Certified
- AAFCO approved as a feed ingredient
- Classified as having GRAS Status by FDA
- Processed/Stored in facility that only produces perlite

## Maximized Filtration

- Perlite particle overlay forms billions of microscopic openings and promotes higher flux rates
- Filter aid becomes a separation medium, thus the septum media can be sized for higher flux rates
- By forming a porous layer on the septum, you maximize capturing solids while protecting the septum
- With proper grade selection, you can achieve increased clarity
- Filter downtime and maintenance cost is reduced due to the added layer of filtration


## Cost Advantage


With a 20 to 50% density advantage, Sil-Kleer offers twice as much filtration, pound for pound, than diatomaceous earth. Filter cake density is only 7 to 12 lb/ft<sup>3</sup> or a dry density range of 6 to 10 lb/ft<sup>3</sup>. Sil-Kleer users can realize substantial savings in filtration operations with a better filter aid.


---

For more information or to arrange for samples,  
please call: **800-323-4287** or email: [info@silbrico.com](mailto:info@silbrico.com)



 6300 River Road, Hodgkins, IL 60525-4257

 (800) 323-4287

 [silbrico.com](http://silbrico.com)