

## Technical Data Sheet (TDS)

### Product Name:

**Green Grove Soil – Organic Volcanic Rock Granules (0–4 mm)**

### Manufacturer:

Green Grove Soil Fertilizer Factory

### Country of Origin:

Saudi Arabia – Medina

### Product Description:

A 100% natural porous volcanic mineral granule product (fine grade, 0–4 mm), certified for use as an organic input. It functions primarily as a root-zone management and soil-conditioning material rather than as a complete fertilizer, and is used in soil blends and peat/coco-based potting mixes to improve structure, aeration, drainage, and balanced moisture retention for healthier root development.

### Composition:

- Naturally occurring mineral oxides:
- Silicon Dioxide (SiO<sub>2</sub>)
- Magnesium Oxide (MgO)
- Sodium Oxide (Na<sub>2</sub>O)
- Calcium Oxide (CaO)
- Potassium Oxide (K<sub>2</sub>O)

### Physical Properties:

Item	Value
Granule Size	0 – 4 mm
Bulk Density	0.9 g/cm <sup>3</sup>
pH Level	7.0 (Neutral)
Moisture	< 0.6%
Color	Gray to Black
Form	Porous Lava Rock Granules (Fine Grade)

### Uses:

- Soil conditioner (soil amendment) to improve root-zone structure, aeration, and drainage.
- Improves balanced moisture retention while maintaining good drainage.
- Suitable as a structural component in potting mixes; in propagation or seedling substrates it is best used at limited proportions rather than as a sole medium for shallow trays.

- Helps reduce chronic waterlogging conditions and supports healthier root development through improved aeration.
- Contains naturally occurring mineral oxides; plant nutrition should still be supplied through an appropriate fertilization program.

#### Application Method and Rate:

- Open Field Cultivation: Incorporate approximately 5–10% by volume into the active root-zone depth (typically 15–20 cm). For the 0–4 mm grade (bulk density approx. 0.9 kg/L), this corresponds to about 7–18 kg/m<sup>2</sup>, depending on mixing depth and target proportion.
- Palm Trees: Incorporate within the wetted basin/root-zone soil rather than as a surface layer only. For a basin about 1 meter in diameter, incorporating the 0–4 mm grade through approximately 15–20 cm depth at about 5–10% by volume corresponds to roughly 5–14 kg per tree, adjusted to basin size, mixing depth, and soil condition.
- Soil / Potting Mixes: Blend approximately 25–40% by volume with peat- or coco-based mixes. When compost is included, mature compost is typically kept around 10–20% of the total mix and adjusted according to salinity and maturity.
- Soilless Growing Media / Seed-Starting Mixes: Use as a component—rather than a sole medium—in peat/coco-based substrates to improve structure, aeration, and drainage. In propagation mixes, use lower inclusion rates; lightly pre-wet or rinse to reduce fines before mixing.

#### Shelf Life:

3 years when stored in a dry place away from direct moisture and sunlight.

## Technical Data Sheet (TDS)

### Product Name:

**Green Grove Soil – Organic Volcanic Rock Granules (10–25 mm)**

### Manufacturer:

Green Grove Soil Fertilizer Factory

### Country of Origin:

Saudi Arabia – Medina

### Product Description:

A 100% natural porous volcanic mineral granule product (coarse grade, 10–25 mm), certified for use as an organic input. It functions primarily as a high-aeration root-zone medium for fast drainage, structural stability, and root-zone oxygenation, and is commonly used in media-based hydroponics, aquaponics grow beds, coarse specialty mixes, and long-life surface mulching.

### Composition:

- Naturally occurring mineral oxides:
- Silicon Dioxide (SiO<sub>2</sub>)
- Magnesium Oxide (MgO)
- Sodium Oxide (Na<sub>2</sub>O)
- Calcium Oxide (CaO)
- Potassium Oxide (K<sub>2</sub>O)

### Physical Properties:

Item	Value
Granule Size	10 – 25 mm
Bulk Density	0.7 g/cm <sup>3</sup>
pH Level	7.0 (Neutral)
Moisture	< 0.6%
Color	Gray to Black
Form	Porous Lava Rock Granules (Coarse Grade)

### Uses:

- Complete inert growing medium (soilless substrate) for media-based hydroponic systems.
- Ideal medium for aquaponics grow beds, providing high surface area for beneficial biofilm and nitrifying bacteria.
- Suitable for Dutch buckets, ebb-and-flow beds, and other container or vertical systems that use a coarse particulate medium.

- Enhances oxygenation and fast drainage in the root zone.
- Reusable after proper washing/cleaning and, where appropriate, sanitation between cycles; physically stable and free from synthetic additives.

#### Application Method and Rate:

- Soil Improvement / Potting Mixes (Chunky Mixes): Blend approximately 15–30% by volume through the full mix to improve aeration and drainage; suitable for succulents, bonsai, and orchid-type mixes. It is generally more effective throughout the mix profile than as a separate drainage layer; a thin 1–2 cm basal layer may be used only when needed to protect drain holes or add stability.
- Media-Based Hydroponics / Soilless Cultivation: Can be used as a complete medium in media-based systems; rinse thoroughly before use and manage irrigation frequency according to crop, container depth, and system design. It is not intended as a full-fill medium for NFT channels or deep-water culture systems.
- Aquaponics Grow Beds: Use as the primary medium after thorough washing to remove fines; maintain periodic cleaning to help prevent clogging and anaerobic zones.
- Vertical Farming / Container Systems: Suitable for Dutch buckets, ebb-and-flow, and other coarse-media container systems; use alone or blend according to the required air-water balance.

#### Shelf Life:

3 years when stored in a dry place away from direct moisture and sunlight.

#### Green Grove Soil

