



Blue Pacific
MINERALS

Plant+Soil+Turf



CLEVER *by* NATURE



PERMA GRO™

ARENA



IMPROVE SOIL EFFICIENCY & GRASS SEED STRIKE



SOIL
STRUCTURE



SOIL
HEALTH



MOISTURE
RETENTION



PLANT GROWTH
& NUTRIENTS

FEATURES:

- Improves soil structure
- Improves utilisation of nutrients
- Improves water management
- Easy to blend with soil, sand or fertilisers

PERMAGRO™ ARENA is a natural mineral soil amendment that is specifically graded to be blended with sand, soil or fertiliser to enhance root-zone properties.

Due to its neutral pH it has an anti-acidification effect. Its Cation Exchange Capacity (CEC) improves nutrient management and binds heavy metals.

PERMAGRO™ ARENA is an essential component in producing a world class sports turf surface that is designed to perform.

Primary sectors:

- Lawn & turf care
- Landscape
- Garden
- Sports turf



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Why use PERMAGRO™ ARENA?

- Mixed with sand, soil or fertilisers and applied in the soil profile or as a conditioner for soil aeration
- Promotes rapid germination, strong root development and a dense turf mat
- Retains and regulates moisture in the soil profile
- Reduces fertiliser use by retaining nutrients such as Ammonium (NH₄) Nitrogen (N), Potassium (K), Calcium (Ca) and Magnesium (Mg) making them available to the plant
- Reduces nitrate leaching and adds to environmental protection
- Permanent addition to the soil profile, does not dissolve away
- Binds heavy metals
- Capital investment providing short, medium and long term benefits
- BioGro Certified Input for Organics

High Performance Turf

PERMAGRO™ ARENA is a perfect soil amendment for creating high performance turf surfaces. Its grade-specific size allows easy blending with sand, promoting excellent hydraulic conductivity in high performance turf systems. Its structure resists compaction which aids deep root development.

Water retention

PERMAGRO™ ARENA is a crystalline substance with open cavities in the form of channels which have certain sizes through which the adsorption of substances occurs. Only molecules smaller than the diameter of the channel can penetrate the lattice through these channels. It is known that the inner surface area of these channels reaches several hundred square meters per gram, making extremely effective ion exchangers.

PERMAGRO™ ARENA can absorb up to 90% of its weight in moisture.

Cation exchange capacity (CEC) for nutrient retention

The negative charge of PERMAGRO™ ARENA attracts positively charged cations such as NH₄, N, K, Ca and Mg where they are chemically bonded and therefore hold and release the nutrient to the plant when required

Ammonium is the most important cation to be bound. The tiny root hairs of the plant generate acid hydrogen ions (H⁺) which exchanges with the ammonium ion bound to the lattice framework.

Permanent

With a MOHs hardness of 3, PERMAGRO™ ARENA aids in aeration and drainage of the soil, resists compaction and doesn't break down unlike lime as an example.

Binds heavy metals

Using cation exchange PERMAGRO™ ARENA bonds a range of heavy metals such as manganese, zinc, nickel, iron, cobalt, copper, lithium, barium and rubidium.

USES FOR PERMAGRO™ ARENA

As an amendment, PERMAGRO™ ARENA is combined with your soil / sand mix prior to turf being laid. Application rate vary from 500 - 1000 grams per cubic metre.

As a soil conditioner, PERMAGRO™ ARENA can be mixed with fertiliser and applied to the aerated turf at a rate of 250 - 1000 gram per square metre.

Typical recommended amendment rates to sand-based golf greens has been 10% v/v

WHAT IS PERMAGRO™ ARENA?

Bulk density	0.45 - 0.62gm / cm ³
Porosity	60%
Slurry pH	8.65 (10% aq. suspension)
CEC	100 - 120meq / 100gm
Surface area	>200m ² / gm
Pore size	~7 Angstroms
Colour	Offwhite
Absorbency	Water >80ml / 100gm
Hardness	~3 MOHs
Particle sizes	0.7mm - 1.2mm 1mm - 2mm

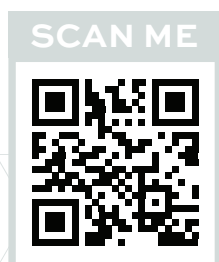
DOSAGE

	Dilution	Application
Dosage	10 : 100 v/v	Varies by soil type

PACKAGING

18kg | 800kg

Granule Size:
0.7 - 1.2mm
1 - 2mm



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ASK US ABOUT USING PERMAWET™ TO INCREASE MOISTURE RETENTION IN YOUR SOILS.



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MINERALS

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