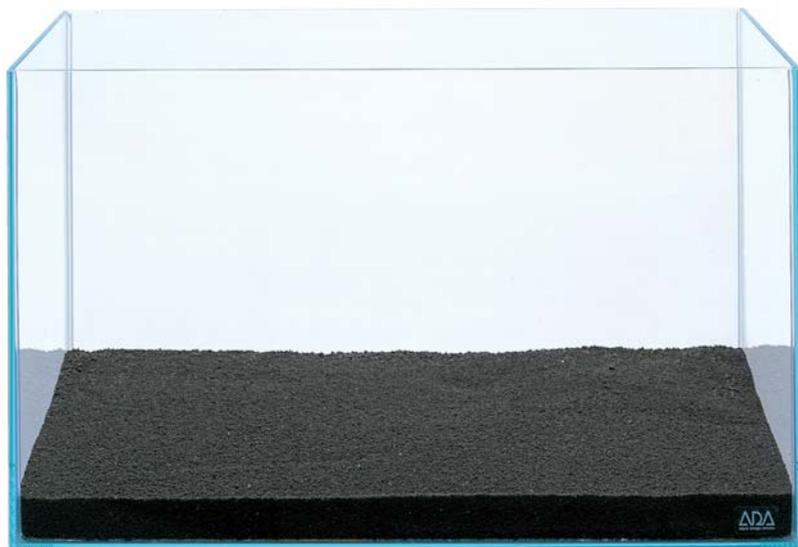


Substrate System

ADA Substrate System has been developed after thorough research on natural environments. The substrate is a key factor for the growth of aquatic plants, and especially important for their long term maintenance. The ADA Substrate System is designed to create active earth as in Nature, rich with nutrients and active bacteria. The concept is to prepare the best environment for bacteria to flourish, thereby leading to the development of the optimum substrate for planted aquariums and for a balanced ecosystem to form within it.



BACTER 100
104-111 / 100g

Containing more than 100 different kinds of micro organisms in a dormant state. Bacter 100 improves the conditions in the substrate and the aquarium water and then stabilizes the eco-system within the aquarium. To be applied at the bottom of the substrate at setup or to the aquarium water when necessary.



BACTER BALL
104-112 / 18 pz.

The same ingredients of Bacter 100 in a handy shape of balls which can be easily applied to the aquarium. It breaks down and disperses 100 different micro organisms in the aquarium shortly after applied. Particles of Bacter Ball consumed by fish or shrimp, helps activate their intestinal bacterial flora.



CLEAR SUPER
105-021 / 50g

Improves water quality while promoting the growth of beneficial bacteria. A highly refined activated carbon powder mixed with several nutrients that promote the growth of beneficial nitrifying bacteria. Supplying some to the substrate and some to the water, Clear Super absorbs excess organic substances and promotes the appearance of nitrifying bacteria. Clear Super thus removes organic substances from within the aquarium and keeps the water crystal clear. Highly effective when added at the bottom of the substrate with Bacter 100.



TURMALINE BC
104-113

Tourmaline is a mineral compound of iron, aluminium, sodium, boron, lithium and magnesium which are gradually dissolved, enriching water of important elements. Tourmaline BC is an electrostatic mineral that increases roots plant nutrition. In particular Glossostigma Elatinoides grows 50% more than its normal development.



AQUA SOIL AMAZONIA

104-021 / 9 /

104-031 / 3 /

104-041 / Powder Type 9 /

104-051 / Powder Type 3 /

Designed to create the image of Amazonia. Create an aquascape depicting the fertile South American rainforest with the dynamic alternation of rainy and dry seasons. Normal and Powder Type available.



Normal



Powder Type



AQUA SOIL AFRICANA

104-023 / 9 /

104-033 / 3 /

104-043 / Powder Type 9 /

104-053 / Powder Type 3 /

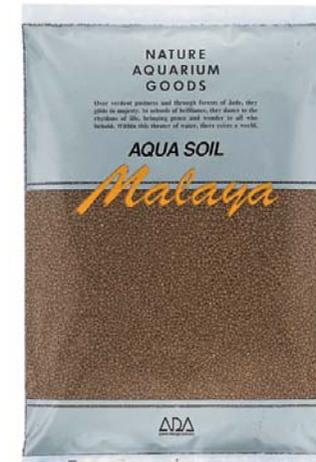
For the image of red earth baked by the burning sun. For the drama and energy of Central Africa in your aquascape.



Normal



Powder Type



AQUA SOIL MALAYA

104-022 / 9 /

104-032 / 3 /

104-042 / Powder Type 9 /

104-052 / Powder Type 3 /

Create a sanctuary left intact only in the deep jungles of Southeast Asia. Excellent substrate for a layout with aquatic plants like Cryptocoryne, Eleocharis or Blyxa. Normal and Powder Type available.



Normal



Powder Type

AQUA SOIL SERIES

A high pH level (alkaline) of the substrate causes difficulties for aquatic plants in consuming nutrients. The Aqua Soil Series decreases the hardness of the water and lowers the PH level to the degree at which most aquatic plants can consume nutrients and comfortably grow. Aqua Soil granules maintain their shape and density for long periods underwater securing good circulation of water and oxygen through the substrate. With Aqua Soil, growing difficult plants such as Tonina sp. becomes easier, and it is ideal for fishes demanding soft water.

SPECIAL FEATURES :

1. Completely new substrate made from specially processed natural material from the earth.
2. Colloid particles capture dirt floating in the water, without any chemical treatment.
3. Gives clarity to the water and creates conditions ideal for healthy growth of aquatic plants.
4. Helps to lower the hardness level of the water.
5. Helps to bring the pH level of the water down to an ideal level for most of the aquatic plants.
6. Composed of granules of size and density ideal for the fast development of healthy plant root systems, rather conventional substrates such as sand.
7. Granules maintain their shape for a long period in water, holding air between them, which is vital for the long time maintenance of a planted aquarium.
8. Used with Power Sand stimulates the fast colonization of bacteria in the substrate and creates perfect conditions for plant root systems.
9. Most desirable pH level for most aquatic plants (pH 5.5 - 6.5) to develop their root systems.
10. Available in 3 types to suit your aquarium layout.



POWER SAND SPECIAL S
104-011 / 2 l
(for aquariums up to 40 cm height)



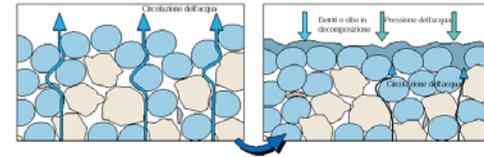
POWER SAND SPECIAL M
104-012 / 6 l
(for aquariums 40 -60 cm height)



POWER SAND SPECIAL L
104-013 / 18 l
(for aquariums over 60 cm height)

Power Sand is the base of the Nature Aquarium substrate. Power Sand is composed of porous volcanic stones, to secure proper water circulation, and of organic materials including fertile peat, to provide rich nutrients for aquatic plant roots. Ideal conditions for bacterial activity and development of plant roots are created and maintained for long periods with Power Sand.

WATER CIRCULATION IN THE SUBSTRATE WITH POWER SAND



Water circulation.
A new substrate has a good circulation of water which carries oxygen to stimulate bacterial activity and the development of plant roots. This is the ideal condition of substrate, in order to establish a balanced ecosystem. After some time, however, various factors may cause problems in the substrate.

Water pressure .
Some time after setup, water pressure or calcium in the water hardens the substrate. At this time, water circulation within the substrate is obstructed and bacterial activity declines. Such a condition causes problems in root development and growth of aquatic plants.



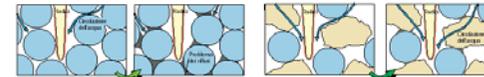
POWER SAND SPECIAL S
104-001 / 2 l
(for aquariums up to 40 cm in height)



POWER SAND SPECIAL M
104-002 / 6 l
(for aquariums 40 -60 cm height)



POWER SAND SPECIAL L
104-003 / 18 l
(for aquariums over 60 cm height)



Although problems would not appear at early stages, a substrate with only one kind of granule does not provide enough water circulation down to the bottom. In a short time, waste matters from plants and plant roots block the space between granules and obstruct the water circulation.

The mixed substrate with Power Sand at the bottom secures good water circulation due to the shape and size of the granules. Even when aquatic plants have been growing for long periods and waste matter accumulates, Power Sand composed of porous volcanic stones maintains proper water circulation.

The growth of aqua plants like Echinodorus or Cryptocoryne, plants that absorb nutrients from its root, largely depends upon the amount of nutrients within the substrate. Unlike ordinary Power Sand, Power Sand Special provides more minerals and nutrients to the substrate, as it also contains Bacter 100 and Clear Super.

Numbers of bags of Power Sand to use:

Aquarium Size	Power Sand	Power Sand Special
60x30x36cm	S (2 l) x 1 bag	S (2 l) x 1 bag
100x40x50cm	M (2 l) x 3 bags	M (6 l) x 1 bag
180x60x60cm	L (2 l) x 9 bags	L (18 l) x 1 bag

* Use the above table as a reference, and adjust the necessary amount of Power Sand, according to the kind and amount of aquatic plants to plant in the aquarium.



BRIGHT SAND
104-0251 / 8 KG
104-0252 / 15 KG

Bright Sand is a natural river sand, collected in Japan with careful process. Bright Sand is particularly suitable for stem plants. Its grains have no influence on the water conditions.



NILE SAND
104-066 / 5,2 KG
104-067 / 2,6 KG

Nile Sand is slightly grey tone color natural sand. In a combination with natural river stone, it evokes a natural riverbed atmosphere.



SARAWAK SAND
104-064 / 5,2 KG
104-065 / 2,6 KG

The warm yellow tone of Sarawak Sand harmonizes the fresh green of aqua plants and matches with the Ouko stone.



RIO NEGRO SAND
104-062 / 8 KG

Rio Negro Sand is a natural white powder grains sand. It is collected in the quite water of Rio Negro river in Amazonia. Using this sand in the front and Aqua Soil in the back, it will be possible to create marvelous layout.



Short



Long



IRON BOTTOM

104-101 / Iron Bottom

104-102 / Iron Bottom LONG

Stick of nutrient coated with iron which often becomes insufficient in an aquarium. Aquatic plants such as Echinodorus and Cryptocoryne that are two species of aquatic plants which absorb their necessary nutrients from their roots. Insufficient nutrients in the substrate sometimes causes whitening or other growth problems of such plants. Iron Bottom is an easily applied fertilizer supplement, which provide necessary elements for

the proper growth of aquatic plants. In the solid form of sticks, it contains various nutrients and is coated with trace elements, particularly iron. Slowly dissolving sticks of Iron Bottom maintain a gentle and constant supply of nutrients, which is especially important for long term care and to avoid whitening of plants. Long type is for layouts with larger plants or thick substrate.

- 30 pieces

MULTI BOTTOM

104-103 / Multi Bottom

104-104 / Multi Bottom LONG

Stick of nutrients coated with balanced formula of trace elements vital for aquatic plants. Slowly dissolved sticks of Multi Bottom contain various nutrients and are coated with trace elements such as iron, manganese, copper, zinc, molybdenum, and boron. Multi Bottom gently and constantly supplies necessary nutrients which tend to be insufficient, especially when the plants are mature and

densely grown. Long type is for layouts with larger plants or thick substrate.

- 30 pieces

RELATIONSHIP BETWEEN PLANT ROOTS AND BACTERIA WITHIN THE SUBSTRATE

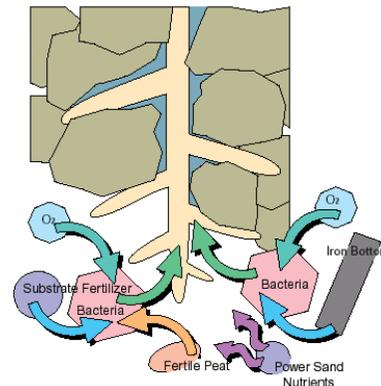
Silt gathers around plant roots and provides a good medium for bacterial colonization. Proper functions of bacteria, through their nitrifying processes, change ammonia to nitrogen compounds which are then consumed by aquatic plants through their roots.

Fertilizer in the substrate

Organic matter in Power Sand or other bottom fertilizers such as Multi Bottom or Iron Bottom, can be absorbed by aquatic plants, only when they are broken down to inorganic matter by bacteria.

Fertile peat

Works effectively to stimulate the establishment of association between bacteria and aquatic plants.



Oxygen

Sufficient supply of oxygen is vital for aerobic bacteria. Insufficient oxygen prompts the activity of anaerobic bacteria which produce toxic substances such as nitrous acid.

Nutrients in Power Sand

Nutrients contained in Power Sand are slowly dissolved and absorbed by plant roots.