

 nanotern™
SMART SUBSOIL WATER RESERVOIR



70%

of **global fresh water** is consumed by the agriculture sector

9.25

billion liters of water is lost annually due to inefficient practices

50%

of the global population experiences severe **water scarcity**

Global water scarcity & climate change

are the two main challenges in agriculture challenges today.

Rising drought and water scarcity demand urgent sustainable water solutions.

Customers face higher food prices, **farmers** battle lower yields and increased costs, and **companies** experience supply chain disruptions and soaring expenses.



Grows better with nanotern

Landscaping



FLOWER
Jasminum sambac



FLOWER
Tagetes



FLOWER
Petunias



FLOWER
Bougainvillea

Agriculture



Tomato



Strawberry



Lettuce



Peach



We are here to revolutionize the industry

by enabling farmers to grow crops without relying on inconsistent weather patterns and expensive irrigation.

Our advanced nanotechnology uses hydrophilic, **cross-linked 3D polymer network** that absorbs, stores, and slowly releases water in the soil.

Dry granules expand into a gel when exposed to rain or irrigation, keeping plants hydrated longer and more efficiently, even in water-scarce environments.



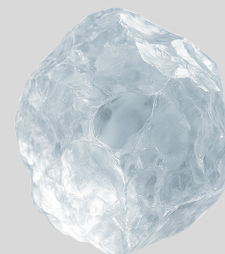
01 NANOTERN (UP CLOSE)

Nanotern is applied to the ground or area in a granule form



02 ABSORBS

Nanotern absorbs water and additives/fertilizer



03 STORES

Nanotern stores water within polymer network



04 RELEASES & ABSORBS AGAIN

Nanotern releases then absorbs water & additives/fertilizer again



Product Overview

What is **nanotern**? 



Nanotern™ is a **biodegradable super absorbent polymer** designed to act as an underground water reservoir for plants. By absorbing irrigation or rainwater and releasing it gradually, Nanotern reduces water stress and boosts plant resilience in drought-prone or soilless conditions.

Nanotern improves soil health, protects the root zone from extreme temperatures, and enhances yields, making agriculture more efficient, sustainable, and climate-resilient.

A proud product of ANT Systems™ Nanotern is engineered to solve one of farming's biggest challenges:

doing more with less water.





What is? nanotern

01

INNOVATION

Nanotern is a biodegradable superabsorbent polymer

02

REVOLUTION

Nanotern absorbs excess water and nutrients, releasing them during droughts

03

ADAPTATION

Nanotern is compatible without soil, and with all soil types and climates





nanotern contributes to

Global Reforestation

As part of ANT Systems™ sustainable living plan, **Nanotern™ contributes to global reforestation**. From our aim is to support the Africa's Great Green Wall to the UAE's mangrove restoration, and to individual's own garden's and communities.

This biodegradable super absorbent polymer boosts soil hydration and nutrient retention, **helping young trees survive** drought, develop deeper roots, and thrive in degraded landscapes or soil-less environments.





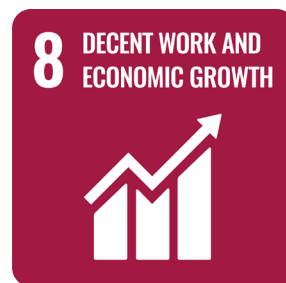
nanotern

contributes to



United Nations

6/17 of UN Sustainable Development Goals





50%

up to water savings

1800x

maximum swelling capacity

25%

up to crop yield increase

7x

longer water
retention
compared to
other products



BIODEGRADABLE

environmentally safe
and biodegradable

3.5x

more strength
underground compared
to other products



Unique Features

01 BIODEGRADABLE

Only **biodegradable** superabsorbent polymer on the market

02 CUSTOMIZABLE

Customizable to specific soil conditions and climates

03 SUSTAINABLE

Supports **eco-friendly** farming practices



nanotern and soil types

Universal Adaptability

Nanotern™ is engineered for universal adaptability, making it effective across all major soil types; including sandy, loamy, clay, silty, peaty, and chalky soils.

Its performance remains consistent in a wide range of climates, from arid and semi-arid zones to temperate and tropical regions. The **United Arab Emirates** serves as a **perfect example** of Nanotern's capabilities: despite its extreme temperatures, limited rainfall, and predominantly sandy, nutrient-poor soils, Nanotern supports healthy plant growth by retaining moisture longer, reducing irrigation needs, and creating a more stable root environment. This versatility makes it an ideal solution for challenging agricultural and reforestation efforts around the world.





Product Range: Agriculture

NANOTERN

Nanotern™ is a **polyacrylate-based** nanocomposite superabsorbent polymer enriched with **calcium and zinc fertilizers**, incorporating **halloysite nanotubes** (HNT) for enhanced strength and water absorption.

It absorbs up to **1800 times** its weight in water, releases and reabsorbs water in 40 days. Stays on soil for **5 years**, suitable for all soil types.

NANOTERN Nutri

Nanotern Nutri™ is a **cellulose-based** biodegradable superabsorbent polymer enriched with essential micro-nutrients like **boron, iron, and zinc**, providing superior water absorption and retention.

It absorbs **600-1800 times** its weight in water, fully biodegrades within 5 days, and releases nutrients to plants for up to **40 days**, making it ideal for all soil types. Nanotern Nutri **fully biodegrades** within one year.

NANOTERN Bio+

Nanotern Bio+™ is a **cellulose-based** biodegradable superabsorbent polymer in granular powder form, providing superior water absorption and retention.

It absorbs **600-1800 times** its weight in water and releases in **40 days**. Fully biodegrades on soil without any harmful effects within **1 year**, making it suitable for all soil types and agricultural applications.

NANOTERN Custom

Nanotern Custom™ is a tailored superabsorbent polymer designed to meet the specific needs of your soil.

This **custom-engineered product** ensures optimal water retention and nutrient delivery for enhanced agricultural performance.





Product Range: Agriculture

5KG

Designed for **smallholder farmers**, nurseries, and landscape contractors managing limited plots of land or ornamental plantings

15KG

A practical choice for **midsized operations**, such as; orchards, vineyards, or diversified vegetable farms

25KG

Optimized for **large-scale field applications**, including cereal crops, legumes, and industrial farming





Application Areas for Agriculture

APPLICATION MANUAL

01



**LARGE SCALE
FARMING**

02



GREENHOUSES

03



**HYDROPONIC
SYSTEMS**

04



**TREE
NURSERIES**

05



**VERTICAL
FARMING**

06



**MARGINAL
LANDS**



Product Range: Landscaping

NANOTERN

Nanotern Landscaping™ is a polyacrylate-based nanocomposite superabsorbent polymer **designed to enhance water retention** and promote healthy vegetation in landscaping projects.





Product Range: Landscaping

5KG

~50 m² lawn or 20 pots

Home gardens, balconies,
landscaping projects

15KG

~150 m² lawn or shrub beds

Medium commercial/
residential landscaping

25KG

~250 m² lawn or full park beds

Parks, municipal
plantings, large estates





Application Areas for Landscaping

APPLICATION MANUAL

01



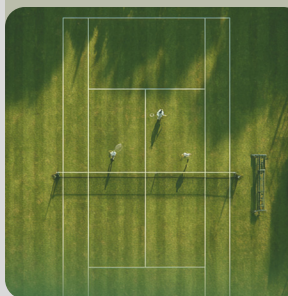
**PARKS & URBAN
STREETSCAPE**

02



**GOLF COURSES
& TURF
MANAGEMENT**

03



**SPORT COURSES
& RECREATION**

04



**HOMESTED
GARDENS**

05



**GREEN ROOF
SYSTEMS**

06



**VERTICAL
GARDENS**



Product Summary

	Micron Size	Stays in Soil	Swelling	Biodegradable	Large Scale Farming	Greenhouse	Hydroponic Farming	Saplings	Landscaping	Drone
Nanotern	Ø 15mm	5 year	x 1800							
Nanotern Bio+	Ø 30mm	1 year	x 1800							
Nanotern Nutri	Ø 15mm	1 year	x 1800							
Nanotern Custom	Ø 8-30mm	1-5 years	x 1800							
Nanotern Landscaping	Ø 8mm	5 years	x 1800							



Product Prices

	Micron Size	Price Per Kilogram (\$USD)
Nanotern	Ø 15mm	\$25 USD (per kg)
Nanotern Bio+	Ø 30mm	\$30 USD (per kg)
Nanotern Nutri	Ø 15mm	Upon Request
Nanotern Custom	Ø 8-30mm	Upon Request
Nanotern Landscaping	Ø 8mm	\$20 USD (per kg)

Ø8mm



Ø15mm



Ø30mm



Visual representation of
the granule micron size:



The Advantage Points

01

WATER SAVINGS

Efficient water usage, **reducing overall consumption**

04

ACTIVE AGENT RELEASE

Controlled release of beneficial agents for **sustained effectiveness**

02

YIELD INCREASE

Enhanced crop productivity and **higher yields**

05

INCREASED SODIUM UPTAKE

Ability to **manage sodium levels effectively**

03

SALINITY RESISTANCE

Tolerance to soil salinity, **maintaining crop health**

06

NANO COMPOSITE STRUCTURE

Advanced technology for **optimal performance**

Global Shipment

International Connections

ANT Systems™ delivers its technologies globally, with active shipments to countries including Peru, Brazil, Türkiye, Iraq, the United Arab Emirates, Egypt, and more.

Our logistics network is built to support diverse agricultural and environmental needs, from desert restoration to large-scale farming, ensuring timely and secure delivery. With production and fulfillment centers strategically located, we efficiently serve partners across Latin America, the Middle East, Europe, and beyond. Each shipment is handled with care, complying with international standards to guarantee quality, reliability, and impact at every destination.





Client Testimonials

“ Since using **Nanotern**-treated produce, I’ve noticed a **significant difference in taste** and freshness. It’s reassuring to know that my fruits and vegetables are grown sustainably.”

CONSUMER | **TÜRKIYE** Zeynep M.

“ **Nanotern** has transformed how we **manage water on our farm**. We’ve seen higher crop yields and reduced irrigation costs, making our operations more efficient and environmentally friendly.”

FARMER | **PERU** Milagros D.

“ As a company committed to sustainability, **integrating Nanotern into our operations** has been a game-changer. It aligns perfectly with our goal of reducing environmental impact while maintaining high-quality crop production.”

COMPANY | **UAE** Zainab S.





Frequently Asked Questions (FAQs)





“ What is **Nanotern** and how does it work?”

A: **Nanotern**[™] is a smart subsoil water reservoir designed to enhance water retention and availability in the root zone. It uses advanced nanotechnology to store water and gradually release it to plants as needed.

“ What makes **Nanotern** different from traditional soil additives or hydrogels?”

A: Unlike conventional additives, **Nanotern** integrates with the soil structure and operates passively over extended periods.

“ In what types of environments or climates is **Nanotern** most effective?”

A: **Nanotern** is ideal for arid, semi-arid, and drought-prone regions but is also beneficial in standard agricultural settings where water efficiency and soil improvement are priorities.



“ Is **Nanotern safe for crops, soil, and the surrounding ecosystem?”**

A: Yes. **Nanotern**[™] is engineered to be environmentally friendly, biodegradable, and non-toxic. It supports healthy root development and promotes microbial balance in the soil.

“ How long does **Nanotern remain effective after application?”**

A: Depending on soil conditions and climate, **Nanotern** can remain active in the soil for several seasons, providing long-term benefits without the need for frequent reapplication.

“ Can **Nanotern be used alongside fertilizers and other soil treatments?”**

A: Absolutely. **Nanotern** is compatible with most standard agricultural inputs and can even improve the efficiency of fertilizer uptake by keeping nutrients accessible in the root zone.



“ Is **Nanotern biodegradable?”**

A: Yes, **Nanotern**™ is fully biodegradable. It is designed to break down naturally over time without leaving harmful residues in the soil, ensuring long-term environmental safety and sustainability.

“ Is **Nanotern non-toxic?”**

A: Absolutely. **Nanotern** is non-toxic and safe for plants, soil, microorganisms, and humans. It contains no harmful chemicals, making it suitable for both conventional and organic agriculture.

“ How many times do we have to renew **Nanotern?”**

A: **Nanotern** typically remains active in the soil for up to two growing seasons, depending on climate and soil conditions. Reapplication may be done every 18–24 months for optimal results.



“ Do we need specific equipment to apply Nanotern?”

A: No special equipment is required. **Nanotern™** can be applied manually or mechanically, either mixed into the soil or placed directly around plant root zones. It integrates easily into existing farming or landscaping workflows.

“ How does Nanotern work in soil-less conditions?”

A: In soil-less systems like hydroponics or urban landscaping setups, **Nanotern** helps retain moisture and nutrients around the root zone. Its absorbent and slow-release properties provide added stability and efficiency even without traditional soil.

“ Can Nanotern be used in all soil types and climates?”

A: Yes, **Nanotern** is formulated to be effective across all soil types—sandy, loamy, clay—and in a wide range of climates, from arid to temperate. Its adaptability makes it a valuable tool for water retention and plant health worldwide.

TAG Dış Ticaret ve Danışmanlık Limited Şirketi is the authorized dealer and strategic consultant of Ant Systems Nano Teknoloji Arge ve Ticaret A.Ş.



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nanotern
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Nanotern™ is a patented product of ANT Systems™