NANOAG™

Agriculture Bio-Based Adjuvant

NANOAG

Product of Biomolecular Nanotechnology.

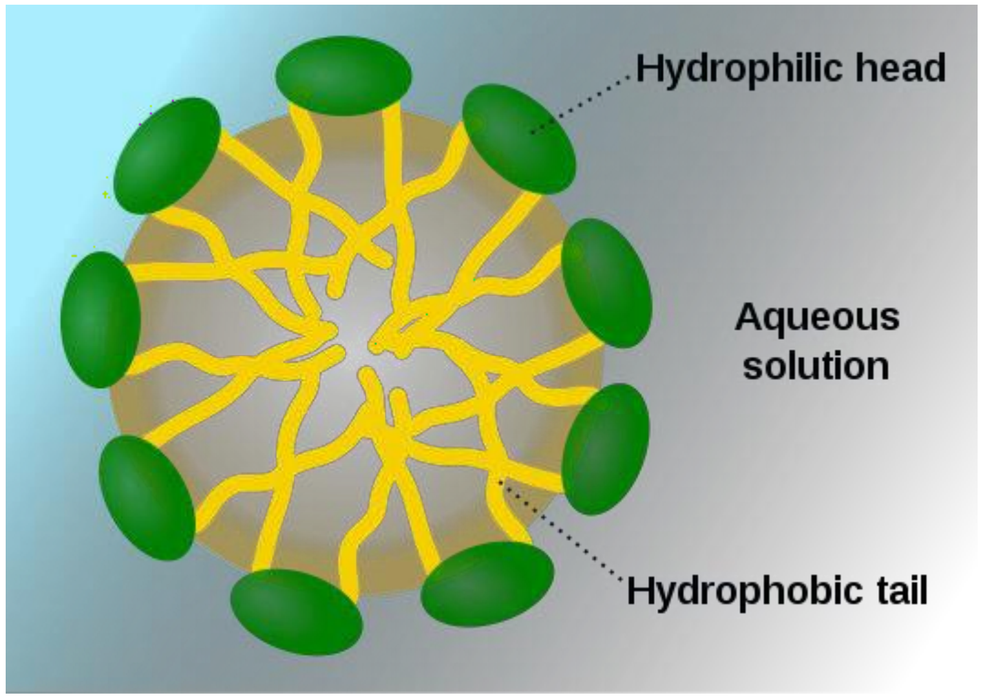
A unique combination of all-natural ingredients mixed using a proprietary process.

A specialized chemical reaction produces super surface-active *amphiphilic* molecules (can mix with both oil and water)

They have a water-attractive (hydrophilic) head and an oil-attractive (hydrophobic) tail.

They appear structurally similar to traditional soap/detergent molecules.

Before use they form micellar nanoparticles with the heads outside and tails inside.



NANOAG micellar nanoparticles:

1

Accelerate the decomposition process of organic compounds (biodegradability).

2

Have hundreds of applications across multiple and diverse industries.

3

Penetrate and rupture cell walls of bacteria, viruses and mold spores (e.g. E. coli and Salmonella bacteria.

Of any competitive adjuvant on the market, only NANOAG can proudly fulfill ALL FOUR of these claims:

- ✓ 100% Non-toxic
- ✓ Natural & biobased
- ✓ Readily Biodegradable
- ✓ Cost Effective

NANOAG™

Agriculture Bio-Based Adjuvant

Get Fertilizer in the Plant Where it Needs To Be!

Make Fertilizers Work Quickly and Effectively on Today's Hardest Grounds

The Best Adjuvant on the Market!

What makes NANOAG BioBased Adjuvant so unique?

*** Impressive results * Enhances crop yields significantly**
*** Bigger and Healthier crop * Eco-friendly, Biodegradable and non-toxic**
*** Safe for spraying and pumping equipment**

Regardless of whatever nutrient or fertilizer you use, **NANOAG** BioBased Adjuvant will super charge them to promote stronger and greater quality plants or crops.

In addition to being competitively priced, biodegradable and non-toxic **NANOAG** BioBased Adjuvant is created by a proprietary complex mixing process.

Through nanotechnology, our unique formulation, yields an adjuvant that works more efficiently and effectively because of the micro nano-micelles cells it produces. The smaller the nano molecules the greater and more rapidly the transfer of food to the plant.

These minuscule particles, multiple times smaller than any other available adjuvant on the market today, enable **NANOAG** BioBased Adjuvant to combine with any plant nutrient or fertilizers applied. This allows **NANOAG** BioBased Adjuvant to penetrate more efficiently, with greater coverage and sticking ability, thereby rapidly delivering a significant and higher percentage of nutrients to the plant, either at the root level or through foliar application.

No other available adjuvants can match **NANOAG** BioBased Adjuvant's amazing absorption qualities and effectiveness to growing larger and healthier plants and crops.

Use less chemical and still have better results!

Growers and commercial applicators all across the united states are buying and using one of our top selling products; NANOAG BioBased Adjuvant because it works. Studies, intensive trials and user feedback have all concluded that NANOAG Biobased Adjuvant boosts the effectiveness of every foliar fertilizer. Foliar fertilizer applications are now showing great improvements in crop production.

NANOAG *may be applied:*

By Ground

By Air

Sunflowers: South Dakota

A Field Crowded Full with Large, Healthy Plants

Sunflowers Bigger Than a Man's Hand

Control: Left Side

Test: Right Side

Test Plot:
Notice how uniformly large and full the ears are on every plant

NANOLAVA.COM

WITHOUT NANOAG BioBased Adjuvant

NANOAG™

NANOLAVA.COM

WITH NANOAG BioBased Adjuvant

NANOAG™

Effective, Affordable, Easy to Use

NANOAG BioBased Adjuvant is the last adjuvant you will ever need to buy; it’s that good!!!

What makes NANOAG the Greenest product on the planet?

- Sourced from 100% all-natural plant-derived, sustainable raw ingredients
- Energy- and resource-efficient manufacturing process with low environmental impact
- Resource-efficient concentrate form
- Decontaminates toxic chemicals, kills germs
- Runoff wastewater continues to decontaminate drains, sewers and waterways

How safe is NANOAG?

- ✓ NANOAG contains NO: Chlorine; Ammonia; VOCs; SVOCs; POMs; Biocides; Pyrethroids; NPEs; PCBs; PAHs; Organophosphates; Phthalates. It is as safe as drinkable water.

- ✓ All NANOAG ingredients meet criteria for the US EPA Design for the Environment Program (DfE)/Safer Detergents Stewardship Initiative (SDSI)

- ✓ None of the ingredients appears on the California Proposition 65 or Canadian CEPA-DSL lists

- ✓ Certified by the USDA Bio-Preferred Program

- ✓ Absolutely nontoxic and harmless to humans and animals,

- ✓ ***10 times safer*** to aquatic life than conventional detergents.

- ✓ Allergic and chemically sensitive people can use it with complete confidence and safety.

NANOAG is available in:

55 gallon drums

275 gallon IBC totes

NANOAG™

Agriculture Bio-Based Adjuvant

Products of Biomolecular Nanotechnology.

www.nanolava.com

NANOLAVA™

the future of cleaning green!

NANOLAVA™ Products of Biomolecular Nanotechnology.

No other cleaners available on the market have the combined unique characteristics contained in **NANOLAVA™** products. All are **non-toxic, biodegradable**, highly effective surfactants that are safe for both land and marine environment. They can be used freely without fear of contamination or toxic impact on soil or water.

Industrial, Manufacturing and Mechanical facilities often utilize chemicals that pose both long- and short-term health risks to their employees. The use of toxic cleaners and degreasers in Industrial settings pose an inherent risk to the very people they are intending to assist.

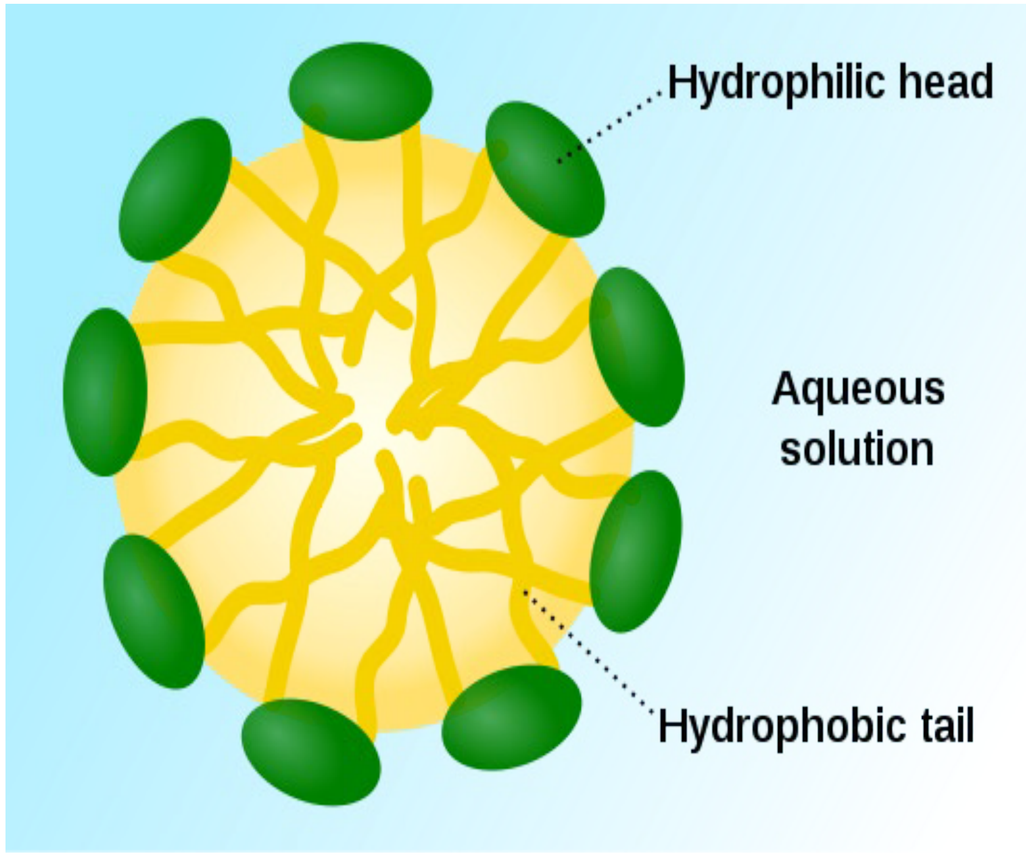
Research shows that low-level exposure of chlorine bleach produces measurable unhealthy effects, and that long-term, low-level exposures can cause cumulative physical damage. Exposure doesn't have to be substantial to create adverse health effects. Choosing the least toxic product to begin with is the first step toward prevention of possible short-term harm and almost certain long-term risk. Exposure of toxic chemicals can result in health problems such as asthma, liver or kidney damage and even cancer.

NANOLAVA™ products are eco-friendly, competitively priced, yielding superior results.

NANOLAVA™ Products of Biomolecular Nanotechnology.

Nano-technology creates extremely small particles made from natural plant oils, plants oils and extractions. By creating a colloidal micelle, the characteristics are changed so that the tiny spherical particles are both hydrophobic and hydrophilic chemical properties. They form mild solutions that dissolve heavy grease, oil and other hydrocarbons. The dissolved oil becomes biodegradable and breaks down into nitrate, dissolved oxygen, carbon dioxide and water.

This powerful, totally non--toxic surfactant is a unique combination of natural ingredients formulated using a proprietary process. Our proprietary and unique formula results in a specialized chemical reaction that produces super surface--active *amphiphilic* molecules (can mix with both oil and water). These molecules have a water--attractive (hydrophilic) head and an oil--attractive (hydrophobic) tail.



NANOLAVA™ Products of Biomolecular Nanotechnology.

They appear structurally similar to conventional soap, detergent and surfactant molecules but are many times smaller than them. Prior to actual application they form micellar nanoparticles with the heads outside and tails inside. These nanoparticles form mild solutions that dissolve heavy grease, oil and other hydrocarbons.

The dissolved oil becomes biodegradable and breaks down into nitrate, dissolved oxygen, carbon dioxide and water.

Because of their extremely small size they work much more effectively and efficiently than conventional soaps, detergents and surfactants. The average diameter of has been measured to be approximately **4 nanometers**.

The micelle size of **NANOLAVA™** surfactants was obtained by Dynamic Light Scattering (DLS) Technique. DLS measurements were performed on a Proton Correlation Spectrometer with a BI9000 AT Digital Correlator (Brookhaven Instruments) equipped with a Compass 315M---150 Laser (Coherent Technologies), which provides a green light source (λ=532nm).

NANOLAVA™ Products of Biomolecular Nanotechnology.

Data obtained from DLS can be interpreted in different ways using different mathematic models. The figure below, which uses a Cumulant model, is the easiest and most common interpretation of the measurement.

	Gamma (s^{-1})	Diff. Coef. (cm^{2} s^{-1})	Eff. Diam. (nm)	Poly	Skew	Kurtosis
Linear:	4.808e+04	9.685e-07	5.1			
Quadratic:	6.063e+04	1.221e-06	4.0	0.187		
Cubic:	6.573e+04	1.324e-06	3.7	0.323	0.30	
Quartic:	6.957e+04	1.401e-06	3.5	0.453	0.62	3.20

NANOLAVA™ Products of Biomolecular Nanotechnology.

Gamma is the average decay rate, and Diff. Coef. is the Diffusion Coefficient.

Both of these values characterize the moving speed of the micelles in solution, i.e., Brownian movement or thermal diffusion.

The larger the micelle, the lower the diffusion coefficient. The micelle size can be solved from the Cumulant model with four different orders of approximation.

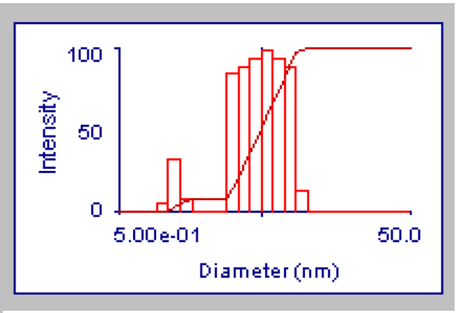
Each order provides a slightly different micelle size (Eff. Diam) in nanometer (nm) units, which is the DIAMETER of the micelles.

Since the quadratic (4.0) or cubic (3.7) results are typically used, that result indicates that the **NANOLAVA™** products micelles are approximately 4 nm with polydispersity (Poly) index of about 0.2 to 0.3.

NANOLAVA™ Products of Biomolecular Nanotechnology.

The following two figures are different interpretation of the measurement with more complicated models. CONTIN mode (below) is better when there is a polydispersed system.

Sample ID	121210_T7 Culture_P1_B1_800nmF
Operator ID	Mohid
Elapsed Time	00:10:00
Mean Diam.	4.7 (nm)
Rel. Var.	0.149
Skew	0.046
RmsError	6.4976e-03



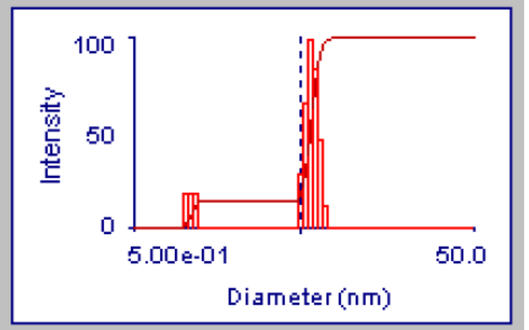
d	G(d)	C(d)	d	G(d)	C(d)	d	G(d)	C(d)
1.00	6	1	7.38	90	98			
1.20	33	6	8.86	13	100			
1.44	9	8	10.62	0	100			
1.73	0	8	12.74	0	100			
2.07	0	8	15.28	0	100			
2.48	0	8	18.32	0	100			
2.98	86	22						
3.57	90	36						
4.28	95	52						
5.13	100	68						
6.16	95	83						

This chart indicates that **NANOLAVA™** surfactants micelles have two populations:

One is about 1.2 nm and the other one is around 5nm, so the overall average (Mean Diam.) size from this model is 4.7 nm, which agrees well with the Cumulant result when polydispersity is considered.

NANOLAVA™ Products of Biomolecular Nanotechnology.

Sample ID	121210_T7 Culture_P1_B1_800nmF
Operator ID	Mohid
Elapsed Time	00:10:00
Mean Diam.	4.9 (nm)
Rel. Var.	0.110
Skew	-1.741
RmsError	6.1083e-03



d	G(d)	C(d)	d	G(d)	C(d)	d	G(d)	C(d)
1.00	19	5	2.04	0	14	4.15	0	14
1.07	19	10	2.17	0	14	4.43	0	14
1.14	19	14	2.32	0	14	4.73	30	22
1.21	0	14	2.48	0	14	5.05	66	39
1.30	0	14	2.64	0	14	5.38	100	64
1.38	0	14	2.82	0	14	5.74	85	85
1.47	0	14	3.01	0	14	6.13	47	97
1.57	0	14	3.21	0	14	6.54	13	100
1.68	0	14	3.42	0	14	6.97	0	100
1.79	0	14	3.65	0	14	7.44	0	100
1.91	0	14	3.89	0	14	7.94	0	100

NNLS is another model to interpret the measurement, which gives a quite close value of 4.9nm.

It is important to note that all these results represent an average of statistical results, so the approximate level of 4f 5 nm in all these results are sufficiently valid for all practical purposes.

NANOLAVA™ Products of Biomolecular Nanotechnology.

A 4-nanometer diameter micelle has resulted in an unsurpassed level of dispersion and biodegradability of nonpolar hydrocarbon molecules in water due to its powerful *super surface activity***.**

Compared to conventional surfactants, **NANOLAVA™** products have significantly higher surface activity due to their unique natural enzymes. When **NANOLAVA™** Cleaner is applied to grease and oil contaminants, its micellar nanoparticles automatically dissociate. The tails immediately attract oil/grease molecules and leave the water attractive head outside. The heads bond with and are completely surrounded by water molecules.

When flushed with water, the trapped oil and grease molecules are completely dissolved and removed as a biodegradable residue. Due to their submicroscopic size, oil and grease particles are broken down into particles much smaller and dispersible than with other surfactants and thus are much more readily biodegradable under natural conditions.

NANOLAVA™ micellar nanoparticles:

1

Accelerate the decomposition process of organic compounds (biodegradability).

2

Have hundreds of applications across multiple and diverse industries.

3

Penetrate and rupture cell walls of bacteria, viruses and mold spores (e.g. E. coli and Salmonella bacteria.

NANOLAVA™ INGREDIENTS:

All-Natural ingredients including: Water, Organic Alcohol and Oils, Botanic Enzymes and Minerals; Biobased Fatty Acids* & Sodium Bicarbonate.

How safe are NANOLAVA™ products?

NANOLAVA™ products are made with natural, organic and biobased* ingredients (*as certified by the USDA BioPreferred Program)

NANOLAVA™ products contain NO: Chlorine; Ammonia; VOCs; SVOCs; POMs; Biocides; Pyrethroids; NPEs; PCBs; PAHs; Organophosphates; Phthalates. They are as safe as drinkable water!

NANOLAVA™ products ingredients meet criteria for the US EPA Design for the Environment Program (DfE)/Safer Detergents Stewardship Initiative (SDSI).

None of our products ingredients appear on the California Proposition 65 or Canadian CEPA-DSL lists.

Absolutely nontoxic and harmless to humans and animals, 10 times safer to aquatic life than conventional detergents.

Allergic and chemically sensitive people can use our products with complete confidence and safety.

www.nanolava.com

NANOLAVA™

the future of cleaning green!

What makes NANOLAVA™ the Greenest products on the planet?*

1. Sourced from 100% all-natural plant derived, sustainable raw ingredients. **NANOLAVA™** products are a proprietary, Nano-technology/Colloidal Micelle Soap Formula made from Natural ingredients including: Water, Organic Alcohol and Oils, Botanic Enzymes and Minerals; & Biobased Fatty Acids*; Sodium Bicarbonate.

2. **NANOLAVA™** products are Eco-friendly, biodegradable, easy to use and safe cleaning solutions that will not harm the environment, humans, animals or plants.

3. Energy and resource-efficient manufacturing process with low environmental impact.Resource-efficient concentrate form, diluted with water to desired strength.

4. **NANOLAVA™** formulas replace nearly all other cleaning, sanitizing and disinfection products.

5. Decontaminates toxic chemicals and kills germs., virsuses, bacteria, pathogens, fungus, mold & mildew.

6. Runoff wastewater helps decontaminate drains, sewers and waterways.

MADE WITH ORGANIC AND NATURAL NON-TOXIC BIOBASED INGREDIENTS

www.nanolava.com

NANOLAVA™

the future of cleaning green!

	Conventional Cleaners	Eco-Friendly "Green" Cleaners	NANOLAVA™ Products
100% Non-Toxic	NO	Sometimes	YES
Readily Biodegradable	NO	YES	YES
Industrial Strength	YES	NO	YES
Rinseless	NO	NO	YES
Multi-Purpose	Sometimes	Sometimes	YES
Cost Effective	Sometimes	Sometimes	YES

OUR MISSION

NANOLAVA™ is manufactured in the United States of America.

NANOLAVA™ is dedicated to improving quality of life and health
by making high performance, non-toxic cleaning solutions.

NANOLAVA™ makes products that are 100% safe and effective,
offering an alternative to the growing number of harmful chemicals
in other cleaning, sanitizing and disinfecting products, on the market today.

OUR COMMITTMENT

1. To provide safer, healthier environments for homes, businesses, healthcare facilities, government and to the general public overall.

2. To reduce or eliminate toxic products that pollute our daily lives by providing consumers with superior-quality toxin-free alternatives.

3. To improve the quality of life and health for our families, our communities and all creatures in our environment.

4. To help make our entire Planet Clean and Green for our collective future.

Design for the Environment
U.S. EPA
Safer Detergents Stewardship Initiative

MADE WITH ORGANIC AND NATURAL NON-TOXIC BIOBASED INGREDIENTS

MADE IN USA

www.nanolava.com

NANOLAVA™
the future of cleaning green!

NANOAG – Our Mission

NANOAG is manufactured in the USA.
We are dedicated to improving the quality of life and health by making high performance, non-toxic agricultural solutions that are safe and effective alternatives to the growing number of harmful chemical compounds on the market today.

OUR COMMITMENT:

- To provide safer, more healthful environments at home, at school and at work.
- To reduce or eliminate toxic products that pollute our daily lives by providing consumers with superior-quality toxin-free alternatives.
- To improve the quality of life and health for our families, our communities and all creatures in our environment.
- To make our entire Planet Clean and Green for our collective future.

NANOAG™

Agriculture Bio-Based Adjuvant

THANK YOU!