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Liposomal Micelle | Improved Bioactivity-availability



$\alpha$ -Tocopherol



**Esolv®**

**Virun's proprietary and patented clean label claim micro-encapsulation technology.**

*Micelle and Liposomal encapsulation, such as **Esolv®**, have been shown to improve the oral bioavailability of water insoluble compounds compared to non-encapsulated.*

# THE SCIENCE

**Esolv® is a patented, natural, Vitamin E emulsifier.**

Esolv® is a patented, natural, Vitamin E emulsifier that is produced through polymerization, which creates more complex molecular chains. It is then naturally emulsified in water, and allows the Vitamin E to become more water dispersible.

We further process it to remove any free polymers, which results in a clean label Vitamin E as **Alpha Tocopherol**.

Our products using Esolv® are ten times more likely to be highly bioavailable.

The human body absorbs water soluble nutrients much more easily, and insoluble compounds such as *Curcumin, CoQ10, Lutein, Lycopene, Beta Carotene, and other compounds* are dissolved into water solutions, making the liquid easily dispersed.

## IT'S ALL ABOUT THE MICELLE + LIPOSOMES

Esolv® encapsulated, water insoluble compounds have been shown to increase as much as 8 times, or 800% absorption.

**Liposomes and Micelles not only increase bioavailability, but also has a sustained release effect.**

Esolv® are amphiphilic micelles, with the ability to be dissolved in both water and oil. Esolv® can produce micelles as small as 10–20nm particle size.

*The exact diameter range needed to be absorbed into the body.*

**The better it dissolves, the better it is absorbed.**



# FINISHED PRODUCT + POSSIBILITIES

Esolv® encapsulated into Micelles and Liposomes have been shown to improve the overall half-life, bioavailability and sustainability of the active compounds being delivered, for example:

- Curcumin,
- EPA, DHA,
- ALA,
- SDA,
- GLA (Gamma Linoleic Acid),
- Vitamin D,
- Vitamin K2,
- Vitamin K2,
- PQQ (Pyrroloquinoline quinone),
- Ubiquinone,
- Vitamin E,
- MCT, and
- Astaxanthin.
- ...and more!

## Dry Powders



Spray-dried Astaxanthin powder

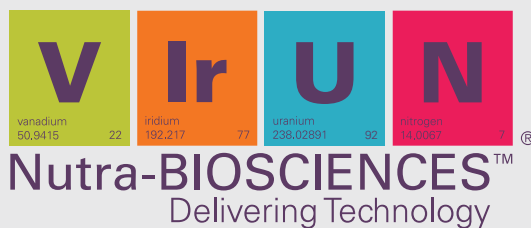
**Dry powders with high concentration of non-polar compounds and healthy fats. Patents and Patents-pending. In-house micro-encapsulation.**

- Spray dry microencapsulation for non-polar compounds and fats, such as:
  - \*10% CoQ10 Powder
  - \*3% Astaxanthin Powder
  - \*12% DHA Omega 3 (in partnership with Algorithm DHA in Canada) Powder
  - \*EPA DHA Omega3 Powder
  - \*60% MCT from coconut oil Powder
  - ..and many more
- Agglomeration for quick-dissolving powder used in Stick Packs, Direct Compressible for Tablets and Powder Pouches.



## Esolv® Liquid Emulsions, Patents and Patents-pending apply

- Microencapsulation of liquid emulsions for finished products with good flavor
- Microencapsulation of liquid emulsions for further processing
- Nanotechnology of liquid emulsions for further processing clear type applications



# Creating Impossible Products.