

ASN Technologies Pte. Ltd. (Singapore)

- Graphene Oil Concentrates -



: Graphene : Carbon Based 'Wonder Material'



Since its discovery in 2003, graphene has been a hot topic in chemistry and materials science research. It's been linked with water purification, electronics, biomedical, structural material applications.







: Graphene : Next Generation Lubricant



- Graphene being two dimensional material, offers unique low friction and anti-wear properties that is not typically seen in conventional materials
- Graphene has well established thermal and mechanical properties to serve as a solid or a colloidal liquid lubricant
- Graphene is chemically inert, extremely strong and has inherent smooth surface, the reasons for it to have its impressive tribological behavior.
- Graphene has extreme mechanical strength that helps suppresses material wear.
- Graphene is impermeable to liquids and gases, such as water and oxygen, thus slowing down the corrosive and oxidative degeneration, while also minimizing friction on the rubbing surfaces.

Graphene : A very attractive for the required tribological applications to achieve low friction and low wear.



: Graphene : **Oil Concentrates**



Challenges & Limitations

Aspect Ratio:

The technology to manufacture Graphene specifically designed for maximizing the tribological potential for lubricants.

Dispersion:

There is a great concern on the dispersion of Graphene. Over coming the Van Der Waals forces for fine dispersion of Graphene in a liquid slurry is a big challenge.

ASN Technologies

Along with our technology partners we have the required know how and experience for providing a custom Graphene manufactured for maximizing the tribological potential for lubricants while maintaining its key properties of thermal conductivity and strength.

The product is supplied as a well dispersed Graphene, called "Graphene Base Oil Concentrate".

An Oil Company can use this "Graphene Base Oil Concentrate" as an additive in their formulations in recommended dosing using their conventional blending equipment currently being used to blend other additives.



: Graphene : Graphene Oil Concentrates – Expected Results



Following are the expectations you can have from "Before" and "After" addition of our Graphene Oil Concentrates:

E.g. Applications:

For Engines / Machines:

(Engine Oil and Lubricating Oil)

- 1. extended engine / machine life
- 2. reduced engine / machine vibration
- 3. improved power output
- 4. reduction in engine / machine wear
- 5. improved fuel economy (reduced friction, reduced
- heat generation and faster heat dissipation)
- 6. enhanced ride comfort

For Machining Centres :

- (Cutting Oils)
- 1. extended life of Drill Tips
- 2. cutting quality is improved
- 3. improved cutting heat dissipation

Many more

: Graphene Oil Concentrates :

Providing endless opportunity for expanding the horizons for an "Oil and Lubricants" company

ASN

Thank You

ASN Technologies Pte. Ltd. 60 Paya Lebar Road #10-08 Paya Lebar Square Singapore 409051

Phone: +65-96617496