

What is Nanodiamond?

Nanodiamond is a basic property that has both the surface effect of Nanomaterials and the abrasiveness of diamond. In addition, it also has special properties such as high chemical activity and low Debye temperature.

The characteristics of Nanodiamond

1. Large lattice constant: X-ray diffraction analysis shows that the lattice constant of Nanodiamond is about 0.360~0.365, which is slightly larger than the crystal constant of natural cubic structure diamond, and the spectral peak broadening is more serious. These reasons are due to the size effect of Nanocrystalline caused by the combined influence of lattice distortion.
2. Regular morphology: High-resolution transmission electron microscopy shows that most Nanodiamonds are single crystals, and the particle size distribution is consistent with small-angle x-ray scattering, and their surface morphology is more regular spherical or spherical.
3. Large specific surface: The reason why Nanodiamond has strong surface activity and can adsorb a large number of impurity atoms or groups is because Nanodiamond has a large specific surface (up to 200~420m²/g).
4. Low Debye temperature: The Debye temperature of Nanodiamond is 1800~2242k, which shows that the binding force between atoms is weakened, and the amplitude of the offset position of the atom center is increased by 2.4 times, thereby increasing the activity of Nanodiamond .
5. Large chemical activity: The initial oxidation temperature of Nanodiamonds in air is

macro-large-size diamonds, mainly due to the super chemical activity and the serious incompleteness of the crystal structure.

Nanodiamond applications

Because Nanodiamond has the unique properties of small particles and large specific surface area, it has special mechanical, photoelectric, thermal and magnetic properties, and can be widely used in chemical, electronic, mechanical, medical and other fields.

1. The application of Nanodiamond in lubricating oil, grease and coolant is mainly used in machinery industry, metal processing, engine manufacturing, shipbuilding, aviation, transportation. Adding Nanodiamonds to lubricating oil can improve the working life of the engine and transmission, save fuel oil, reduce friction torque by 20-40%, and reduce friction surface wear by 30-40%.
2. Nanodiamond can treat tumors, gastrointestinal diseases and skin diseases in medicine. It is non-toxic, non-carcinogenic or rusty, and harmless to the human body. As a super-active adsorbent and bioactive substance positioning agent, Nano-diamond can enhance the efficacy of drugs.
3. Nanodiamonds can also be used in magnetic recording carriers such as magnetic tapes and magnetic disks, and can be used as wear-resistant additives and physical modifiers. Nanodiamonds are added when the composite magnetic recording film is electrochemically coated to improve the performance of the magnetic recording device. Adding Nanodiamonds can reduce ferromagnetic material particles, increase recording density, and reduce abrasive wear and friction coefficient.

Luoyang TrunNano Tech Co., Ltd (TRUNNano) is a professional amorphous boron manufacturer with over 12 years experience in chemical products research and development. If you are looking for high quality Nanodiamond , please feel free to contact us and send an inquiry.

Subject: Re: Nano-diamonds-the "hard" road of industrial technology
Posted by [admin](#) on Wed, 02 Sep 2020 06:17:48 GMT

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Tapered Roller Bearings

Subject: Re: Nano-diamonds-the "hard" road of industrial technology
Posted by [admin](#) on Wed, 02 Sep 2020 06:18:47 GMT

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ERIC BEARING LIMITED can provide professional technical installation support when you bought our TIMKEN bearings. All kinds of Inch type tapered roller bearings (TST, TDO ,TDI and other type). TIMKEN bearings

Subject: Re: Nano-diamonds-the "hard" road of industrial technology
Posted by [admin](#) on Wed, 02 Sep 2020 06:19:13 GMT

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Bettyshoe.com (Luoyang Beite Shoes LTD.) is a professional man's, woman's, kids' casual shoes, sports shoes, PVC injection shoes, TPR shoes and 3D fly-knit shoes bulk making manufacturer for global shoes wholesalers.

Founded in 2003, conveniently located in Luoyang (an ancient Chinese capital with profound

cultural deposits), with a total investment of more than 40 million yuan, Luoyang Beite Import & Export Trade Co., Ltd. mainly deals in injection-molded shoes. With a shoe factory and a 3D fly-knit factory covering a total area of some 10,000 square meters, equipped with several injection molded shoe machines and more than 500 domestically advanced fly-knit machines, we have developed rapidly.

Man's Casual Shoes

Subject: Re: Nano-diamonds-the "hard" road of industrial technology

Posted by [admin](#) on Wed, 23 Sep 2020 07:34:27 GMT

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Carbide powder is a binary compound formed by carbon (other than hydrogen) which is smaller or similar to electronegativity. Carbides have a higher melting point. Most carbides are carbon and metal at high temperatures. The next reaction is obtained. The properties of the element are divided into metal carbides and non-metal carbides.

Carbide powder
