

Innovative · Efficient · Safe



**Imdermalab<sup>®</sup> SBN**

*Spherical Boron Nitride for cosmetic*



## Imdermalab<sup>®</sup> SBN

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### **Innovative Boron Nitride for better product texture & optical properties.**

We developed a series of innovative spherical Boron Nitride for cosmetic formulation, Imdermlab<sup>®</sup> SBN series product. The traditional Boron Nitride are mostly in plate form, which is not convenient in formulation due to its properties. Imdermlab<sup>®</sup> SBN series products can give formulation better viscosity control, the finished product with better texture and better optical properties. Whether it's the shimmer of an eye shadow, the coverage in a foundation, or higher yield in the extrusion process, Imdermlab<sup>®</sup> SBN offer formulators better solutions wrapped into one material.

## What is Spherical Boron Nitride

Spherical Boron Nitride is a synthesis of Borax (natural mineral) and a Nitrogen source at high temperature. With our innovative technology, spherical structure of Boron Nitride is available for the market.

Imdermalab® SBN Cosmetic Powders are Ultra-High Purity (UHP) versions of this spherical form. There is no B-N bonding between particles and therefore creating a better soft and lubricating effect.

- Spherical structure
- Density 1.28 g/cc
- Chemically inert and stable
- Refractive Index 1.57
- Excellent Thermally Conductive
- High Specific surface area (1.44 m<sup>2</sup>/g)
- Low Coefficient of Friction < 0.3
- Whiteness (CIE)  $\geq 93$

Imdermalab<sup>®</sup> SBN

## Perfect Particle Distribution (SBN-20)

Sample Name : SBN

Median Size : 16.93412( $\mu\text{m}$ )

Mode Size : 18.5383( $\mu\text{m}$ )

Std.Dev. : 8.0327( $\mu\text{m}$ )

Span : 1.1811

Diameter on Cumulative % : (1)5.000 (%) - 7.0916( $\mu\text{m}$ )

: (2)10.00 (%) - 8.8712( $\mu\text{m}$ )

: (3)20.00 (%) - 11.2834( $\mu\text{m}$ )

: (4)30.00 (%) - 13.2673( $\mu\text{m}$ )

: (5)40.00 (%) - 15.0893( $\mu\text{m}$ )

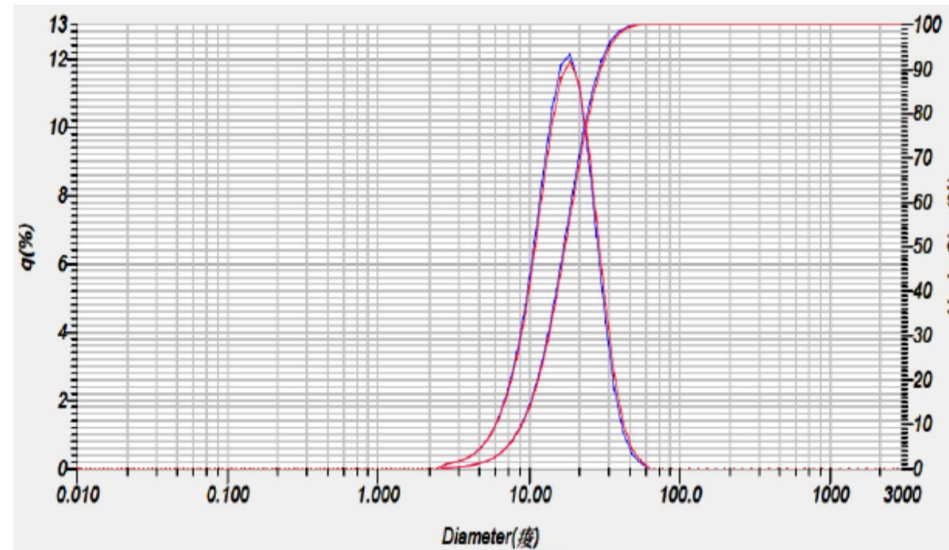
: (6)60.00 (%) - 18.9515( $\mu\text{m}$ )

: (7)70.00 (%) - 21.2991( $\mu\text{m}$ )

: (8)80.00 (%) - 24.2908( $\mu\text{m}$ )

: (9)90.00 (%) - 28.8717( $\mu\text{m}$ )

: (10)95.00 (%) - 33.1331( $\mu\text{m}$ )

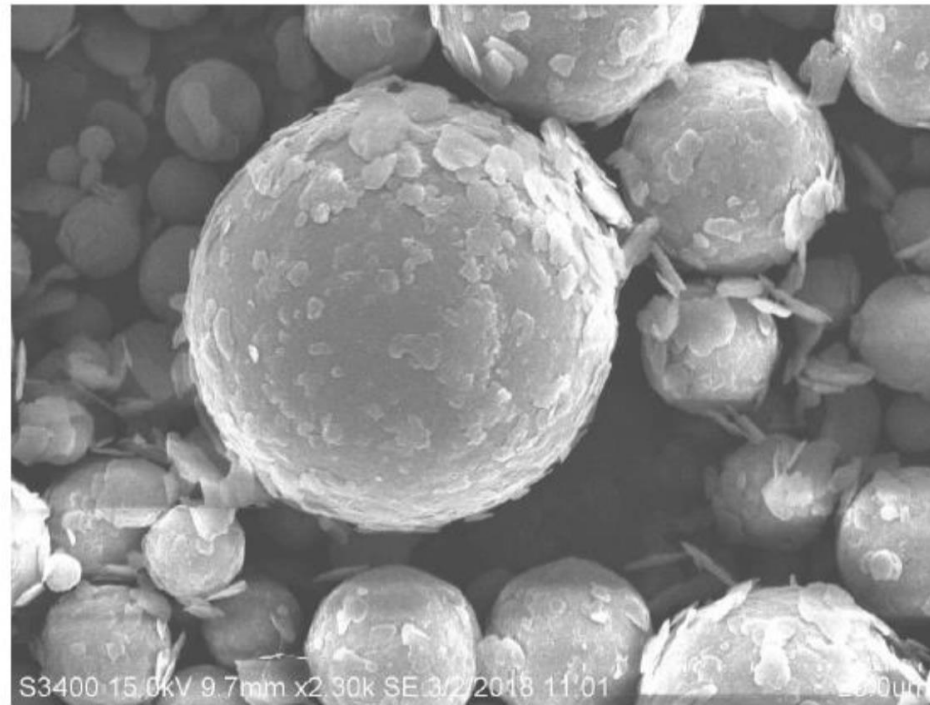


Imdermalab® SBN

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## “Real” Spherical Particles under SEM Scanning

Different than traditional lamellar crystal structure BN and “assembled spherical structure” BN, Imdermalab® SBN is “real” spherical structure and highly stable in formulation process, especially under high shear agitation.



SBN

## Committed to Safety Manner

- Through 3D skin (EPISKIN RhE model) test, Imdermalab® SBN passed OECD TG 439 (Figure 2, 3) & 442C (Figure 1), has shown “Non-Irritation” and “Non-sensitizer”, and would not impair the skin barrier function of the 3D epidermis tissue model.

Figure 1

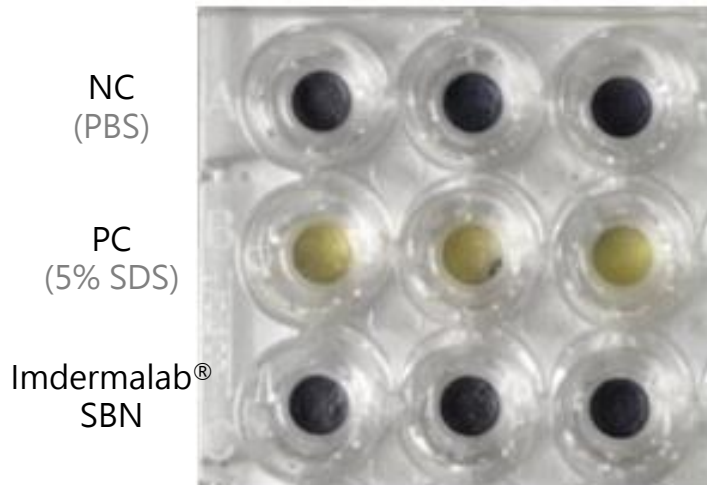


Figure 2

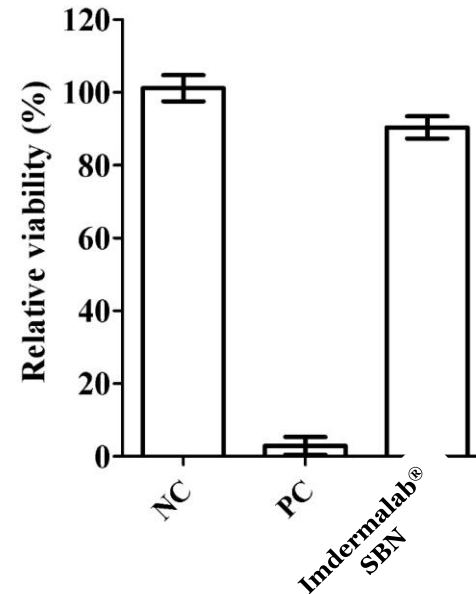
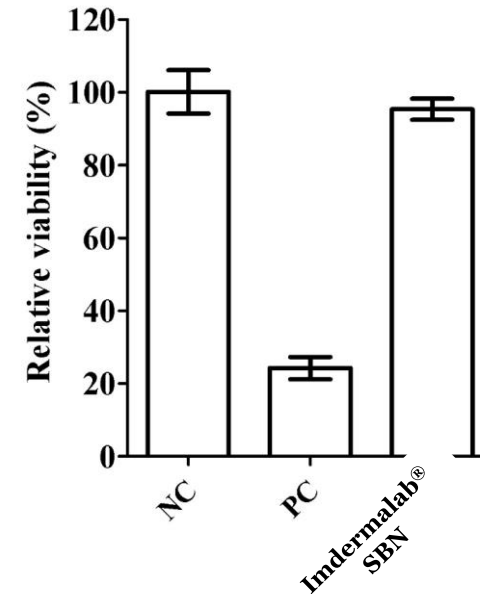
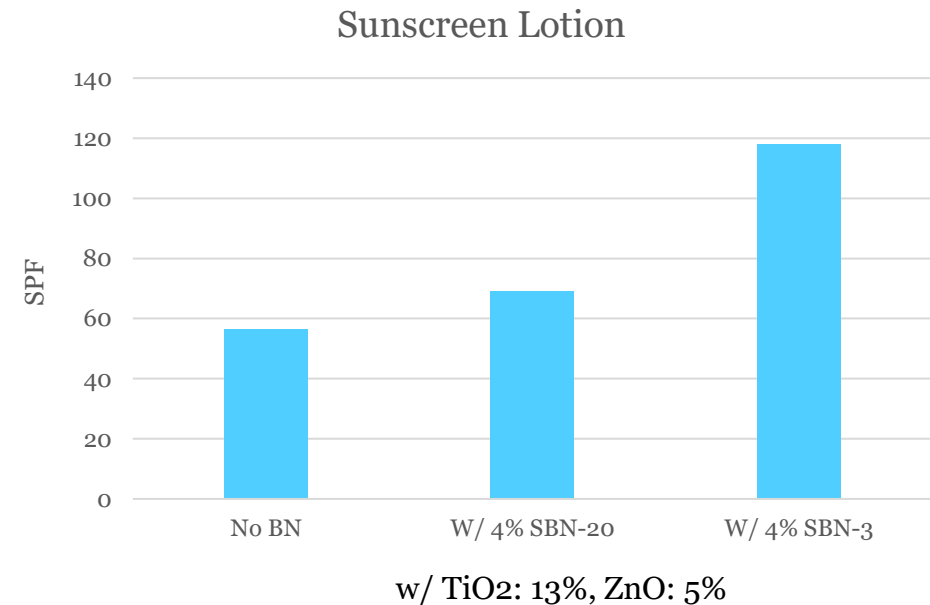
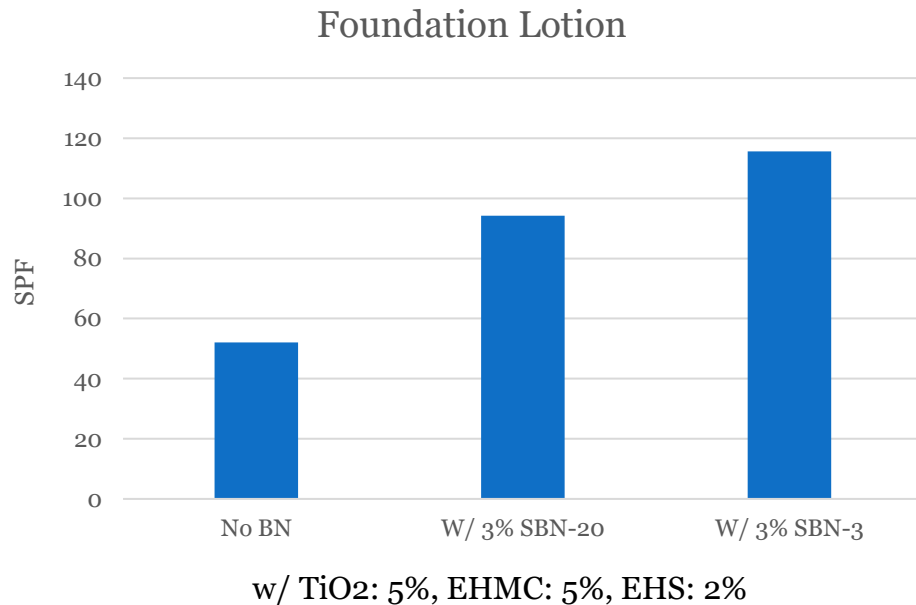


Figure 3



## Boost Sunscreen Capability with Better Textile

- With our SBN (-3 and -20) products, SPF of foundation lotion and sunscreen formula are significantly boosted. Especially with our finest SBN product, SBN-3, the SPF of formula are at least double than formula with sunscreen ingredients only. This can help reducing dosage of sunscreen ingredients (especially physical sunscreen ingredients) to reach the same SPF. *Better protection with lighter feeling!*



## Benefits

- Spherical structure improves texture, slip, payoff, spreadability and adherence
- Low coefficient of friction provides smooth and silky feel, aids compressibility of pressed powders
- Decreases tack by absorbing excess oils (Oil absorption  $\geq 1.75$  cc/g)
- Chemically inert and stable
- Finely divided particle size distributions
- Comply with Japan Quasi-Drug raw material specification for boron nitride.





## Imdermalab® SBN -3, -20

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### Key Applications

- Foundation and liquid makeup • Concealers, BB Cream
- Loose and pressed powder
- Lipstick
- Pencils
- Nail enamel
- Sunscreen and moisturizers



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