LeafPowder™ Al・In

May, 2020

Oike & Co., Ltd.
Powder Material Strategic Business Unit

LeafPowder™

- Nano & micron size powder

  (nanometer：thickness, micrometer：particle size)

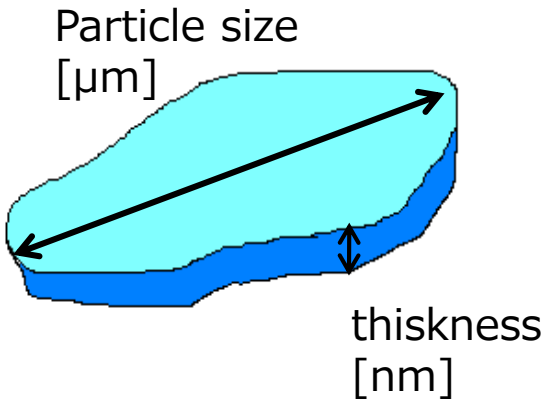
  → expect for balk material function & quantum effect

- High aspect ratio & Scale-like shape

  → thinner & high adhesion

- Flexible selection of materials

  → possible to make various compounds by stacking layer technology

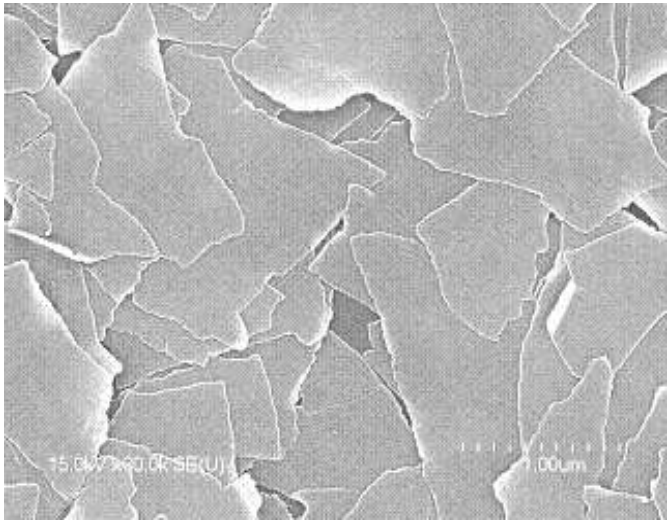


LeafPowder™ Al

Scale-like Al powder with high brightness and image clarity

(correspond to solvent, UV ink)

Inkjet printed sample of LeafPoder™ Al ink



SEM image of LeafPowder®™ Aluminum

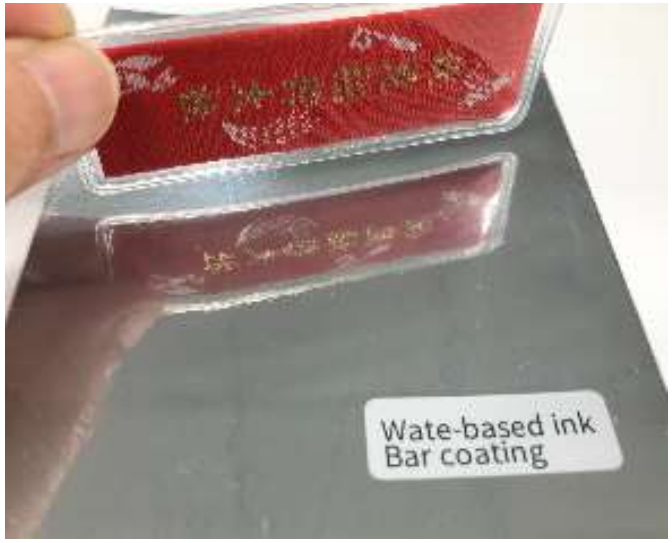
Achieve metallic design for inkjet printing and coating by OIKE particle size control and dispersing technologies

All other values are either nominal values or typical (typ.) values, and are not guaranteed

LeafPowder™ In

Overwhelming water resistant scale-like In powder

(correspond to solvent, UV and water-based ink)



Bar-coated sample of water-based ink

Current product (Al) **Development article (In)**

before after before after

(rarefaction)

60℃ water ×1month stability test result
(deposited film)

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LeafPowder™ In

Overwhelming water resistant scale-like In powder

- **Preservation stability test**

➢ Testing conditions
Sample: LeafPowder dispersion (solid contents 2.5wt%, IPA* : water＝1 : 1) put in sealed vessel, measure inside pressure after 60℃×1month.

*IPA=isopropyl alcohol

➢ Result

Metal species	Inside pressure (60℃×1month)	appearance
In	**Less than 0.2 kPa**	**No change**
Al	Over 20 kPa	Chlorosis, gelation

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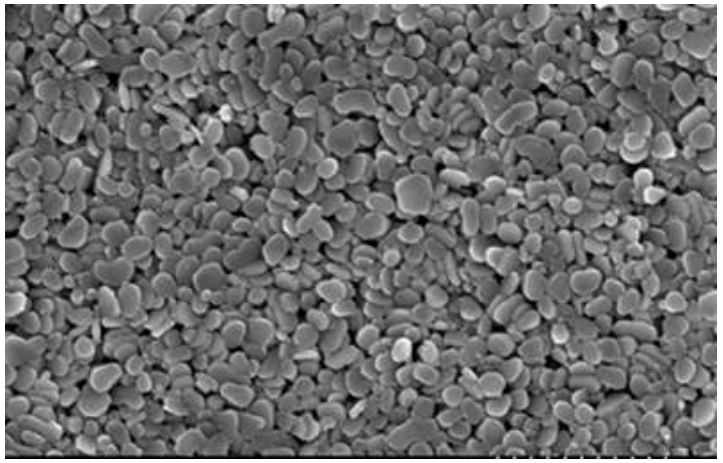
LeafPowder™ In

Spin coated sample of LeafPowder™ Indium dispersion



SEM image of LeafPowder™ Indium

Metal species	Gloss20°	Gloss60°	Gloss85°	Rspec (mirror reflection peak)
In	**870**	**469**	**116**	**874**
Al	858	554	117	856

Spin-coated sample of LeafPowder™ In shows comparable high specularity to current product (Al)

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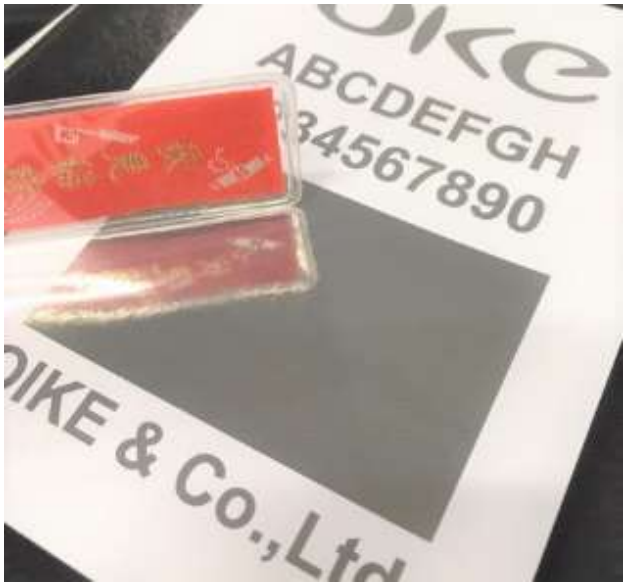
LeafPowder™ In

- **Specification**

Grade	Solid contents	Particle size	Dispersant
49CJ-1120	20 wt%	～1μm	PGM CAS No.107-98-2



Inkjet printed sample of LeafPowder® In ink

Bar-coated sample of UV curing ink

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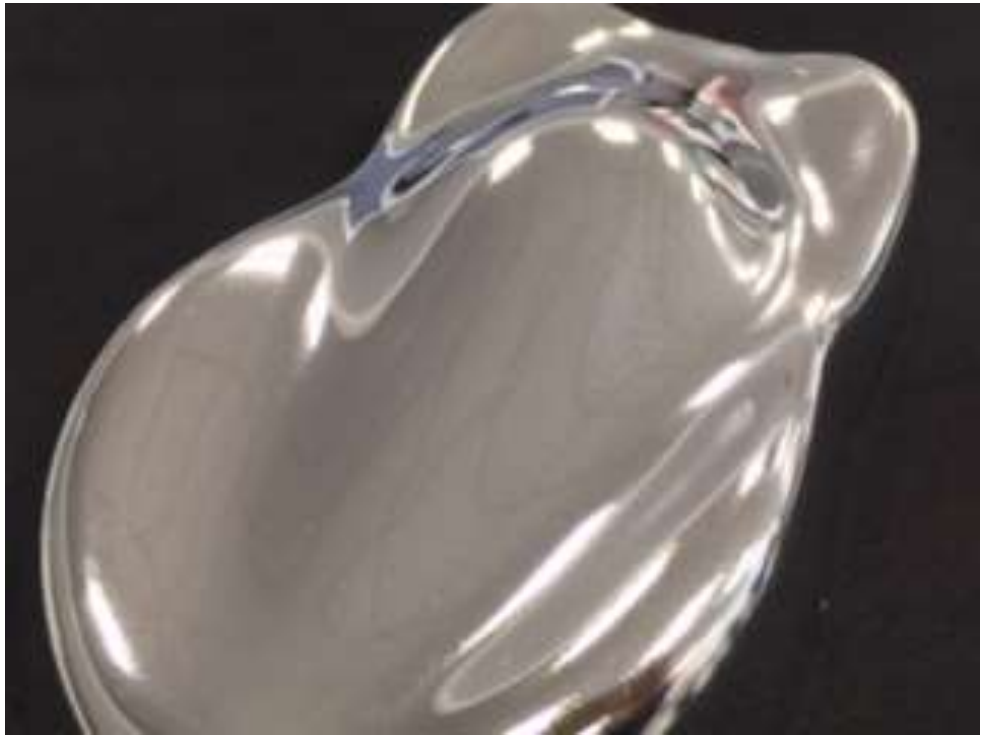
LeafPowder™ In

- **Coating samples**



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