SOOHYUN
hi • tech materials

Nano Technology

SOOHYUN
hi-tech materials

www.shmaterials.co.kr

Company & Profile

Vision and History

COMPANY & PROFILE

Vision

A specialized company in inorganic particle industry based on credibility, professionalism with market friendly manner.

History

Nov. 2006	Established Cheongjoo factory PDP abrasive recycle
May. 2007	Developed Ag paste recycle process
Sep. 2008	Launched solvent based silica sol and monomer based silica sol Launched monomer based alumina sol Developed ceria recycle process
Sep. 2009	Developed protection coating for retort Film & asbestus stabilizer, Aeonder
Mar. 2013	Launched solvent based Zirconia sol
Dec. 2016	Qualified ISO 9001 : 2015 KS Qualified K Mark
Sep. 2019	Export Silica & Alumina sol to Japan market
Jan. 2021	Moved to Geumwang Factory
Nov. 2022	Qualified KC Mark for water supply
Dec. 2022	Launched Hollow silica sol
Feb. 2023	Launched 3D printing resin

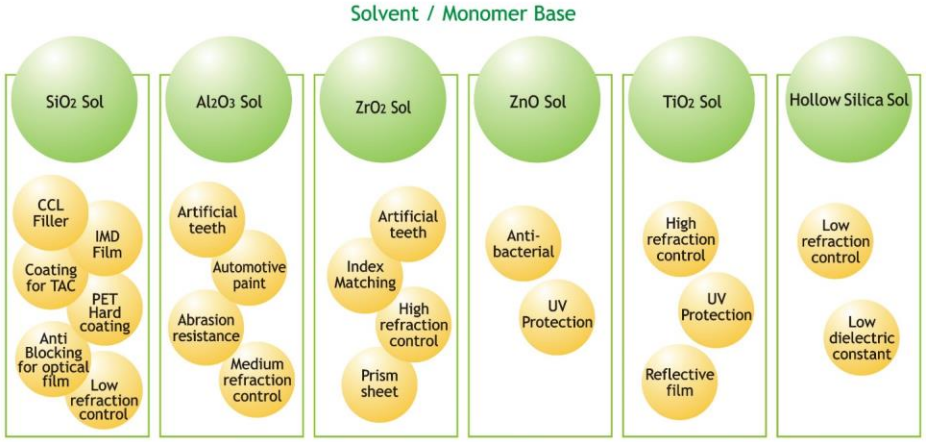
SOOHYUN
hi • tech materials

NANO BUSINESS

Nano Business
Product and Application

Product Line up

Focused on functional materials for optical films/plastics/materials.



Patent

Desciptions	Filed No.	Title	Remarks
Filed	10-0769352	Method of recycling metallic grains	Korea
	10-1075934	Metallic powder recycling method in eco-friendly process	Korea
	10-1103404	Method of Ceramer production and the ceramer, which was produced under the former method	Korea
	10-1225746	Method of recycling Ceria abrasive	Korea
	5530564	Method of recycling Ceria abrasive	Japan
	10-1411926	Method of Cerium oxide production from industrial waste of ceria abrasive	Korea
	10-1486439	Method of Cerium carbonate production from industrial waste of ceria abrasive	Korea
	10-1464933	Penetrating Asbestos Stabilizer Composition and its Stabilization Method	Korea
	10-2201480	White inorganic pigment coating composition and method of manufacturing label paper for PCB barcode printing	Korea

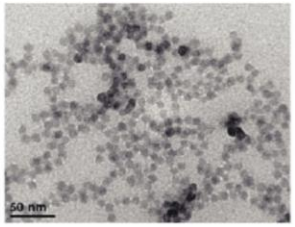
Features and areas of application

Optical series are dispersions of nano particles such as colloidal silica/ alumina/zirconia in solvents and monomers. With its excellent dispersability, longstorage stability, and highly performed compatibility Optisol series can be used for various solutions to meet customer's needs.

- excellent dispersability and stability
- narrow particle size distribution
- wide range of dispersions in solvents and monomers

In formulation various properties can be improved

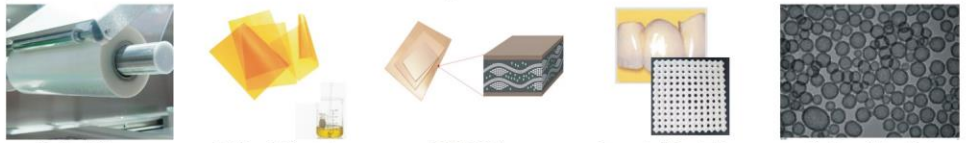
- refractive index of coating
- anti blocking and hardness simultaneously
- anti scratch/anti abrasion
- weather/chemical/heat resistance
- adhesive properties for various inorganic materials (glass, aluminum...)
- decreased curl effect during UV curing
- others, heat stability, stain-resistance, insulation property etc.



Applications

With hybrid effect it is applied to improve the hardness, scratch/abrasion resistance of coating for plastics, films. Its application ranges are getting wider and wider.

Applications



Optical film | PI film & Varnish | PCB(CCL) | Ceramic 3D printing | Hollow Silica Sol

with you together

SOOHYUN
hi-tech materials

SiO_2 Sol
Dispersed in Solvents

OPTISOL SERIES

	Optisol-LSM	Optisol-LSA	Optisol-LSG	Optisol-SSA	Optisol-SST	Optisol-SSD	Optisol-SSK	Optisol-SSI	Remarks
Solvent	Methanol	Isopropanol	Propyleneglycol monomethyl ether	1-Methoxy 2-propanol acetate	Butyl acetate	Dimethyl acetamide	Methyl ethyl ketone	Methyl isobutyl ketone	-
Particle Size (nm)	10~15	10~15	10~15	10~15	10~15	10~15	10~15	10~15	BET
SiO_2 Content (%)	30	30	30	50	50	30	30	30	-
Appearance	Sky bluish	Sky bluish	Sky bluish	Sky bluish	Sky bluish	Sky bluish	Sky bluish	Sky bluish	Visual Inspection
pH	2~4	1~3	-	-	-	-	-	-	pH Meter
Viscosity (mPa·s)	<10	<20	<30	<30	<30	<30	<10	<10	Brookfield DV-II Pro
Water Content (%)	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	Karl-fisher

- Specifications are subject to change without notice.
- Particle size : 4 grades of particle are available 10/20/50/90 nm.
- Surface treatment for customizing : T.B.D.

Rev. Sh230504a

SOOHYUN
hi • tech materials

SiO_2 Sol
Dispersed in Monomor

	Optisol-ASAM1100	Optisol-ASAM1200	Optisol-ASAM1500	Optisol-ASAM2100	Optisol-ASAM2200	Optisol-ASAM3100	Optisol-ASAM3300	Optisol-ASAM6100	Remarks
Monomer	MMA	HEMA	IBOA	TPGDA	HDDA	TMPTA	PETA	DPHA	-
Particle Size (nm)	10~15	10~15	10~15	10~15	10~15	10~15	10~15	10~15	BET
SiO_2 Content (%)	50	50	50	50	50	50	50	30	-
Appearance	Transparent	Transparent	Transparent	Transparent	Transparent	Transparent	Transparent	Transparent	Visual Inspection
Viscosity (mPa·s)	<100	<500	<1,000	<500	<500	<5,000	<50,000	<10,000	Brookfield DV-II Pro
Water Content (%)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	Karl-fisher

- Specifications are subject to change without notice.
- Particle size : 4 grades of particle are available 10/20/50/90 nm.

Rev. Sh230504a

Al_2O_3 Sol

Dispersed in Solvent and Monomer

OPTISOL SERIES

	Optisol-LAM	Optisol-LAK	Optisol-LAA	Optisol-ALAM1200	Optisol-ALAM1500	Optisol-ALAM2100	Optisol-ALAM3100	Optisol-ALAM3300	Optisol-ALAM6100	Remarks
Solvent/ Monomer	Methanol	Methyl ethyl ketone	1 Methoxy 2-propanol acetate	HEMA	IBOA	TPGDA	TMPTA	PETA	DPHA	-
Particle Size (nm)	<120	<120	<120	<120	<120	<120	<120	<120	<120	D50
Al_2O_3 Content (%)	20	30	30	30	30	30	30	30	30	-
Appearance	White	White	White	White	White	White	White	White	White	Visual Inspection
Viscosity (mPa·s)	<20	<20	<30	<500	<500	<500	<5,000	<10,000	<10,000	Brookfield DV-II Pro
Water Content (%)	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	Karl-fisher

- Specifications are subject to change without notice.

Rev. Sh230504a

SOOHYUN
hi • tech materials

ZrO_2 Sol

Dispersed in Solvent and Monomer

	Optisol-NZH	Optisol-NZM	Optisol-NZK	Optisol-NZAM2200	Optisol-NZAM3100	Optisol-NZHA1100	Remarks
Solvent/ Monomer	Water	Methanol	Methyl ethyl ketone	HDDA	TMPTA	OPPEA	-
Particle Size (nm)	20~30	20~30	20~30	20~30	20~30	20~30	BET
ZrO_2 Content (%)	30	30	30	50	50	50	-
Appearance	Bluish	Bluish	Bluish	Bluish	Bluish	Bluish	Visual Inspection
pH	3~5	2~4	-	-	-	-	pH Meter
Viscosity (mPa·s)	<10	<10	<10	<1,000	<2,000	<2,000	Brookfield DV-II Pro
Water Content (%)	-	<2.0	<0.5	<0.5	<0.5	<0.5	Karl-fisher

- Specifications are subject to change without notice.

Rev. Sh230504a

ZnO/TiO_2 Sol

Dispersed in Solvent and Monomer

OPTISOL SERIES

	Optisol-SZA	Optisol-SZAM1500	Optisol-DTG	Optisol-DTAM1500	Remarks
Solvent/ Monomer	1-Methoxy-2-Propanol acetate	IBOA	Propyleneglycol monomethyl ether	IBOA	-
Particle	ZnO	ZnO	TiO_2	TiO_2	-
ZnO/TiO_2 Content (%)	30	30	30	30	-
Appearance	Ivory	Brown	White	White	Visual Inspection
Viscosity (mPa·s)	<30	<100	<30	<100	Brookfield DV-II Pro
Water Content (%)	-	-	<2.0	<0.5	Karl-fisher

- Specifications are subject to change without notice.

Rev. Sh230504a

SOOHYUN
hi • tech materials

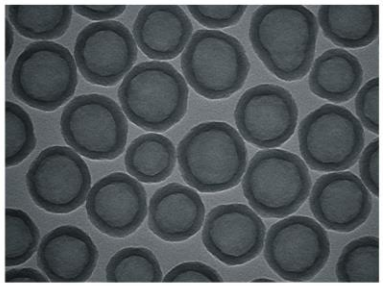
AIRLOID SERIES

Hollow Silica Sol

Dispersed in Solvent and Monomer

	Airloid-TSM60A	Airloid-TSM60I	Airloid-AM2160	Remarks
Solvent/ Monomer	1-Methoxy-2-Propanol acetate	Methyl isoButyl ketone	TPGDA	-
Particle Size (nm)	50/60/80	50/60/80	50/60/80	-
SiO_2 Content (%)	20	20	40	-
Appearance	Milky White	Milky White	Milky White	Visual Inspection
Viscosity (mPa·s)	<20	<20	<500	Brookfield DV-II Pro
Water Content (%)	<0.5	<0.5	<0.5	Karl-fisher

TEM Image



Properties of AR coating film

Refractive Index of coating film	<1.30
Reflectance	<1.0
Haze	<0.3

*coating film thickness : 120nm

- Specifications are subject to change without notice.

Rev. Sh230504a

with you together

SOOHYUN
hi-tech materials

3D Printing Materials

UV Type Ceramic Printing Resin

CERAPRIN SERIES

	CERAPRIN-S100	CERAPRIN-A100	CERAPRIN-Z100	Remarks
Appearance	Transparent	White	White	Visual Inspection
Main Component	Silica	Alumina	Zirconia	
Viscosity (mPa·s)	<500	<500	<1,000	Brookfield DV-11 Pro
Water Content (%)	<0.5	<0.5	<0.5	Karl-fisher
Resin	HDDA	HDDA	HDDA	-

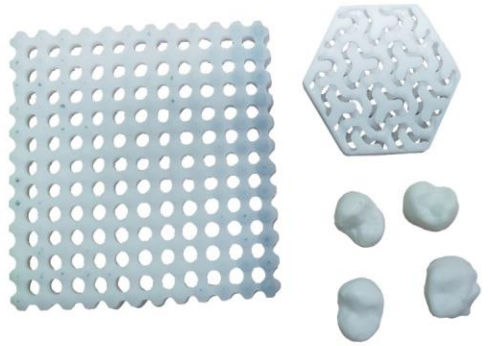


Image of 3D print sample

- Specifications are subject to change without notice.

Rev. Sh230504a

Memo

SOOHYUN
hi • tech materials

www.shmaterials.co.kr

SOOHYUN
hi-tech materials

SOOHYUN hi-tech materials
수현첨단소재 (주) 충북 음성군 금왕읍 유촌산단1길 13
13, Yuchonsandan 1 road, Geumwang, Eumseong, Chungbuk, 27680, Korea
t_(+82) 043-882-7471 f_(82) 043-882-7472