

UV Filter TiO₂ from SUNJIN

Nano

	MT-100SJTV	TX-85	TX-85AS	TX-85SA	TA-90
TiO ₂ Purity %	82.5%	85%	85%	85%	93%
TiO ₂ Coating	Aluminum Hydroxide & Stearic Acid	Silica & Dimethicone	Silica & Triethoxy caprylyl silane	Silica & Stearic Acid	Alumina & Stearic Acid
Shape (Morphology)	Needle	Round	Round	Round	Round
Transparency by White Index	40.97	48.81	48.81	48.81	60.91
Remarks	Most Transparent	USP Grade SCCS Nano grade TiO ₂			

Non Nano

	T-80TINA	T-80AS
TiO ₂ Purity %	77%	80.5%
TiO ₂ Coating	Silica & Zinc Stearate	Silica & Triethoxy caprylyl silane
Shape (Morphology)	Round	Round
Transparency by White Index	-	67.73
Remarks	COSMOS	

TX-85, High Purity, Not too bulky, Good UV protection

Product Name/		Original “A”	Renewal “A”	TX-85	TX-85AS	TX-85SA
Manufacturing Company		Company “B”	Company “B”	SUNJIN	SUNJIN	SUNJIN
INCI		TiO2 & SiO2 & Dimethicone	TiO2 & SiO2 & Dimethicone	TiO2 & SiO2 & Dimethicone	TiO2 & SiO2 & Alkyl Silane	TiO2 & SiO2 & Stearic Acid
TiO2 Content (%)		82.6 %	77.2 %	84.0 %	85.1 %	83.1 %
loss on Ignition (%)		2.29 %	4.03 %	4.1 %	3.79 %	4.3 %
loss on Drying (%)		0.9	1.15 %	0.27	0.3	0.3
Tap Density (g/ml)		0.29 g/ml	0.19 g/ml	0.41 g/ml	0.39 g/ml	0.43 g/ml
Oil absorption (ml/g)		0.95 ml/g	1.25 ml/g	0.63 ml/g	0.68 ml/g	0.58 ml /g
primary Particle size by number based size distribution (um) d(50)/d(100)		0.080um/ 18.86um	0.062um/ 3.20um	0.080um/ 20.71um	0.080um/ 20.71um	0.080um/ 20.71um
IN Vitro*	SPF	33.18	29.82	32.53	31.82	31.87
	PA	13.01	10.35	12.83	12.60	12.61

TX-85, Good Dispersibility

Tested TiO₂

#1
Company "D"
Product "P"
TiO₂, Silica, Dimethicone

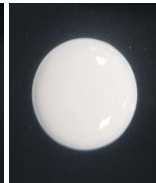
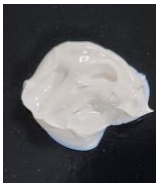
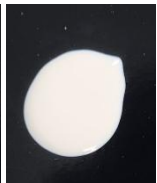
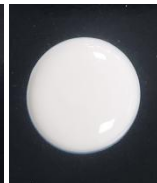
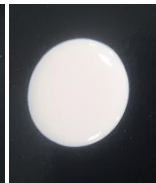
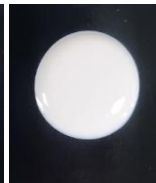
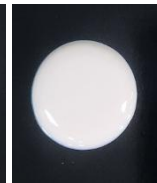
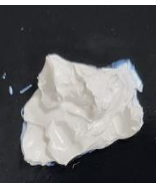
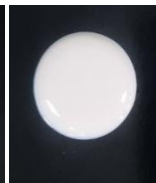
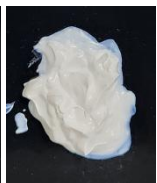
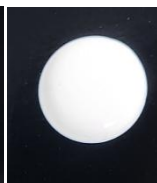
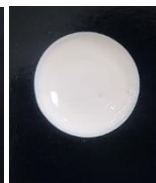
#2
Company "T"
Product "M"
TiO₂, Aluminum Hydroxide,
Stearic acid

#3
Company SUNJIN
Product TX-85
TiO₂, Silica, Dimethicone

#4
Company SUNJIN
Product TX-85
TiO₂, Silica, Dimethicone

#5
Company: SUNJIN
Product: TX-85AS
TiO₂, Silica, Triethoxysilane

#6
Company: SUNJIN
Product: TX-85SA
TiO₂, Silica, Stearic acid

#1	#2	#3	#4 TX-85	#5 TX-85AS	#6 TX-85SA
					
89,120cp	43,180cp	95,000cp	14,910cp	15,610cp	13,350cp
					
59,520cp	12,480cp	58,100cp	11,440cp	13,310cp	12,250cp
					
158,000cp	85,440cp	63,200cp	12,360cp	16,830cp	15,430cp
					
88,320cp	160,000cp	57,000cp	13,120cp	16,900cp	15,550cp
					
130,000cp	89,240cp	89,120cp	18,200cp	18,310cp	19,110cp

C12-15 Alkyl Benzoate

Dicaprylyl Carbonate

Caprylic/Capric Triglyceride

Cyclomethicone

Liquid Paraffin

Test Method
Powder 40g, each oil 60g, **Stirring 1000rpm 10 min.**
And check Viscosity.

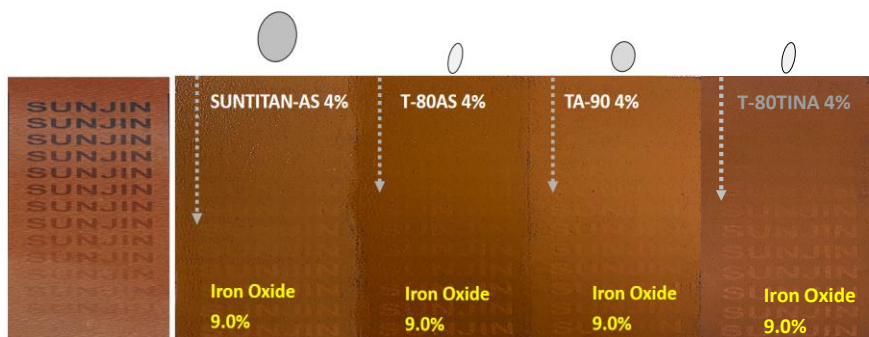
Overview

TA-90 is SCCS compliant TiO_2 for make-ups which needs UV protection, coverage, Good color intensity.

The Natural Origin index according to ISO 16128: 1

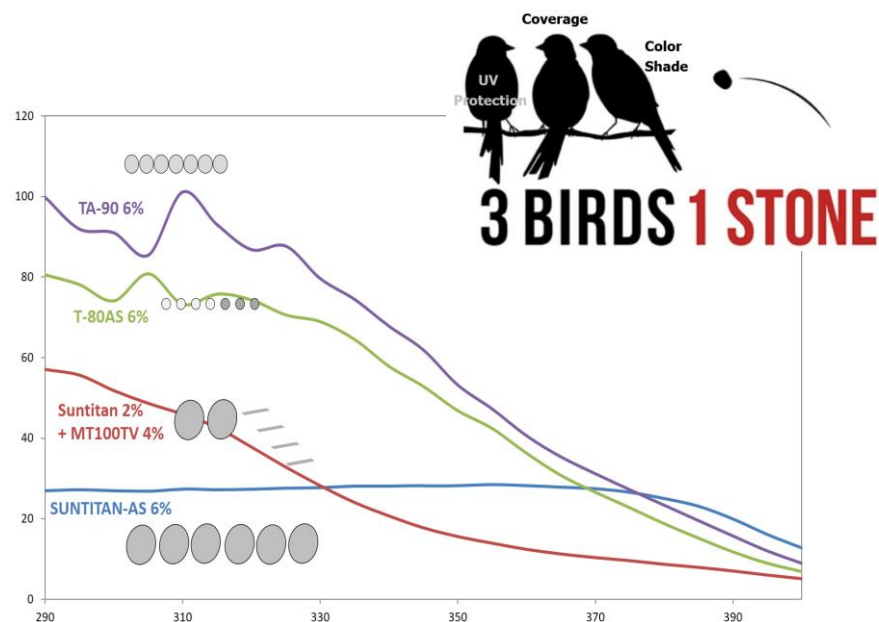
TA-90

TiO_2	93%
Alumina	3.3%
Stearic Acid	3.7%



Benefits

- USP API grade, manufactured at FDA inspected site
- **Better protect for UVA and UVB**
- Natural coverage for Make-up



T-80 series

Overview

T-80 series are core/shell type Non Nano, No Alumina TiO_2 with continuous silica layer for make-ups which needs UV protection, coverage, Good color intensity.

T-80AS

TiO_2	80.5%
SiO_2	16%
Alkyl Silane	3.5%

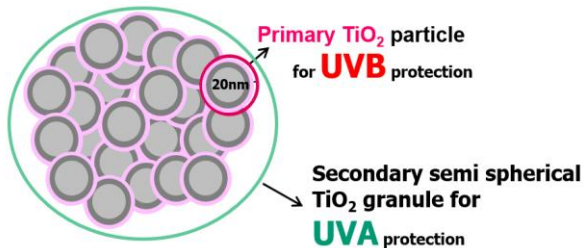
T-80TINA

TiO_2	77%
SiO_2	14%
Zinc Stearate	9%

Natural Surface Treatment

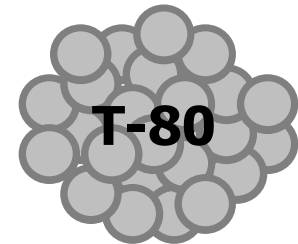
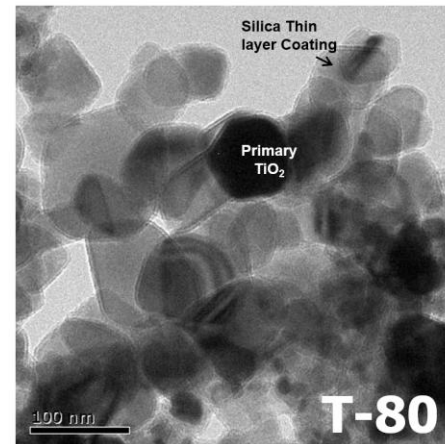
Why Broad UVA & UVB Protection?

T-80 means less Cost & More Formulation Freedom



Benefits

- Non Nano TiO_2
- USP API grade, manufactured at FDA inspected site
- **Alumina free**
- UVB protection as good as 15nm TiO_2
- UVA protection better than 40nm ZnO
- Very good photo-stability



TiO₂ Dispersion Overview

	TXD55-AQ(K)	TPD40-AB	TXD60-D	TXD60-AB	GR-TD1	SFT85-CCTG	T80TINA-75AK	T80TINA-70CC	TZ50-CCTG
Carrier	Water	Alkyl Benzoate	Dimethicone	Alkyl Benzoate	Dicaprylyl Carbonate	Caprylic/ Capric Triglyceride	C9-12 Alkane	Dicaprylyl Carbonate	Caprylic/ Capric Triglyceride
Net TiO ₂ %	46%	35%	51%	48%	30%	47.5%	58%	54%	TiO ₂ 24% ZnO 24%
TiO ₂ coating	Silica & Triethoxy caprylyl silane	Alumina	Dimethicone	Silica & Dimethicone	Aluminum Hydroxide & Stearic Acid	Silica & Jojoba Esters	Silica & Zinc Stearate	Silica & Zinc Stearate	Aluminum Hydroxide & Stearic Acid
Dispersing agent	Polyglyceryl-10 Diisostearate	Polyhydroxy stearic Acid	Dimethicone	Polyhydroxy stearic Acid	Polyglyceryl-3 Diisostearate	Polyhydroxy stearic Acid	Polyhydroxy stearic Acid	Polyhydroxy stearic Acid	Polyhydroxy stearic Acid
Critical wavelength (nm)	378	364	374.1	380.5	384.3	388.2	381.9	382.1	371
Remarks	SCCS grade TX-85AS used For water phase	The most Transparent	D5 replacement	SCCS grade TX-85 used	EWG COSMOS RSPO	EWG COSMOS RSPO	EWG COSMOS RSPO	EWG COSMOS RSPO	EWG COSMOS RSPO

ZnO Dispersion Overview

	ZINA -75CCTG	ZINA -75B	ZINA -75AB	ZINA -75C5	ZINA -75CC	ZINA -75D	OLEO -Z75C5C	Z65M	SUNCLEAR -Z65C5	Z75R -CCTG
Carrier	Caprylic/ Capric Triglyceride	Dibutyl Adipate	Alkyl Benzoate	Coco- Caprylate /Caprate	Dicaprylyl Carbonate	Dimethicone	Coco- Caprylate /Caprate	Caprylic/ Capric Triglyceride	Coco- Caprylate /Caprate	Caprylic/ Capric Triglyceride
Net ZnO %	72%	72%	72%	72%	74%	75%	72%	64%	62%	73%
Surface Treatment	Stearic Acid	Stearic Acid	Triethoxy caprylyl silane	Triethoxy caprylyl silane	Triethoxy caprylyl silane	Triethoxy caprylyl silane	Cetyl Alcohol	Triethoxy caprylyl silane	Triethoxy caprylyl silane	Triethoxy caprylyl silane
Dispersing agent	Polyhydroxy stearic Acid	Polyhydroxy stearic Acid	Polyhydroxy stearic Acid	Polyhydroxy stearic Acid	Polyhydroxy stearic Acid	PEG-9 Polydimethylsi loxyethyl	Polyglyceryl-6 Polyhydroxy stearate, Polyglyceryl-6 Polyricinoleat e	Polyhydroxy stearic Acid	Polyhydrox y stearic Acid	Polyhydroxy stearic Acid
Critical wavelength (nm)	370.9	369.4	368.4	370.6	370.9	370.2	383.8	376	379.2	374.5
Remarks	High solid Pourable						EWG COSMOS RSPO	Low emulsifier % O/W and W/O Workable Clean Beauty Concept		Cost Efficient RSPO

SUNJIN
BEAUTY
SCIENCE

