

# SunBoost ATB & SunBoost ATB Natural



## SPF Booster with Antioxidant Benefits

The current trend towards increasing SPF values in sunscreens presents a challenge to formulators who have to create products with high concentrations of sunscreen agents while keeping acceptable cosmetic qualities.

Kobo has developed SunBoost ATB, a mixture of antioxidant, anti-irritant and anti-inflammatory agents at a proprietary ratio. When used in sunscreens in combination with organic and/or inorganic UV Filters, SunBoost ATB shows an increase in SPF and PFA scores by more than 30%.

An all natural, Ecocert approved version, SunBoost ATB Natural, is available.

SunBoost ATB is also available coupled with High Speed™ TiO<sub>2</sub> dispersion TNP50T7. TNP50T7-ATB can provide up to 4.5 SPF units for each percent of TiO<sub>2</sub> in sunscreen formulas while delivering all the benefits of the antioxidants contained in SunBoost ATB.

SunBoost ATB and SunBoost ATB Natural can be used in other types of formulas, for their antioxidants and anti-irritant properties.

Trade Name	INCI Name	Product Type
SunBoost ATB	Argania Spinosa Kernel Oil (And) Tocopheryl Acetate (And) Bisabolol	Oily Material
SunBoost ATB Natural+++	Argania Spinosa Kernel Oil (And) Tocopheryl Acetate (And) Bisabolol	Oily Material
TNP50T7-ATB	C12-15 Alkyl Benzoate (And) Titanium Dioxide (And) Argania Spinosa Kernel Oil (And) Alumina (And) Hydrogen Dimethicone (And) Tocopheryl Acetate (And) Polyhydroxystearic Acid (And) Bisabolol	TiO <sub>2</sub> Dispersion with SunBoost ATB



+++ Raw material approved by Ecocert in accordance with the Ecocert Standard

### Comparison of SPF and PFA of formulas with and without SunBoost ATB

Formula Reference	Actives	In Vivo SPF	PFA	% Boost on SPF	% Boost on PFA
KSL-138 O/W Base	Organic 31%	40	13	Control	
KSL-138V	Organic 31% SunBoost ATB 5%	54	17	35%	31%
KSL-177-CH W/O Base	TiO <sub>2</sub> 5.78% ZnO 3.74%	19	7	Control	
KSL-177C-CH	TiO <sub>2</sub> 5.78% ZnO 3.74% SunBoost ATB 3.6%	30	10	58%	43%
KSL-188 W/O Base	TNP50T7 18.53% (TiO <sub>2</sub> 7.13%)	22	4	Control	
KSL-188E	TNP50T7-ATB 18.53% (TiO <sub>2</sub> 6.85%)	32	7	45%	75%

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KSL-138V

# High SPF Sunscreen with SunBoost ATB



## Part 1

- Deionized Water - Water 45.90%
- Liposorb® L-20 - Vantage: Polysorbate 20 1.00%

## Part 2

- Propylene Glycol - Symrise: Propylene Glycol 1.50%
- KELTROL® CG - CP Kelco: Xanthan Gum 0.30%

## Part 3

- Neo Heliopan® HMS - Symrise: Homosalate 15.00%
- Neo Heliopan® OS - Symrise: Ethylhexyl Salicylate 10.00%
- Ceraphyl® 368 - ISP: Ethylhexyl Palmitate 7.00%
- SunBoost ATB - Kobo Products: Argania Spinosa Kernel Oil (And) Tocopheryl Acetate (And) Bisabolol** 5.00%
- Lipo® GMS 450 - Vantage: Glyceryl Stearate 3.00%
- Neo Heliopan® 357 - Symrise: Butyl Methoxydibenzoylmethane 3.00%
- Neo Heliopan® BB - Symrise: Benzophenone-3 3.00%
- Lipomulse® 165 - Vantage: Glyceryl Stearate (And) PEG-100 Stearate 2.00%
- Covi-ox® T-50 - Cognis Corp.: Tocopherol 0.50%
- Lipowax® D - Vantage: Cetearyl Alcohol (And) Cetareth-20 0.50%
- Liposorb® TS - Vantage: Sorbital Tristearate 0.30%

## Part 4

- Botanistat PF-64 - DD Chemco: Phenoxyethanol (and) Caprylyl Glycol (and) Ethylhexylglycerin (and) Hexylene Glycol 1.00%

## Part 5

- Aculyn™ 44 - Rohm & Haas: PEG-150/Decyl Alcohol/SMDI Copolymer 1.00%

## Manufacturing Procedure

- In main kettle, combine Part 1 ingredients and heat to 78-80°C.
- Combine Part 2 ingredients and heat to 80°C. Mix until uniform using propeller mixer.
- Add Part 2 to Part 1 and mix until uniform.
- Combine Part 3 ingredients. Heat to 80°C and add to batch with propeller mixing.
- Add Part 4 while cooling.
- Homogenize for approximately 2 minutes at 4000 rpm.
- Add Part 5 to batch.
- Homogenize for approximately 1 minute at 4000 rpm.
- Cool batch to 30°C.

## Description

This sunscreen contains Kobo's new SunBoost ATB. This product is a proprietary ratio of anti-oxidants, anti-irritant and anti-inflammatory agents. In this sunscreen, SunBoost ATB increased the SPF from 40 to 54. It can also boost PFA values.

**\*\*The USA limit of Ethylhexyl Salicylate is 5%. This formula is not for use in USA.**

## Active Ingredients

Homosalate	15.00%
Ethylhexyl Salicylate	10.00%
Butyl Methoxydibenzoylmethane	3.00%
Benzophenone	3.00%

## Testing

SPF & UVA-PF: in vivo on 3 subjects



KSL-425D

# Natural (Silicone-Free) Mineral Sunscreen



## Part 1

- GCP55MZ8SG - Kobo Products: Zinc Oxide (And) Caprylic/Capric Triglyceride (And) Polyhydroxystearic Acid (And) Stearoyl Glutamic Acid 22.01%
- NHP55STS - Kobo Products: Titanium Dioxide (And) C13-15 Alkane (And) Stearic Acid (And) Aluminum Hydroxide (And) Polyhydroxystearic Acid 19.20%
- ZnO-C-ASG3J - Kobo Products: Zinc Oxide (And) Stearoyl Glutamic Acid 4.12%
- Dehymuls® PGPH - BASF: Polyglyceryl-2 Dipolyhydroxystearate 4.00%
- SunBoost ATB Natural - Kobo Products: Argania Spinosa Kernel Oil (And) Tocopheryl Acetate (And) Bisabolol** 3.65%
- Dehymuls® LE - BASF: PEG-30 Dipolyhydroxystearate 1.00%

## Part 2

- Deionized Water - Water 36.37%

## Part 3

- Superol Glycerine USP, Kosher Glycerine USP - P&G Chemicals: Glycerin 1.50%
- Keltrol® CG - CP Kelco: Xanthan Gum 0.10%

## Part 4

- MgSO4 7H2O - A&C American Chemicals: Magnesium Sulphate Heptahydrate 1.00%
- ALLANTOIN - Jeen International: Allantoin 0.10%
- Dermofeel® PA-3 - Dr. Straetmans/Evonik: Sodium Phytate 0.10%

## Part 5

- Zemea® - Du Pont & Tate: Propanediol 2.50%
- Hydrolite® 5 Green - Symrise: Pentylene Glycol 0.75%
- AE Preserve® PCG - AE Chemie: Phenethylalcohol (And) Caprylhydroxamic Acid (And) Glycerin 0.60%

## Part 6

- MSS-500/5H - Kobo Products: Silica 2.00%
- MSS-500W - Kobo Products: Silica 1.00%

## Manufacturing Procedure

- In the main vessel, homogenize the first five ingredients in Part 1 until batch is smooth. Add the last ingredient and heat to 80-85°C.
- In side kettle, weigh out Part 2. Pre-mix Part 3 and add to Part 2 with fast speed propeller mixing. Mix for at least 30 minutes.
- With mixing, begin heating Parts 2 and 3 to 65-70°C. Add Part 4, one at a time while heating.
- With homogenization, slowly add Parts 2, 3 and 4 to Part 1.
- Cool with stirring to 50°C and homogenize at medium speed while adding premixed Part 5. Homogenize for at least 3-5 minutes.
- With slow speed homogenization, blend Part 6 into batch and then cool with mixing to 30°C.

## Description

This naturally-derived mineral sunscreen cream is non-greasy with minimal whitening on skin. NHP55STS, (Titanium Dioxide dispersion in C13-15 Alkane) provides SPF protection with a light after feel. The varying particle sizes of zinc oxide (in GCP55MZ8SG and ZnO-C-ASG3J) provide effective UVA protection. SunBoost ATB Natural helps boost SPF. MSS-500/5H and MSS-500W give the product a soft application and non-greasy after feel.

## Active Ingredients

Titanium Dioxide	8.50%
Zinc Oxide	15.50%

## Testing

SPF: in vivo on 5 subjects

# KOBO

## SunBoost ATB

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