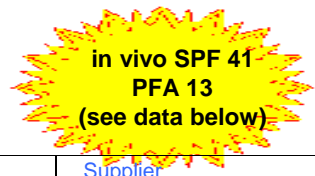


# High SPF Sunscreen with HMZ-50

Formula KSL-138L1



Kobo Products - formulations

Part	Percent	Ingredients	INCI Name	Supplier
1	45.90	Deionized Water	Water	
2	1.50	Propylene Glycol	Propylene Glycol	Symrise
	0.30	Keltrol® CG	Xanthan Gum	CP Kelco
3	15.00	Neo Heliopan® HMS	Homosalate	Symrise
	10.00	Neo Heliopan® OS	Ethylhexyl Salicylate	Symrise
	10.00	<b>HMZ-50</b>	Zinc Oxide (And) Polymethyl Methacrylate	<b>Sumitomo Osaka Cement/Kobo Products</b>
	3.00	Neo Heliopan® 357	Butyl Methoxydibenzoylmethane	Symrise
	3.00	Lipo® GMS 450	Glyceryl Stearate	Lipo Chemicals
	3.00	Neo Heliopan® BB	Benzophenone-3	Symrise
	2.00	Ceraphyl® 368	Ethylhexyl Palmitate	ISP
	2.00	Lipomulse® 165	Glyceryl Stearate (And) PEG-100 Stearate	Lipo Chemicals
	0.50	Lipowax® D	Cetearyl Alcohol (And) Cetareth-20	Lipo Chemicals
	0.50	Covi-ox® T-50	Tocopherol	Cognis Corp.
	0.30	Liposorb® TS	Sorbital Tristearate	Lipo Chemicals
4	1.00	Botanistat PF-64	Phenoxyethanol (and) Caprylyl Glycol (and) Ethylhexylglycerin (and) Hexylene Glycol	DD Chemco
5	1.00	Liposorb® L-20	Polysorbate 20	Lipo Chemicals
	1.00	Aculyn™ 44	PEG-150/Decyl Alcohol/Smdi Copolymer	Rohm & Haas
100				

**Manufacturing Procedure**

- In main kettle, combine Part 1 ingredients and heat to 78-80°C.
- Add Part 2 to Part 1 and mix until uniform.
- Combine Part 2 ingredients and heat to 80°C. Mix until uniform using propeller mixer.
- Combine Part 3. 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 high SPF and PFA sunscreen uses both chemical and physical sunscreens. HMZ-50 is Zinc Oxide entrapped in PMMA. This gives excellent stability to the Zinc Oxide and a great feel to the sunscreen.

**Notes**

Active Ingredient(s)	
Zinc Oxide	5.00%
Homosalate	15.00%
Ethylhexyl Salicylate	10.00%
Oxybenzone	3.00%
Butyl Methoxydibenzoylmethane	3.00%

SPF testing: in vivo on 3 subjects

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## Formulations

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