

CHINA



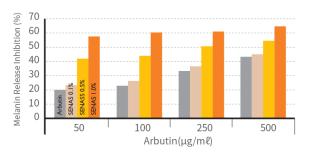
GENERAL DESCRIPTION FOR RAW MATERIAL

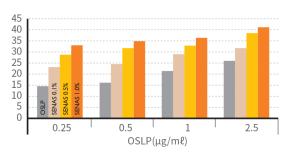
SENAS is Aspergillus ferment with rice. Food fermentations are ancient technologies that harness microorganisms and their enzymes to improve the human diet. Fermented foods keep better, have enhanced flavours, textures and aromas, and may also possess certain health benefits including superior digestibility. Especially, Asian cuisines rely on a large repertoire of fermented foods. In particular, Aspergillus oryzae and Aspergillus sojae, sometimes called koji moulds, are employed in many ways. The koji moulds release amylases that break down rice starch which in turn can be fermented to make rice wine. Fermented rice beverages have numerous local variations and names depending on country and region. Rice wine is called shaoshing in parts of China, sake in Japan, takju or yakju in Korea. The koji moulds are also effective in a variety of legume fermentations of which miso and soy sauce are best know.

EFFICACY

Melanin Formation Inhibition by SENAS as a booster

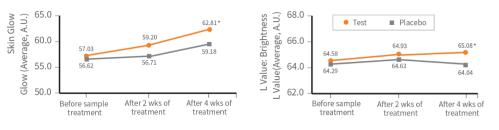
a-MSH induced melanin formation inhibition on B16-F1 Melanoma cell

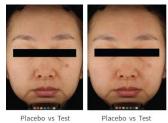




Clinical test result

Placebo : with 2% Niacinamide Test : Placebo + 2% SENAS





0 week

Placebo vs Test 4 week

MOISTURIZING



TECHNICAL INFORMATION

SKIN BRIGHTNESS

Processing & Dosage

The recommended dosage of SENAS is $1.0\% \sim 3.0\%$. SENAS is a water-soluble active ingredient. In order not to disturb the structure and conformation of the actives, it is recommended to incorporate it into formula at the last phase of the formulation at about 40°C.

SKIN TRANSLUCENCY

Storage & Shelf life

SENAS should be stored at room temperature in a tightly closed and lightproof package. If stored in these appropriate conditions the shelf life is at least 24 months. Once the original packing is opened, it is highly recommended to use at once.

Safety information

The following safety tests are assessed.

- Neutral Red Uptake (NRU) assay - No irritation

WHITENING BOOSTING

- Bacterial Reverse Mutation Assay Not induced reverse mutation in the test strains
- In vitro Skin irritation: Reconstructed Human Epidermis Test Method No irritation

SPECIFICATION

PRODUCT INFORMATION

Appearance	Pale yellow ~ Yellow brown liquid	TRADE NAME	SENAS	INCI Key Index
		INCI NAME	COMPOSITION (INCI Key Index)	A : Greater than 50%
Odor	Typical			B : Greater than 25% but less than or equal to 50%
Refractive Index (N _D ²⁰)	1.350 ~ 1.400	WATER	A	b : Greater than 25% bat less than of equal to 50%
pH (Neat)	3.0 ~ 5.0			C : Greater than 10% but less than or equal to 25%
pri (Neat)		BUTYLENE GLYCOL	В	D : Greater than 5% but less than or equal to 10%
Specific Gravity (d20/20)	1.020 ~ 1.070	ASPERGILLUS FERMENT	D	
				E : Greater than 1% but less than or equal to 5%
Total bacterial count	Not more than 100cfu/mL			F : Greater than 0.1% but less than or equal to 1%
Yeast & molds	Not more than 10cfu/mL	STANDARD PACKAGE	20KG	G : Less than or equal to 0.1%

 The content of this document was established with utmost possible care.

However, we reserve the right to add the information, to correct or to delete it without prior notice. 22, Osongsaengmyeong 2-ro, Osong-eup, Heungdeok-gu, Cheongju-si, Chungcheongbuk-do, 28162, KOREA H www.hyundaibioland.co.kr T +82-43-249-6720

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