

ASPEN BARK POWDERED EXTRACT, WATER SOLUBLE PRESERVATIVE

Suitable for beauty and personal care applications.

INCI: Populus Tremuloides (Aspen) Bark Extract

Extraction: Aqueous Extract, Filtered and Spray Dried

Shelf Life: 1 Year

Origin: USA

Background:

The Aspen, also known as the Quaking Aspen, is a tall, deciduous tree that is native to North America. The tree has a slender trunk that can reach heights of up to 80 feet. The beautiful, smooth, white bark is rich in natural salicylates, a compound that acts as a potent natural antimicrobial. Salicylates are thought to help defend and protect aspen trees against the invasion of parasites.

As the media continues to focus its attention on the risks of parabens, formaldehyde releasers, and other synthesized preservatives, product formulators and manufacturers are facing the growing challenge of procuring natural alternatives that provide suitable broad-spectrum protection.

Praan Naturals is pleased to offer manufacturers and formulators a range of premium quality natural preservatives, including Aspen Bark Powdered Extract.

Aspen Bark Powdered Extract helps to resist microbial contamination and control microbial growth while simultaneously offering nutritive skin conditioning benefits.

The specialized process used to manufacture Aspen Bark Powdered Extract isolates the antimicrobial salicylate content so that the extract provides a standardized salicylate content range of 54.0-60.0%.

Uses:

Aspen Bark Powdered Extract is well suited for use as a natural antimicrobial in the production of skin care, hair care and cosmetic formulations. In addition to its application as a natural antimicrobial, Aspen Bark Powdered Extract also helps to condition the skin.

Aspen Bark Powdered Extract is water soluble and can be added to water based formulations or during the water phase of emulsions. The ideal maximum temperature at which to incorporate Aspen Bark Powdered Extract is 140 degrees F (60 degrees C). Maintaining a pH range of 3-9 is recommended.



Properties:

- Product Form: Powdered Extract
- Solubility: Water
- Color: White/Pale
- Odor: Very Faint, Characteristic Aroma
- Texture: Free Flowing, Fine Powder
- pH (3% Solution in Water): 3.8-6.2
- Salicylate Content: 54.0-60.0%
- Skin Conditioning
- Antimicrobial (Antibacterial and Antifungal)
- Microorganisms Tested:
 - E. coli
 - P. aeruginosa
 - S. aureus
 - C. albicans
 - A. brasiliensis

Recommended Usage Rate: 0.2 - 3%

All formulations should be challenge tested by a qualified laboratory to ensure that each batch is properly preserved. The method of production, the specific components of the formulation, the environment in which the batch is formulated and the method of packaging all play a crucial role in the resulting shelf life of a batch. Therefore, we cannot guarantee your results when incorporating natural preservatives into your formulations. Only lab challenge testing can determine how and if a preservative is achieving the desired results.

Storage Information:

Store in a cool, dry location. The ideal storage temperature range is 73-78 degrees Fahrenheit (23-25 degrees Celsius). Do not freeze.

For more information regarding Praan Naturals Aspen Bark Powdered Extract and our range of preservatives and other natural ingredients, visit PRAANNaturals.com or call our Customer Care department at (800) 340-0080 or (203) 702-2500.

Natural Sourcing, LLC • 341 Christian Street, Oxford, CT 06478

Phone: (203) 702-2500 • Toll Free: (800) 340-0080 • Fax: (203) 702-2501 • Web: www.PRAANNaturals.com • Email: info@PRAANNaturals.com

Praan Naturals® and From Nature With Love® are Registered Trademarks of Natural Sourcing, LLC

PROUDLY SERVING YOU FOR OVER 20 YEARS



ASPEN BARK POWDERED EXTRACT, WATER SOLUBLE PRESERVATIVE

Test Results

Minimum Inhibitory Concentrations (MIC), using a standard growth media dilution method and both bacterial and fungal cultures, were determined to evaluate the ability of Aspen Bark Powdered Extract to protect against microbial proliferation. The results, shown below, indicate that Aspen Bark Powdered Extract can provide effective protection for cosmetic formulations.

	<i>E. coli</i>	<i>P. aeruginosa</i>	<i>S. aureus</i>	<i>A. brasiliensis</i>	<i>C. albicans</i>
MIC%	1.00	1.00	2.00	1.00	1.00

Table 1: MIC data for Aspen Bark Powdered Extract

A Double Challenge Test was also completed using 2% Aspen Bark Powdered Extract in a generic cream base formulation. Samples were inoculated with *E. coli*, *P. aeruginosa*, *S. aureus*, *A. brasiliensis* and *C. albicans*.

During the first 28-day incubation period, samples were periodically collected and tested for the presence of these microorganisms. Following this initial 28-day incubation period, the cream samples were then re-inoculated with the microbial cultures and sampled over an additional 28-day period. This table shows the positive preservation results for Aspen Bark Powdered Extract.

	<i>E. coli</i>	<i>P. aeruginosa</i>	<i>S. aureus</i>	<i>A. brasiliensis</i>	<i>C. albicans</i>
Inoculum (Initial)	1.2x10 ⁶	2.1x10 ⁴	8.0x10 ⁵	1.3x10 ⁴	1.8x10 ⁴
Day 0	99.967%	>99.999%	99.525%	99.462%	95.444%
Day 7	>99.999%	>99.999%	99.998%	99.385%	99.889%
Day 14	>99.999%	>99.999%	>99.999%	99.462%	>99.999%
Day 21	>99.999%	>99.999%	>99.999%	99.846%	>99.999%
Day 28	>99.999%	>99.999%	>99.999%	99.769%	>99.999%
Inoculum (Reinoculated)	1.7x10 ⁶	9.9x10 ⁴	2.1x10 ⁶	2.0x10 ⁵	1.1x10 ⁵
Day 7	>99.999%	>99.999%	99.995%	98.500%	>99.999%
Day 14	>99.999%	>99.999%	>99.999%	98.500%	>99.999%
Day 21	>99.999%	>99.999%	>99.999%	99.000%	>99.999%
Day 28	>99.999%	>99.999%	>99.999%	99.850%	>99.999%

Table 2: Challenge Test results for 2% Aspen Bark Powdered Extract in a cream formulation inoculated on day 0 and re-inoculated on day 28. Results show % reduction in viable organisms.

The data presented within this document is offered in good faith, and is based on information believed to be reliable. It is offered for informational and evaluation purposes only. Praan Naturals, LLC provides this product with the understanding that the purchaser will initiate their own testing to determine the suitability of this product for their intended purpose. Praan Naturals assumes no liability or responsibility for any damage to person or property resulting from the use of this product or the incorporation of this product into any final formulation or product. Statements concerning the use of this product are not to be construed as a recommendation, suggestion or inducement to use the product in any way or within any formulation that is unlawful to create or sell, that violates any applicable regulations or that infringes upon any patent. No liability arising out of such a use is assumed.