

Trehalose 100



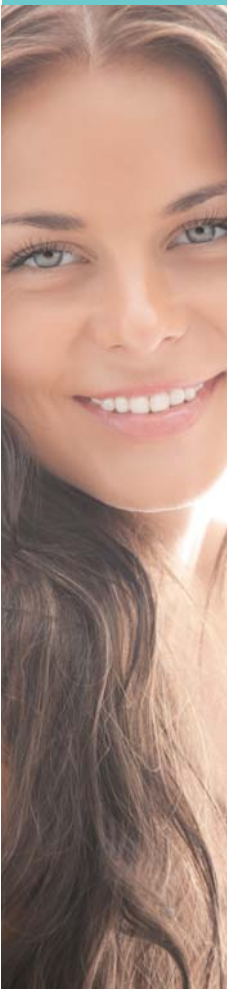
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ECOCERT GREENLIFE, conform
to the COSMOS Standard



unique
disaccharide
from
Hayashibara

Trehalose 100

for skin and hair protection



NAGASE Group

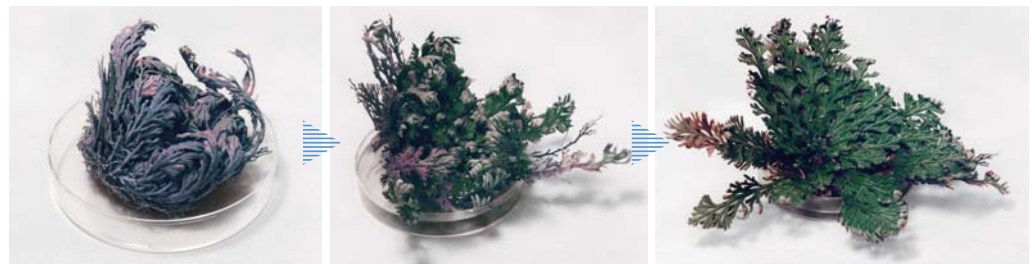
Trehalose 100

unique disaccharide from

Trehalose is a naturally occurring disaccharide present in a wide variety of plant and animal life. The special properties of trehalose enable organisms to survive in the harshest climatic conditions.

The presence of trehalose in plants is one of the reasons a barren desert blooms after rain. A good example of this phenomenon is the “Resurrection plant” - *Selaginella lepidophylla*. Trehalose protects the plant when it is dehydrated, allowing it to “come back to life” when the plant receives water. The same is true for plants and animals that survive freezing and thawing as part of their life cycle.

Hayashibara discovered and isolated two novel enzymes that allow for the mass production of trehalose.

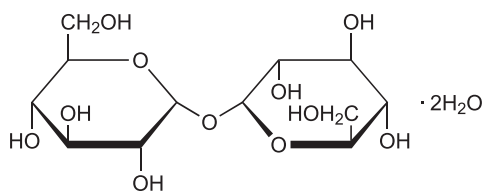


Desiccation form

Rehydration after 2 hr

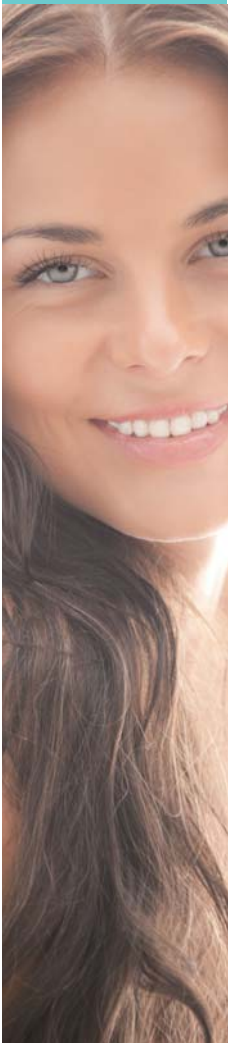
Rehydration after 8 hr

☒ Structure of Trehalose Dihydrate



Trehalose is a white crystalline powder.

It consists of two glucose molecules bound by α,α -1,1 glycosidic linkage.



Property

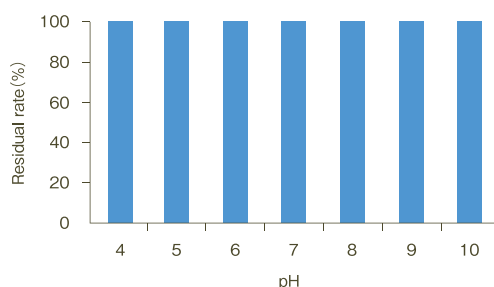
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High stability

Trehalose from Hayashibara is a non-reducing sugar that is very stable over extremes of pH and temperature.

pH stability of Trehalose solution

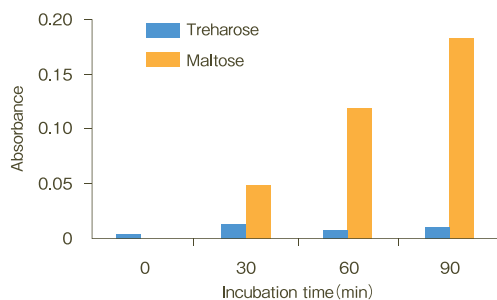
Trehalose is stable over a pH range of 4 to 10 at 100 °C for 24 hours.



Trehalose was dissolved at a concentration of 4% buffer solution at various pH levels and boiled in an oil bath. The residual concentration of trehalose was determined using a HPLC method.

Resistance to coloration by heating

Trehalose is a non-reducing sugar that is stable at high temperatures for extended periods of time. Additionally, Trehalose has been shown not to react with amino acids or peptides so it does not participate in Maillard reactions.



Sugar solutions (10%) dissolved in 0.033mol/L phosphate buffer (pH6) were heated for the indicated times at 120 °C in an oil bath. Coloration was measured by a spectrophotometer at 480 nm.

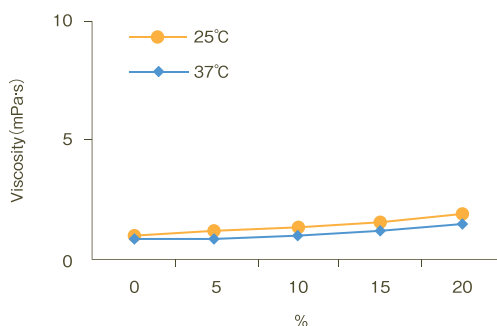
Property

2

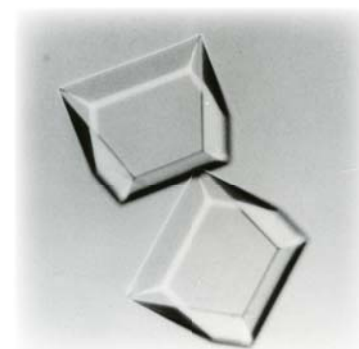
Low viscosity

Viscosity of Trehalose solutions

Trehalose has low viscosity at relatively high concentrations and at various temperatures. It has been shown that Trehalose does not interact with other viscosity agents so it does not effect the desired viscosity of solutions.



The viscosity of Trehalose solution was measured using a B-type viscometer. Trehalose possessed low viscosity across various concentrations and at two temperatures.



Contact Us

Japan

HAYASHIBARA CO., LTD.

Nihon-Seimei Okayama Bldg. II Shinkan
1-1-3 Shimoishii, Kita-ku, Okayama 700-0907, Japan
(TEL/FAX) +81-86-224-4312/+81-86-233-2265
Please visit our website at
<https://www.nagase-personalcare.com/>
for general information and inquiries.

NAGASE & CO., LTD.

Hayashibara Products Sec.
Personal Care Products Div. Life & Healthcare Products Dept.
5-1, Nihonbashi-Kobunacho, Chuo-ku, Tokyo 103-8355, Japan
(TEL/FAX) +81-3-3665-3864/+81-3-3665-3131
dnpchb@nagase.co.jp

North and South America

Nagase America Corp.

546 Fifth Avenue 16th Floor, New York, NY
10036-5000, U.S.A.
(TEL/FAX) +1-212-703-1340/+1-212-398-0687
hayashibara@nagase-nam.com

Nagase do Brasil Comércio de Produtos Químicos Ltda.

Rua Cubatão, 86, 304 e 306, Vila Mariana CEP 04013-000,
São Paulo, SP
(TEL/FAX) +55-11-3251-3111/+55-11-3262-3451
contato@nagasebrasil.com.br

Europe

Nagase (Europa) GmbH

Immermannstrasse 65C, 40210 Dusseldorf, Germany
(TEL/FAX) +49-211-866200/+49-211-3237068
hayashibara@nagase.de

Nagase (Europa) GmbH, London Branch

33 Cavendish Square, London,
W1G 0PW, UK
(TEL/FAX) +44-(020)7182-4948/+44-(020)3402-2427
hayashibara@nagase.de

Asia

Nagase Business Management and Planning (Shanghai) Co., Ltd.

02, 7F Eco City, 1788 Nanjing Road(W),
Shanghai, P.R. China 200040
(TEL/FAX) +86-(21)33607851/+86-(21)33607852
hayashibara@nagase.cn

Nagase (Hong Kong) Ltd.

Units 1208-09, 12/F., Miramar Tower,
132 Nathan Road, Tsimshatsui,
Kowloon, Hong Kong., S.A.R., P.R. China
(TEL/FAX) +852-2375-0000/+852-2377-2728
NSZ.LSci@nagase.com.cn

Nagase (Taiwan) Co., Ltd.

16F, No. 248, Sec.3, Nanking E.Rd., Taipei, Taiwan, R.O.C.
(TEL/FAX) +886-(2)27733668/+886-(2)27737288

Nagase Korea Corp.

Danam Bldg., 23F. 10, Sowol-ro, Jung-gu, Seoul,
Korea 04527
(TEL/FAX) +82-(2)7538589/+82-(2)7348747

South East Asia and Oceania

Nagase Singapore (Pte) Ltd.

600 North Bridge Road #11-01 Parkview Square
Singapore 188778
(TEL/FAX) +65-63980088/+65-63980227
hayashibara@nagase.com.sg

Nagase (Thailand) Co., Ltd.

No 952, Ramaland Building, 14th Floor, Rama IV Road,
Kwaeng Suriyawongse, Khet Bangrak, Bangkok
10500 Thailand
(TEL/FAX) +66-(2)6327253/+66-(2)6327254
hayashibara@nagase.co.th

Nagase India Private Ltd.

312, Hubtown Solaris, N.S. Phadke Marg, Near East West
Flyover, Andheri East, Mumbai 400 069, India
(TEL/FAX) +91-22-6681-8585/+91-22-6681-8508
hayashibara@nagase.co.in

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INCI name: Trehalose

**Trehalose 100 is manufactured by
Hayashibara Co., Ltd. in Japan.**

