

reducol™ phytosterol and phytostanol blend

a clinically proven ingredient to help support healthy cholesterol levels[◇] safely and naturally

description

A unique blend of phytosterols and phytostanols derived from coniferous trees, which is proven to block the absorption of cholesterol from the gastro-intestinal tract.

what makes Reducol™ blend unique?†

Phytosterols and phytostanols are specific phytochemicals that resemble cholesterol in structure. Phytosterols and phytostanols compete with cholesterol for absorption in the small intestine. This, in turn, reduces dietary cholesterol absorption^{1,2}. Overuse of sterols, however, leads to high levels of sterols in the blood, which have been associated with atherosclerosis. Phytostanols, like phytosterols, reduce cholesterol absorption but do not increase blood sterol content³. Reducol phytosterol and phytostanol blend thus has an inherent advantage over generic plant sterols by helping to support healthy cholesterol levels without increasing sterol levels in blood^{3,4}. Reducol blend has been shown to be effective in foods^{2,3,5} and supplements^{4,6}.

benefits†

Reducol phytosterol and phytostanol blend has been clinically tested and demonstrates statistically significant inhibition of cholesterol absorption in the small intestine⁷ when consumed in foods as part of a healthy diet versus healthy diet alone.

Allowable product claims will vary by country. Some regulatory agencies recognize the health benefits of phytosterols to support healthy cholesterol levels and allow health claims on food labels. The US FDA and the European Union allow certain structure/function claims in certain foods and supplements for the risk reduction of coronary heart disease.

Reducol phytosterol and phytostanol blend is suitable for a wide range of food and supplement applications, including margarine spreads, yogurts, baked goods, snack bars, beverages, cereals, nutrition bars and beverages.



advantages

- optimum blend of plant sterols and stanols
- enhanced with stanols, unlike commodity sterols
- low daily dosage for optimum effect
- minimal impact on food sensory properties
- from a renewable source
- non-GMO source
- kosher
- GRAS
- halal

[◇] When part of a healthy diet

[†] These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

safety and regulatory

Reducol™ Ester blend and Reducol™ Original Powder (OP) blend are food grade and suitable for food products in accordance with applicable regulations. Check with your local sales representative to ensure that the grade you are interested in is suitable for the intended purpose.

Reducol™ Plus 200 blend and Reducol™ M300 blend are designed for use in dietary supplements. They are food grade, as required for use in dietary supplements, in accordance with applicable U.S. government rules and regulations.

Phytosterols and phytostanols are generally recognized as safe (GRAS) by the U.S. FDA.

In the EU, phytosterols, phytostanols and their esters are approved for use in a variety of novel food and beverage products pursuant to Regulation (EC) No. 258/97.

Certain structure/function claims are allowed in the US and EU for plant sterols and stanols. Examples of permitted claims:

United States:

Foods containing at least 0.4 g of phytosterols per serving eaten twice a day for a total daily intake of at least 0.8 g, as part of a diet low in saturated fat and cholesterol, may reduce the risk of heart disease (see 21 C.F.R. § 101.83(e)).

European Union:

Plant sterols/stanols have been shown to lower/reduce blood cholesterol. High cholesterol is a risk factor in the development of coronary heart disease (see EC 686/2014).

Typical ingredient declaration for food applications: plant sterols and stanols.

Please consult with your Ashland solver for labelling requirements and trademark license agreement.

physical and chemical properties

Reducol phytosterol and phytostanol blends are naturally waxy products. A number of products are available for optimum handling for product needs.

product name	form	appearance	sterol/stanol content	sitostanol content
Reducol™ Ester	semisolid paste at ambient temperatures	creamy white solid in amber liquid	55% min	15-35%*
Reducol™ OP	fine powder	white, waxy powder	97% min	15-35%
Reducol™ M300	pill	spherical, white to tan particles	97%	15-35%
Reducol™ 65% granulation	granulated product with added ingredients	granular powder	53-65%	12-35%*

* free sterol profile

product forms and packaging

- Reducol™ Ester blend is sold in 180 kg epoxy lined steel drums
- blends are also available as prills and free flowing powders supplied in 20 kg bag in boxes or supersacks (availability dependent)

¹Gylling H, Siimes MA, Miettinen TA. J Lipid Res. 1995 Aug;36(8):1807-12

²Jones PJ, Ntanos FY, Raeini-Sarjaz M, Vanstone CA. Am J Clin Nutr. 1999 Jun;69(6):1144-50.

³De Graaf J, De sauvage Nolling PR, Van Dam M, Belsey EM, Kaestlein JJ, Haydn Pritchard P, Stanlenhoe AF. Br J Nutr. 2002 Nov;88(5):447-88

⁴Maki KC, Lawless AL, Reeves MR, Dicklin MR, Jenks BH, Shneyvas E, Brooks JR. In: J Food Sc and Nutr 2012 Jun;63(4):476-82

⁵Emata DV, Gimenez LM, Tamayo NL, Gertrude C. Phillippine J Intr Med 2011 Dec 49(4):223-33

⁶Maki KC, Lawless AL, Reeves MR, Kelley MS, Dicklin MR, Jenks BH, Shneyvas E, Brooks JR. Nutr. 2012 Jul 14 [Epub ahead of print]

⁷Cantrill R, rev Kawamura Y. Phytosterols, Phytostanols and Their Esters Chemical and Technical Assessment. Reviewed for 69th JECFA (CTA) 2008 Page 1(13)

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