Without Apeel

Apeel

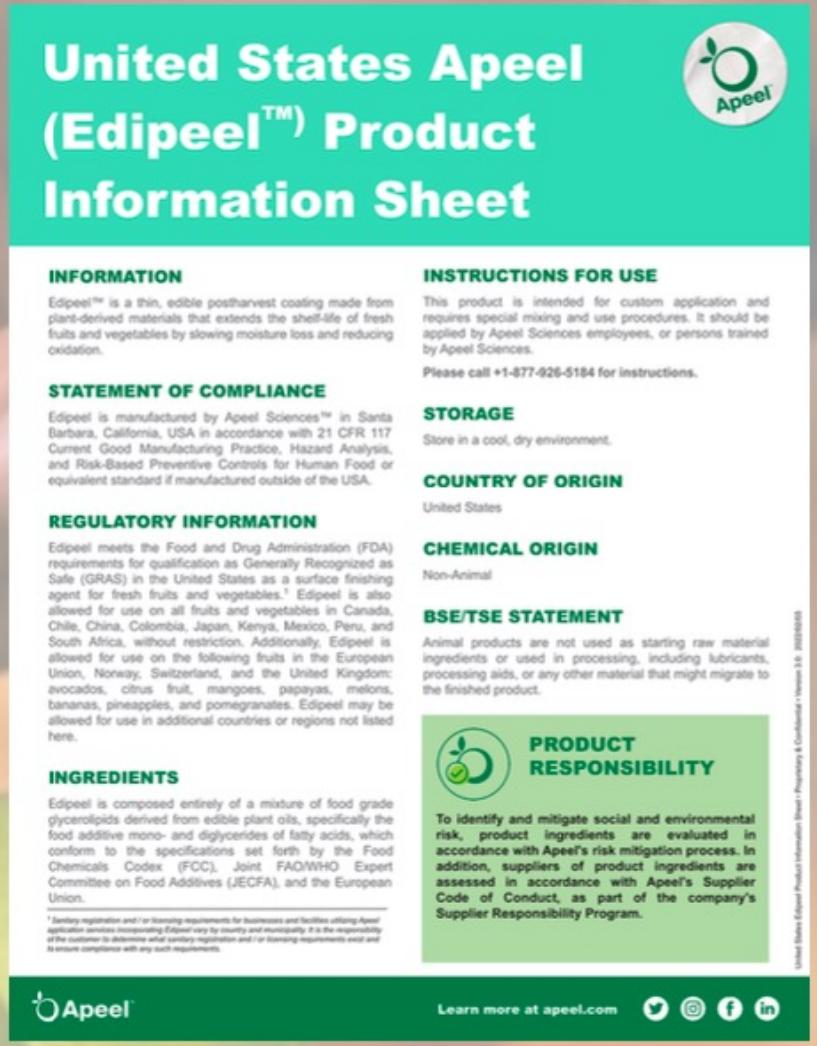
31 days

With Apeel

New coating of all fruit and vegetables approved including organic

Claimed Advantages

- THANKS TO COATING, THE AMOUNT OF PACKAGING WASTE CAN BE REDUCED.
- Food waste can be reduced if fruits and vegetables have a longer shelf life.
- If it were possible to transport exotic fruits by ship instead of by air in the future, this would save large amounts of greenhouse gases.



United States Apeel (Edipeel™) Product Information Sheet

INFORMATION

Edipeel™ is a thin, edible postharvest coating made from plant-derived materials that extends the shelf-life of fresh fruits and vegetables by slowing moisture loss and reducing oxidation.

STATEMENT OF COMPLIANCE

Edipeel is manufactured by Apeel Sciences™ in Santa Barbara, California, USA in accordance with 21 CFR 117 Current Good Manufacturing Practice, Hazard Analysis, and Risk-Based Preventive Controls for Human Food or equivalent standard if manufactured outside of the USA.

REGULATORY INFORMATION

Edipeel meets the Food and Drug Administration (FDA) requirements for qualification as Generally Recognized as Safe (GRAS) in the United States as a surface finishing agent for fresh fruits and vegetables.† Edipeel is also allowed for use on all fruits and vegetables in Canada, Chile, China, Colombia, Japan, Kenya, Mexico, Peru, and South Africa, without restriction. Additionally, Edipeel is allowed for use on the following fruits in the European Union, Norway, Switzerland, and the United Kingdom: avocados, citrus fruit, mangoes, papayas, melons, bananas, pineapples, and pomegranates. Edipeel may be allowed for use in additional countries or regions not listed here.

INGREDIENTS

Edipeel is composed entirely of a mixture of food grade glycerolipids derived from edible plant oils, specifically the food additive mono- and diglycerides of fatty acids, which conform to the specifications set forth by the Food Chemicals Codex (FCC), Joint FAO/WHO Expert Committee on Food Additives (JECFA), and the European Union.

† Sanitary registration and / or licensing requirements for businesses and facilities utilizing Apeel application services incorporating Edipeel vary by country and municipality. It is the responsibility of the customer to determine what sanitary registration and / or licensing requirements exist and to ensure compliance with any such requirements.

INSTRUCTIONS FOR USE

This product is intended for custom application and requires special mixing and use procedures. It should be applied by Apeel Sciences employees, or persons trained by Apeel Sciences.

Please call +1-877-926-5184 for instructions.

STORAGE

Store in a cool, dry environment.

COUNTRY OF ORIGIN

United States

CHEMICAL ORIGIN

Non-Animal

BSE/TSE STATEMENT

Animal products are not used as starting raw material ingredients or used in processing, including lubricants, processing aids, or any other material that might migrate to the finished product.

PRODUCT RESPONSIBILITY

To identify and mitigate social and environmental risk, product ingredients are evaluated in accordance with Apeel's risk mitigation process. In addition, suppliers of product ingredients are assessed in accordance with Apeel's Supplier Code of Conduct, as part of the company's Supplier Responsibility Program.

United States Edipeel Product Information Sheet • Proprietary & Confidential • Version 3.0 20220303

Apeel

Learn more at apeel.com

TWO COMPONENTS:

Invisipeel: can be applied by farmers to crops in the field.

Edipeel: can be applied after the harvest.

- Preservatives (to keep the external appearance of the fruit or vegetable fresh).
- Pesticides (to create a physical barrier to pests).
- Fungicides (to prevent the anthracnose fungus from causing avocados to shrivel, for example)

There is no actual list of ingredients listed anywhere on the website www.apeel.com.

INGREDIENTS:

APEEL'S EDIPEEL IS COMPOSED ENTIRELY OF A BLEND OF FOOD GRADE GLYCEROLIPIDS DERIVED FROM EDIBLE VEGETABLE OILS, SPECIFICALLY THE FOOD ADDITIVES MONO- AND DIGLYCERIDES OF FATTY ACIDS THAT MEET THE SPECIFICATIONS OF THE FOOD CHEMICALS CODEX (FCC), THE JOINT FAO/WHO EXPERT COMMITTEE ON FOOD ADDITIVES (JECFA) AND THE EUROPEAN UNION.

DIRECTIONS FOR USE:

This product is intended for custom use and requires specific mixing and application procedures. It should be applied by Apeel Sciences employees or persons trained by Apeel Sciences.

Ingredient monoglyceride

Mono- and diglycerides contain trans-fat, which promotes inflammation in the body and has been associated with heart disease, diabetes, stroke, and obesity.

In 2006, the US Food and Drug Administration finally recognized the dangers of trans fat and began requiring manufacturers to list trans-fat on food labels.

Apeel patent

https://patents.justia.com/patent/11472970

In another aspect of the present disclosure, a method of forming a protective coating includes (i) providing a solution comprising a solute dissolved in a solvent, the solute comprising a composition of compounds selected from the group consisting of 1-monoacylglycerides, fatty acids, esters, amides, amines, thiols, carboxylic acids, ethers, aliphatic waxes, alcohols, salts (inorganic and organic), and compounds of Formula I

Exemplary alkenyl groups include ethenyl, propenyl, n-butenyl, and i-butenyl. A C2-C6 alkenyl group is an alkenyl group containing between 2 and 6 carbon atoms. As defined herein, the term "alkenyl" can include both "E" and "Z" or both "cis" and "trans" double bonds.

0163-769X/08/$20.00/0
Printed in U.S.A.

Endocrine Reviews 29(6):647–676

doi: 10.1210/er.2008-0007

Glycerolipid Metabolism and Signaling in Health and Disease

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Maintenance of body temperature is achieved partly by modulating lipolysis by a network of complex regulatory mechanisms. Lipolysis is an integral part of the glycerolipid/free fatty acid (GL/FFA) cycle, which is the focus of this review, and we discuss the significance of this pathway in the regulation of many physiological processes besides thermogenesis.

GL/FFA cycle is referred to as a "futile" cycle because it involves continuous formation and hydrolysis of GL with the release of heat, at the expense of ATP. However, we present evidence underscoring the "vital" cellular signaling roles of the GL/FFA cycle for many biological processes. Probably because of its importance in many cellular functions, GL/FFA cycling is under stringent control and is organized as several composite short substrate/product cycles where forward and backward reactions are catalyzed by separate enzymes. We believe that the renaissance of the GL/FFA cycle is timely, considering the emerging view that many of the neutral lipids are in fact key signaling molecules whose production is closely linked to GL/FFA cycling processes.

The evidence supporting the view that alterations in GL/FFA cycling are involved in the pathogenesis of "fatal" conditions such as obesity, type 2 diabetes, and cancer is discussed. We also review the different enzymatic and transport steps that encompass the GL/FFA cycle leading to the generation of several metabolic signals possibly implicated in the regulation of biological processes ranging from energy homeostasis, insulin secretion and appetite control to aging and longevity. Finally, we present a perspective of the possible therapeutic implications of targeting this cycling. (*Endocrine Reviews* 29: 647–676, 2008)

"It is discussed that alterations in the GL/FFA cycle are involved in the development of "killer" diseases such as obesity, type 2 diabetes, and cancer."

Board of directors set for new International Fresh Produce Association 2021

(IFPA) is the largest and most diverse international association serving the entire fresh produce and floral supply chain

Directors representing Industry Expertise

- Finance & Business Management: Michael Castagnetto, President, Robinson Fresh
- Food Safety: Cheryl Enlow, VP of QA and Food Safety, Renaissance Food Group
- Supply Chain Logistics: Drew Zabrocki, General Manager, Value Chain Insights & Interoperability, Semios
- Marketing & Merchandising: Abby Prior, SVP Sales & Marketing, Bright Farms
- Sustainability: Nikki Cossio, Founder & CEO, Measure to Improve LLC.
- Technology: James Rogers, CEO, Apeel Sciences

Who is financing Apeel?

Unresolved questions

- Which glycolipids are used and how are they modified (fats/trans fats) ?
- What chemicals does the company use to extract the lipids and glycerolipids from plant residues?
- Where does the company source the leftover, already processed plant materials it uses, and what is the quality of these plant materials?
- What chemicals may have already been used in the plant materials themselves that are then included in the Apeel organic food solutions?
- What is the solidification process like?
- Do the materials always come from the same sources (and only organic materials), or do the starting materials change over time?
- If glycolipids are essential for us and are involved in the development of many diseases, how do modifications of them affect us?
- Why are trans-fats allowed ?
- Consequences for microbiome ?
- Environmental impact ?
- The net CO_2 benefit is highly questionable when factories are set up worldwide.