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clean label claim

Researching emulsifiers and surfactants that are suitable alternatives, for example BVO, that meet GRAS criteria, yet, do not raise red-flags to the consumer is highly desirable.

Functional waters and carbonated soft drinks (CSD's) currently use emulsifiers and surfactants in order to solubilize oils and other non-polar compounds to be clear, or transparent, in the finished beverage.

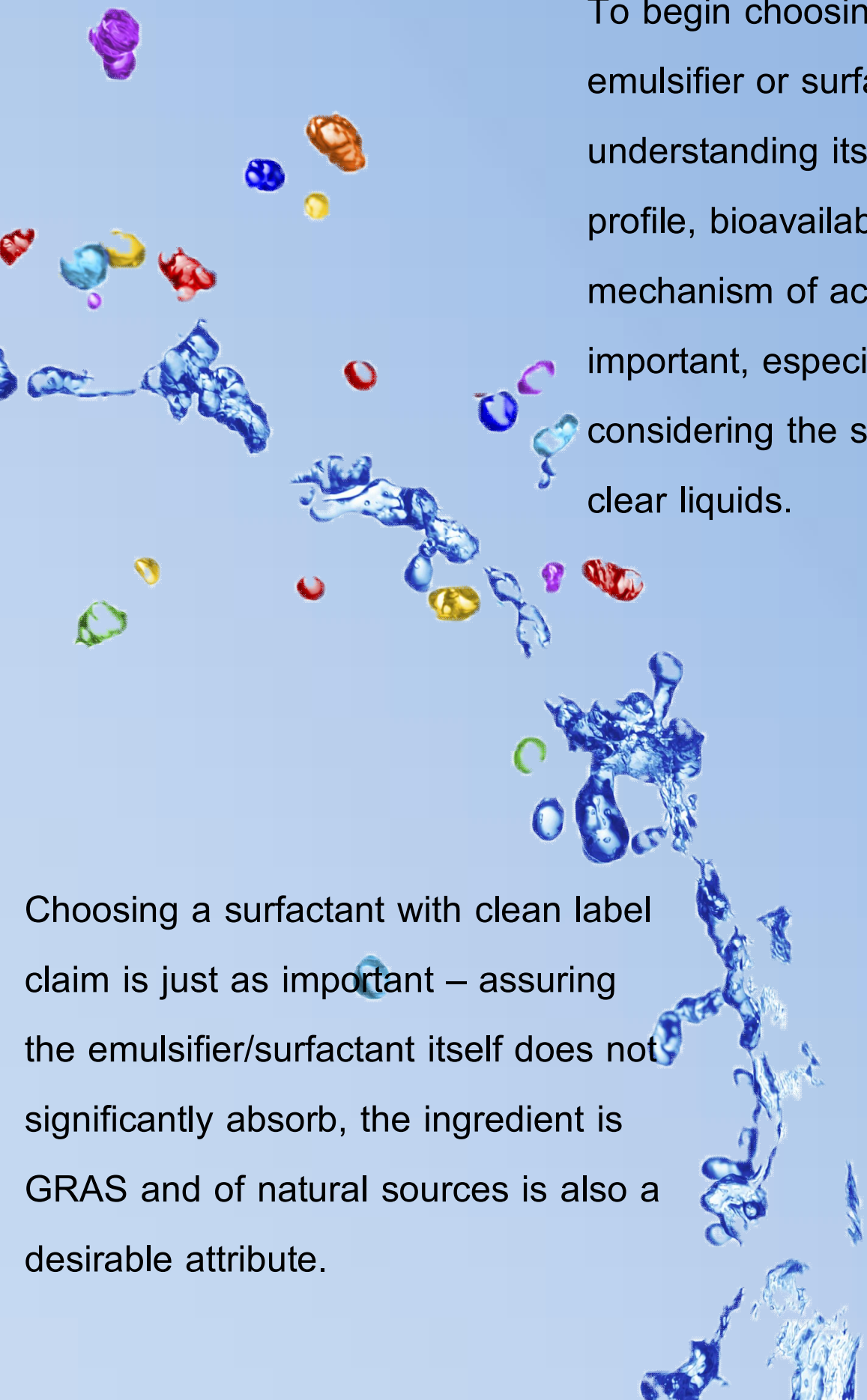
Probably the best and most recent example of this is the use of Brominated Vegetable Oil (BVO) in orange and citrus flavored beverages. Companies are beginning to remove BVO from beverages[3, 6].

Clean label claim emulsifiers or surfactants

Clean label claim emulsifiers and surfactants are a new trend among food and beverage brands[1,2,3]. Emulsifiers or surfactants such as Polysorbates, Brominated Vegetable Oil and Polyoxyethylated Castor oil are among several that either have had negative consumer perception on a label; in some cases simply not approved for direct food use, or, GRAS status[3,4,5]. There are three categories of emulsifiers/surfactants: natural, naturally derived and synthetic. Examples of natural emulsifiers include: Lecithin, Quillaia Extract, Xanthan Gum etc… Examples of naturally derived emulsifiers are: Ester Gum, Modified Gum Food Starch, Modified Gum Acacia etc… Examples of synthetic surfactants are Polysorbates, Sodium Lauryl Sulfate, Sorbitan Monostearate etc…

CHOOSING AN EMULSIFIER/SURFACTANT

In order to dissolve oils or non-polar compounds into clear liquids, the particle size must be small enough in order to be transparent once dispersed into a beverage. This is analyzed by measuring particle size and determining the width of the particle's distribution. The more narrow the width, the better distribution and more clear the oil or non-polar compound is in a beverage.



To begin choosing an appropriate emulsifier or surfactant, understanding its pharmacokinetic profile, bioavailability and mechanism of action is very important, especially when considering the solubility of oils into clear liquids.

Choosing a surfactant with clean label claim is just as important – assuring the emulsifier/surfactant itself does not significantly absorb, the ingredient is GRAS and of natural sources is also a desirable attribute.

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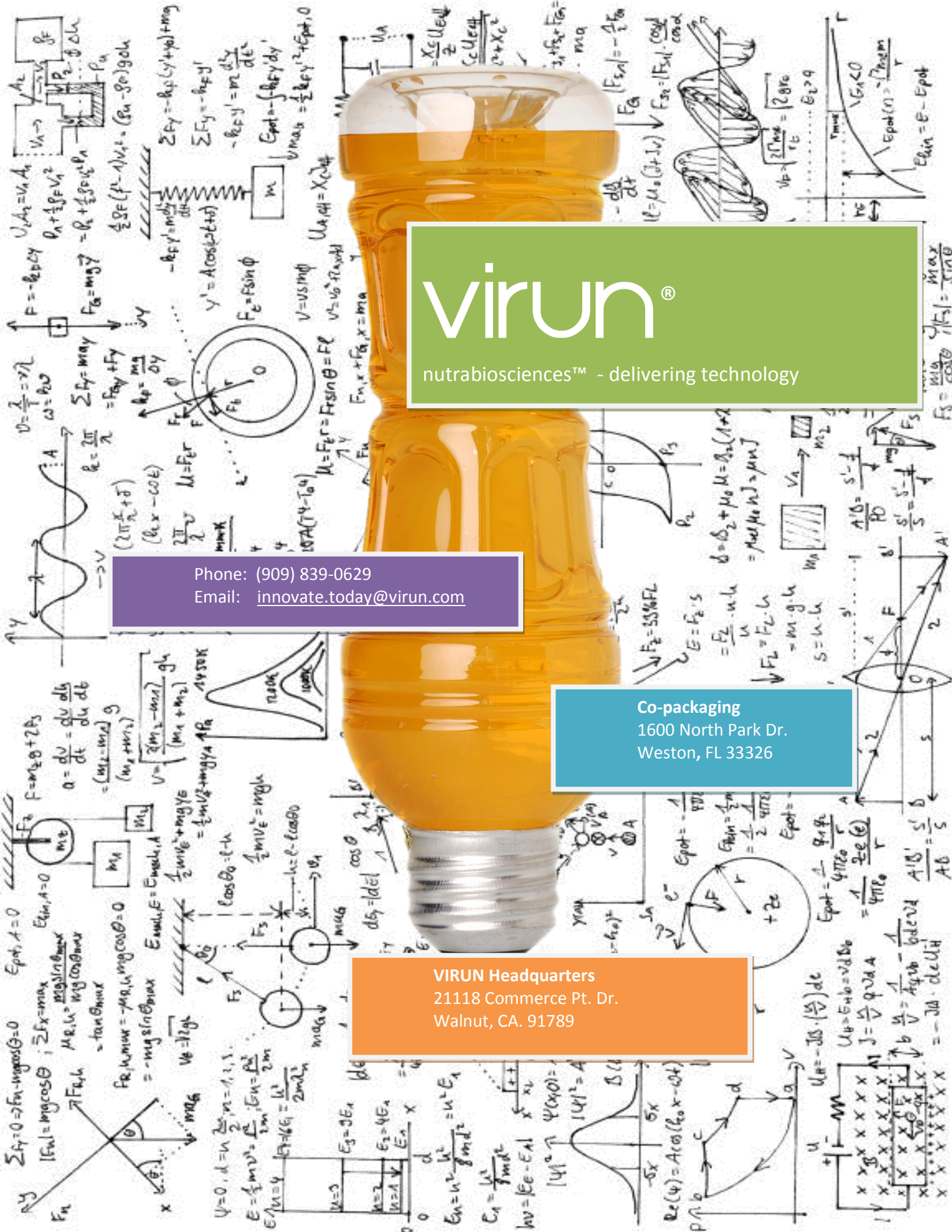
VIRUN specializes in delivering oils and non-polar compounds to foods, beverages and supplements that are clearer, stable and with exceptional flavor. With over 40 patents and patents-pending, VIRUN enables clear, shelf stable Omega-3 or SDA, CoQ10, Resveratrol, PQQ, Astaxanthin, Lutein, Beta Carotene,



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Phone: (909) 839-0629
Email: innovate.today@virun.com

Co-packaging
1600 North Park Dr.
Weston, FL 33326

VIRUN Headquarters
21118 Commerce Pt. Dr.
Walnut, CA. 91789

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[1]**Natural emulsifiers 'not good enough' to work on their own, says formulation Expert**. FoodNavigator.com. By Nathan Gray , 17-Apr-2012.

[2] **Where do your products sit in the clean label hierarchy?** FoodNavigator.com. By Elaine WATSON , 07-Jun-2013

[3]**PepsiCo cuts flame retardant BVO from US Gatorade but not Mountain Dew.** BeverageDaily.com. By Ben Bouckley. 28-Jan-2013

[4]**Food additives.** Brominated vegetable oils; removal from list of substances generally recognized as safe. Federal Register (1970), 35(18), 1049

[5]**Castor Oil, polyoxyethylated. For use only as an emulsifier in nitrocellulose coatings for paper and paperboard intended for use in contact with food only of the types identified in paragraph (c) of this section, table 1, under Types IV A, V, VII A, VIII, and IX; and limited to use at a level not to exceed 8 percent by weight of the coating solids.** Code of Federal Regulations. Title 21, Volume 3. Revised as of April 1, 2013. CITE: 21CFR176.170. PART 176 -- INDIRECT FOOD ADDITIVES: PAPER AND PAPERBOARD COMPONENTS.

[6]**Coca-Cola removing BVO from Powerade.** FoodNavigator.com. By Elaine WATSON , 05-May-2014

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