

## HOW TO IMPROVE FLAVOR ENCAPSULATION?



### WHAT IS FLAVOR ENCAPSULATION?

Flavors and flavoring agents are **sensitive aromatic molecules** that are used in the food industry as additives. They can be easily degraded and lose their flavors during the various product processes and storage.

In order to maintain their integrity and stability as long as possible, flavors must be protected –**encapsulated**–, in an envelop that will be further dissolved and will release the flavors with the same intensity.

### GUM ACACIA

Gum Acacia is an **all-natural and vegetal hydrocolloid** coming from acacia trees. It is allergen and GMO free.

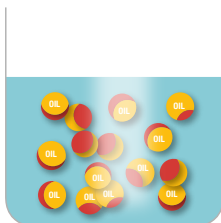
Gum Acacia is a perfect envelop for flavor encapsulation. It is especially used to encapsulate

liposoluble substances, essential oils, vitamins, flavors and colorings. It also provides **functional properties** and increases the stability of oil in water emulsions before a spray drying operation.

### The action of Gum Acacia during emulsions and encapsulations

1

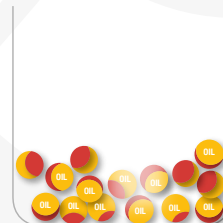
Successful emulsion of dispersed droplets



- Film forming ability thanks to various characteristics including negative charges
- Flavor retention
- Protection against moistures and contaminations
- Stabilization of the droplets size (1 $\mu$ )

3

Flavor encapsulation in powder



- Film barrier against oxydation and volatiles losses
- Reduction of the surface tension between the continuous and dispersed phases of the emulsion.

2. Spray drying operation



- Protective carrier

## HOW CAN GUM ACACIA IMPROVE FLAVOR ENCAPSULATION?

Thanks to investment in Research & Development, Alland & Robert has developed a reference called **Instant Soluble Gum Acacia 338I**, which is dedicated to the encapsulation of flavors, oleoresins or colors under powder form. It is particularly effective for essential oils, sensitive and volatile compounds, and provides oxydative stability. As an expert of Gum Acacia, Alland & Robert has worked on the various aspects of encapsulation in order to offer customers the most convenient product.

ALL NATURAL AND VEGETAL ENVELOP, WITH NO ADDITIVES ADDED

A FORMULATION THAT MAXIMIZES THE FILM-FORMING ABILITIES

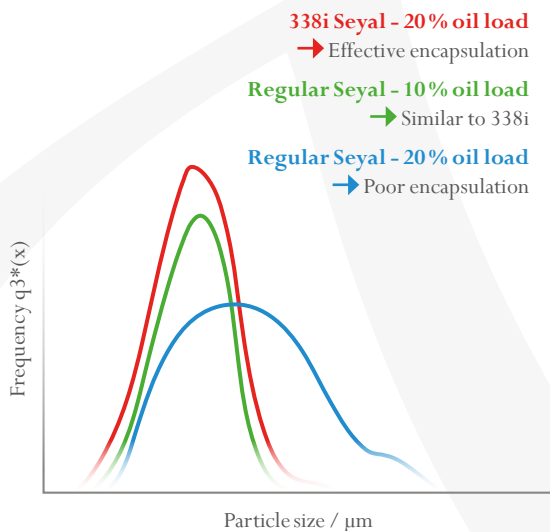
PROTECTION FROM EXTERNAL FACTORS

STABILIZATION AND EXCEPTIONAL RETENTION OF PURE, LONG LASTING FLAVORS

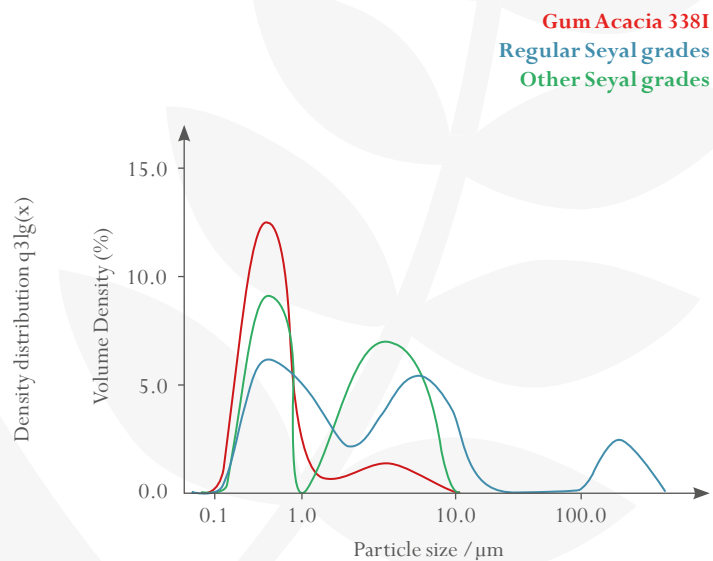
ECONOMIC AND COST SAVING PRODUCT THAT DECREASES THE RATIO GUM/OIL WHILE MAINTAINING THE SAME EFFICIENCY THAN OTHER GUMS.

Alland & Robert studies have shown that **Instant soluble Gum Acacia 338 I** offers a **better and longer stabilization of oil in water emulsions**, compared to other seyal Gum Acacia grades.

### Comparison of oil in water emulsion : 338i vs Regular Seyal



### Emulsion stabilization behavior study after 4 months 338I vs Regular Seyal



Thanks to a better stabilization of emulsions, **Instant soluble Gum Acacia 338 I** brings a **better protection and encapsulation of flavors**. It will provide protection against external stresses like light and oxygen, and prevent poor encapsulation, which can cause a loss of aromatic power and oxydation. Bad taste or weak flavors can also occur when encapsulation has not been correctly done.

**Instant soluble Gum Acacia 338 I** will also allow food technologists to **increase the oil load in spray drying operations**, and thus use less powders while keeping the same oil percentage in their formulations.

Increasing the oil load also implies an **economic gain** during the spray drying operation, as there is less water to evaporate.