

# FOOD

# VIDOGUM L®

(Native locust bean gum)



## Viscosity and Flow behaviour

### Raw Material

**VIDOGUM L** (native locust bean gum E 410) is extracted from the endosperm of the wild 'Ceratonia siliqua L.' tree. The active chain-like hydro-colloidal molecules belong to the Galactomannan group.

Origin: Mediterranean countries.

### Production

Separation of the endosperm, milling, sifting, standardisation.

### Characteristics

**VIDOGUM L** is only suitable for products that pass through a heating process. The viscosity only builds late in the heating process:

- The counter-pressure in a closed heating system will thereby be reduced
- Better retention of fruit pieces in fruit preparations due to lower shear forces.
- Ham injections
- In cakes and pastry, a specific and fine crumb structure can be achieved with the viscosity increase of the batter/dough during the baking process (e.g. French brioche).

**VIDOGUM L** comes in a range of various viscosities, with L 150 having high viscosity, L 200 medium viscosity and L 250 lower viscosity, whereby the synergistic behaviour with other hydrocolloids (gel strength increase) is not affected by the viscosity.

Flow behaviour:

**VIDOGUM L** demonstrates a creamy mouthfeel and has considerably less pseudo-plasticity compared to guar gum. This typical mouthfeel makes **VIDOGUM L** the traditionally used hydrocolloid in dairy products.

VIDOGUM GH: slimy ↔ VIDOGUM SP: full-bodied ↔ **VIDOGUM L**: creamy

Gelling strength:

**VIDOGUM L** is particularly effective in strengthening the gelling network of agar-agar and k-Carrageenan. Their gel structure becomes considerably more elastic with the addition of **VIDOGUM L**.

The gelling optimum in aqueous solutions of k-Carrageenan and **VIDOGUM L** is achieved at a ratio of 70:30.

Together with xanthan gum, **VIDOGUM L** forms a similar strong gel at low dosages.

The gelling optimum in aqueous solutions of xanthan gum and **VIDOGUM L** is achieved at a ratio of 50:50.

## Benefits

- Particularly strong synergy with k-Carrageenan and agar-agar → strengthening of the gelling network → cost reduction.
- Syneresis reduction, especially important for k-Carrageenan gels.
- Increase of elasticity of k-Carrageenan gels.
- Forms gels after heating, through synergy with xanthan gum (→ mayonnaise, dressings).
- Synergistic viscosity increases when used together with native and modified starch.
- **VIDOGUM L** is not suitable for cold applications without a heating step.
- Not freeze-thaw stable but binds the water again after a 2<sup>nd</sup> heating step.
- Creamy mouthfeel is particularly well suited for dairy products, fruit quark and milk spreads.
- Very good aroma release and very good taste neutrality.
- Solubility in sucrose solutions up to 60Bx.

## Areas of use

Product Group	Dosage [%]	Benefits in final product using a selected example
Dairy and dessert products	0.2 – 0.4	Thermally processed quark desserts – together with k-Carrageenan or gelatine: <ul style="list-style-type: none"> <li>• Creamy mouth-feel and optimal melting-action.</li> <li>• forms a firm, spoon-able and elastic structure with k-Carrageenan.</li> <li>• Outstanding aroma release.</li> <li>• Syneresis reduction of pure k-Carrageenan gels.</li> <li>• As a rule, the addition before fermentation requires a fat content: &gt; 14% and the use of additional hydrocolloids as stabilisers (e.g. pectin, agar-agar).</li> </ul>
Fruit products and soft drinks	0.15 – 0.3	Fruit preparations with pectin: <ul style="list-style-type: none"> <li>• Especially suitable for fruit preparations for all non-stir / set yoghurts.</li> <li>• Flows pleasantly from the spoon – can be easily stirred into the white mass (→ fruit corner packages)</li> <li>• Outstanding aroma and acidity release (→ freshness, fruitiness).</li> <li>• Solubility in sucrose solutions up to 60 Bx.</li> </ul>
Culinary products	0.1 – 0.2	Mayonnaise, salad dressings – hot process with xanthan and modified starch: <ul style="list-style-type: none"> <li>• Gels strongly with xanthan gum:               <ul style="list-style-type: none"> <li>- stabilisation of herbs</li> </ul> </li> <li>• Not freeze-thaw stable, but can be used in certain cases for frozen products that will be heated again.</li> </ul>
Meat products	0.1 – 0.3	Ham injections, injections for cooked and cured products together with k-Carrageenan. Only for hot applications – particularly recommended when very high yields (> 170%) are required: <ul style="list-style-type: none"> <li>• Improved slicing consistency.</li> <li>• Reduction of cooking losses.</li> <li>• Reduction of syneresis in vacuum packed products.</li> </ul>
Organic products		<b>VIDOGUM L</b> may be used for organic products within the framework of the current EU directives.
Others	0.1 – 0.6	Only suitable for applications which include a heating step. <ul style="list-style-type: none"> <li>• Soya desserts and drinks.</li> <li>• Fat-free sauce binder.</li> <li>• Thickening agent for baby food (home preparation) → helps against vomiting.</li> <li>• Gluten free pasta ‘al dente’.</li> <li>• Gluten free bread: improved crumb structure.</li> </ul>