

VIVAPHARM® Alginates

Natural Versatile Hydrocolloids



“Dive in” and discover JRS PHARMA's

Sodium Alginate

Calcium Alginate

Alginic Acid

extracted from sustainable Brown Seaweed

JRS PHARMA
The Global Excipient Maker



FAMILY
A Member of the JRS Group

The World of Alginates

Introduction

JRS PHARMA's Alginate range performs an essential role in a wide variety of healthcare applications. Derived from a rich field of brown algae just off the French Brittany coast, the portfolio consists of:

VIVAPHARM® Alginates

- Sodium Alginate
- Calcium Alginate
- Alginic Acid

Why VIVAPHARM® Alginates ?

Due to its viscosifying, gelling and film forming properties under a variety of different conditions, **VIVAPHARM® Alginates** are one of the most versatile hydrocolloids. The ability to dissolve and build up gels without heat and the precise control over the gel setting time by adjusting the calcium release with sequestrants are key benefits. This versatility is reflected in different applications using alginates, from medical and dental care to nutraceuticals and pharmaceuticals, such as a thickener in syrups, controlled release in tablets, tablet disintegrant, enteric coating for capsules, wound dressing with hemostatic properties, or a physical raft against reflux.

Quality Made in Europe

JRS, an owner-led, independent family company group, stands for high quality, security, reliability and long-term strategy.



Pic 1 Alginate Plant, JRS Marine Products Landerneau, France

With more than 50 years of experience, the whole Alginate production takes place at our plant in Landerneau, France, where the main raw materials, the brown algae are harvested. The seaweed grows on the continental shelf and is mechanically harvested by local, specially licensed fishing boats, to avoid overharvesting.

- Best in class safety practices
- Stringent quality standards
- Employment rights according to European standards
- Environmental protection
- High batch to batch consistency

Sustainable Seaweed Harvest

- Supervision of sustainable harvest by public authorities
- Restricted areas and harvesting campaigns
- A short distance from the sea to the plant in Landerneau for optimal product quality
- Long-term contracts with local fishermen
- Minimal waste production due to application of side products in surrounding agricultures
- Integrated, on-site water purification process

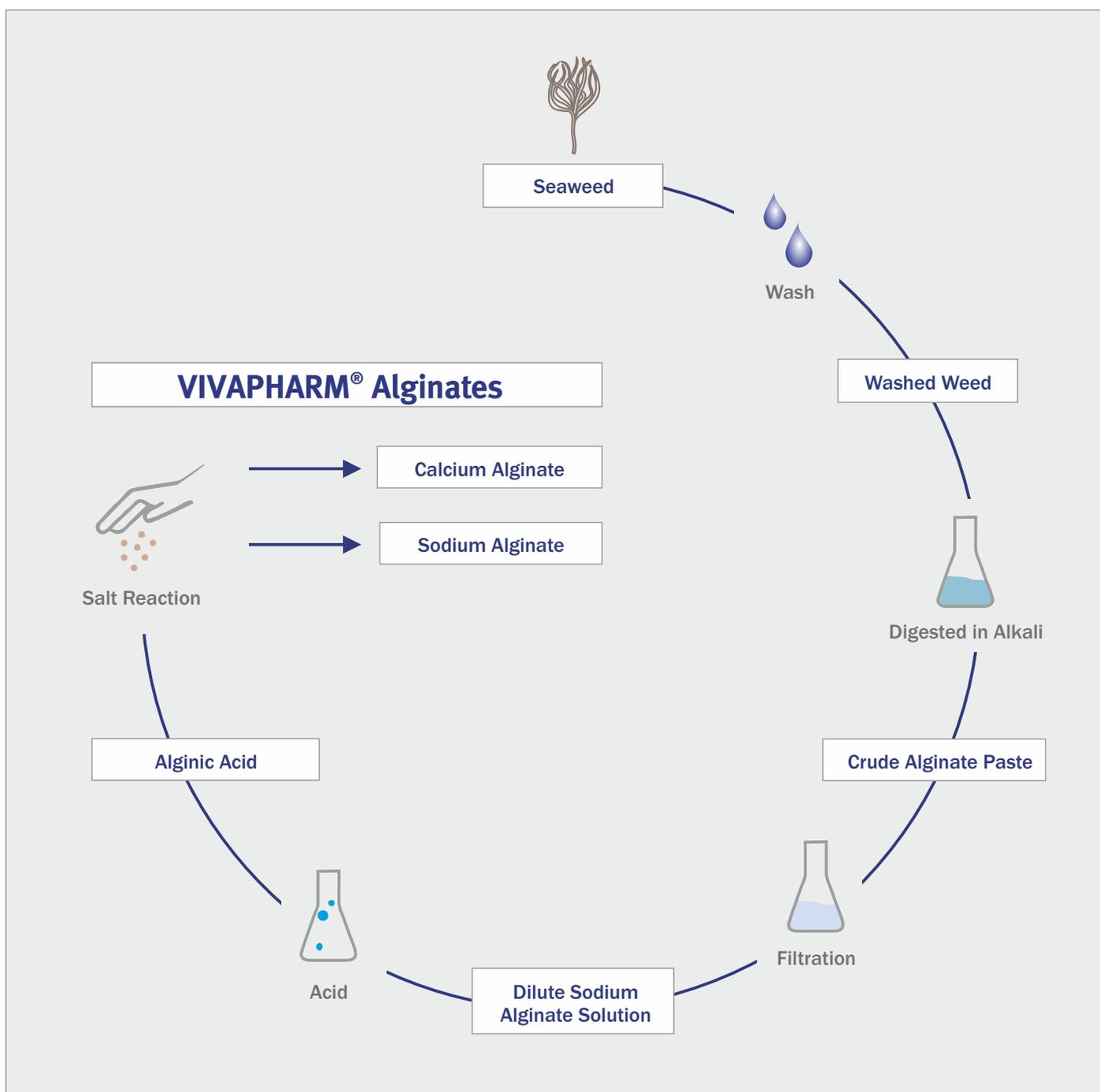
Natural Based Hydrocolloid

- No alcohol precipitation
- No limit for acceptable daily intake (ADI) by EFSA and FDA
- No allergens
- Clean label friendly
- Non-animal origin / vegetarian / vegan
- Recognized as GRAS by FDA

JRS VIVAPHARM[®] Alginates – Manufacturing Process

The extraction technology of Alginic Acid from the seaweed is based on more than half a century of experience at JRS Marine Products Landerneau.

After extraction, the Alginic Acid is converted into a series of Alginic Acid salts, such as Sodium Alginate. Each type yields its own special properties in a wide range of healthcare applications.



Product Overview and Functionalities

With **VIVAPHARM® Alginates**, JRS PHARMA offers an extensive portfolio for the pharmaceutical, nutraceutical and the medical device market.

Depending on the product requirements, **VIVAPHARM® Alginates** provide:

- Disintegration and pH-controlled release properties in tablets
- Film forming properties for oxygen protective coatings
- Gel barrier (raft) formation in anti-reflux applications
- Instant gelling for strong, flexible, clear, glossy, and uniform film strips and capsules
- Adsorption and hemostatic behavior in wound care products
- Tailored gelling in dental impressions

		VIVAPHARM® Alginates		
		Sodium Alginate	Calcium Alginate	Alginic Acid
Properties	Available viscosity ranges (1 %, 20 °C)	Ultra low to high viscous in the range of ~10 – 950 mPa*s	Insoluble	Insoluble
	Available Granulometry	Various granulometry in the range of 100 – 630 µm	98 % < 160 µm	98 % < 160 µm
	Solubility in cold water	Yes	No	No
	Solubility in hot water	Yes	No	No
	Gel forming with Calcium	Yes	No	No
Applications	Swells in colder water	No	Yes	Yes
	Disintegrant	No	Yes	Yes
	Wound Treatment	Yes	Yes	No
	Controlled Release	Yes	No	No
	Anti-Reflux	Yes	No	No
	Gelling Agent	Yes	No	No
	Thickener	Yes	No	No
	Emulsifier	Yes	No	No
	Suspending Agent	Yes	No	No
	Film formation	Yes	No	No
	Dental Impressions	Yes	No	No
	Vegan Alternative to Gelatin (e.g. capsules...)	Yes	No	No

Tailor-made **VIVAPHARM® Alginates** have a wide variety of properties and viscosities, depending on the requirements and defined objectives. This opens up new horizons for innovative product uses, new developments or problem solving. Our comprehensive application and development service supports fast adaptation and product introduction.



VIVAPHARM® Alginates – Additional Information

Benefits of Using VIVAPHARM® Alginates

- Manufactured without alcoholic precipitation
- Sustainable, plant-based source
- Suitable for different lifestyles
- Clean label friendly
- Tailored products offer a broad range of solutions

Special Benefits of VIVAPHARM® Alginates Sodium Alginates

- Gives viscosity, texture and shape to products
- Improves heat stability:
 - avoids melting or sticking of the final product in hot climate
 - maintains capsule integrity
- Cold solubility reduces manufacturing effort, as heating is not required
- Gel setting time can be controlled precisely by targeted Calcium release
- Controls the release of active ingredients

Packaging, Samples and Storage

Storage

Store in original, sealed containers protected from excessive heat and moisture.

Packaging and Pallets

VIVAPHARM® Alginates Sodium Alginate

Packaging Size	Euro Pallet* (800 x 1200 mm)	Container Pallet* (1000 x 1200 mm)
25 kg paper bag with PE inliner	20 bags x 25 kg: 500 kg	30 bags x 25 kg: 750 kg 40 bags x 25 kg: 1000 kg

VIVAPHARM® Alginates Alginic Acid and Calcium Alginate

Packaging Size	Euro Pallet* (800 x 1200 mm)	Container Pallet* (1000 x 1200 mm)
15 kg paper bag with PE inliner	20 bags x 15 kg: 300 kg	40 bags x 15 kg: 600 kg

*non-stackable

Sample Sizes

Standard samples available in 200 g and 250 g.

Regulatory Information

- Ph. Eur., USP/NF
- ISO 9001, ISO 14001
- Halal, Kosher
- GMO free, BSE / TSE free
- Allergen free
- FDA approved as GRAS (21 CFR 184.1011/1187/1724)
- Free of residual solvents according to requirements of USP <467>
- No REACH registration necessary
- cGMP production standards for excipients confirmed by ANSM
- US DMF IV for excipients for Sodium Alginate registered (No. 034780)
- CEP for Sodium Alginate registered

Disclaimer:

The information provided in this brochure is based on thorough research and is believed to be completely reliable. Application suggestions are given to assist our customers, but are for guidance only. Circumstances in which our material is used vary and are beyond our control. Therefore, we cannot assume any responsibility for risks or liabilities, which may result from the use of this technical advice.

The Global Excipient Maker

Global Network

GMP Manufacturing and Service Sites

- Excipients
- Coatings
- Biopharma Services
- JRS Sales Companies
(Additionally, dedicated representatives in almost every country)
- Technical Competence Centers
- Application Labs



HIGH FUNCTIONALITY EXCIPIENTS

- PROSOLV[®] SMCC**
Silicified Microcrystalline Cellulose
- PROSOLV[®] EASYtab SP**
Microcrystalline Cellulose, Colloidal Silicon Dioxide, Sodium Starch Glycolate, Sodium Stearyl Fumarate
- PROSOLV[®] EASYtab NUTRA**
All-in-one Composite for Nutraceutical Applications
- PROSOLV[®] ODT G2**
Microcrystalline Cellulose, Colloidal Silicon Dioxide, Mannitol, Fructose, Crospovidone

DISINTEGRANTS

- VIVASTAR[®], EXPLOTAB[®]**
Sodium Starch Glycolate, Sodium Carboxymethyl Starch
- VIVASOL[®]**
Croscarmellose Sodium
- EMCOSOY[®]**
Soy Polysaccharides
- VIVAPHARM[®] Crospovidone**
Polyvinylpyrrolidone, crosslinked

COATINGS

- VIVACOAT[®]**
Ready-to-Use Coating System
- VIVACOAT[®] protect**
Ready-to-Use High Functional Coating System
- VIVAPHARM[®] HPMC**
Hypromellose
- VIVAPHARM[®] PVA**
Polyvinyl Alcohol

BINDERS

- VIVAPUR[®], EMCOCEL[®]**
Microcrystalline Cellulose
- EMDEX[®]**
Dextrates
- VIVAPHARM[®] Povidones**
Povidone and Copovidone

LUBRICANTS

- PRUV[®]**
Sodium Stearyl Fumarate
- LUBRITAB[®]**
Hydrogenated Vegetable Oil, Hydrogenated Oil
- LUBRI-PREZ[™]**
Magnesium Stearate

CARRIERS

- VIVAPUR[®] MCC SPHERES**
Microcrystalline Cellulose Pellets
- VIVAPHARM[®] Sugar Spheres**
Sugar Pellets, Non-GMO

FUNCTIONAL FILLERS

- ARBOCEL[®]**
Powdered Cellulose
- EMCOMPRESS[®]**
Calcium Phosphates
- COMPACTROL[®]**
Calcium Sulfate Dihydrate

THICKENERS • STABILIZERS • GELLING AGENTS

- VIVAPUR[®] MCG**
Microcrystalline Cellulose and Carboxymethylcellulose Sodium
- VIVAPHARM[®] Alginates**
Calcium Alginate
- VIVAPHARM[®] Alginates**
Sodium Alginate
- VIVAPHARM[®] Alginates**
Alginate Acid
- VIVAPHARM[®] Pectins**

BIOPHARMA SERVICES

- CELONIC**
BEYOND BIOMANUFACTURING
 - ProJect**
Pharmaceuticals
- Members of the JRS PHARMA Family