

MATERIAL SAFETY DATA SHEET

K&A Frontiere

1. Company & Product Identification

Company Identifier:

Manufacturer: BioAtlantis Ltd.

Address: Kerry Technology Park, Tralee, Co. Kerry, Ireland.

Contact Details: Tel: +353 (0) 667 118 477, Fax: +353 (0) 667 119 802, E-mail: info@bioatlantis.com

Emergency Phone No.: Tel: +353 (0) 667 118 477

Emergency Contact Name: Mark Davis

Emergency Contact Times: Monday - Friday, 9am – 5pm (GMT)

Product Identifier:

Product Name: Frontierre

Product Code: BS03

Description: *Laminaria* extract.

EC number: 289-980-0

CAS number: 90046-12-1

Intended Use: Plant growth biostimulant/organic fertilizer/foliar spray for use in agriculture and horticulture.

2. Hazard Identification

Classification: Non-hazardous

Signal word: No signal word

Precautionary statements: If skin irritation occurs: Get medical advice/attention

Avoid breathing spray

Use personal protective equipment as required

Keep out of the reach of children

Other hazards: This product will stain skin upon prolonged exposure

3. Composition/Information on Ingredients

Substance Name: *Laminaria*, extract

Substance Description: 50% w/v soluble seaweed extract from *Laminaria* seaweed

Note: Confidential business information has been omitted

EC number: 289-980-0

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4. First-Aid Measures

General:	Non-hazardous material. If irritation occurs, seek medical advice.
Inhalation:	Remove the exposed individual from the area to fresh air is recommended.
Skin:	Remove contaminated clothing. Wash thoroughly with soap and water. Seek medical attention if irritation occurs.
Eyes:	In case of contact, irrigate with clean water for >15 minutes. Seek medical attention if irritation or redness persists.
Ingestion:	If swallowed drink plenty of water or milk. Seek medical advice. Do not induce vomiting.
First Aid Responders:	Wear rubber or nitrile gloves to prevent staining of skin.

5. Fire-Fighting Measures

General:	Non-flammable and non-explosive.
Protective action:	In the event of a fire, keep containers cool with water spray.
Unusual fire/explosion hazards:	Unknown.
Special protective equipment:	Fire fighters should wear personal protective equipment to prevent contamination of skin, eyes and personal clothing.
Caution:	Slippery in liquid form or when mixed with water.

6. Accidental Release Measures

Safety Precautions:	Use personal protective equipment to prevent contamination of skin, eyes and clothing.
Small spills:	May be washed to drain.
Large spills:	Contain spill with sand, sawdust, absorbent clay or similar material. Sweep up and transfer material into labelled containers for transfer to a safe place for disposal. Flush the area with plenty of water when all the spillage has been removed. This product will stain concrete.
Drainage:	Prevent the spillage from entering watercourses, sewers or drains if possible. Inform the authorities if gross contamination of water is threatened or occurs.

7. Handling and Storage

Precautions for safe handling:

- Eating, drinking and smoking in work areas is prohibited.
- Use personal protective equipment to prevent contamination of skin, eyes and personal clothing.
- Avoid breathing mist/spray.
- If irritation occurs: Get medical advice/attention.
- Keep out of reach of children.
- Avoid excessive handling which may cause staining of skin.
- Wash your hands after use.

Precautions for safe storage:

- Keep in original container, tightly closed.
- Store in a suitable cool, dry location, out of direct sunlight, away from direct sources of heat.
- Protect from frost.
- Keep away from food, drink and animal feeding stuffs.

8. Exposure Controls/Personal Protection

Engineering Controls:	Advisable to spray product in a well-ventilated area. Do not intentionally breathe dust/fume/gas/mist/vapours/spray.
Respiratory Protection:	No respirator is required.
Hand Protection:	Wear rubber or nitrile gloves to prevent staining of skin.
Skin Protection:	Wear a water impermeable bodysuit to prevent staining of skin.
Eye Protection:	Wear chemical goggles. Eyewash facilities should be available.

9. Physical and Chemical Properties

Appearance:	Black/brown liquid
Odour:	Marine
Odour Threshold:	Not determined
pH:	3.5 – 5.0
Melting Point/Freezing Point:	Not determined
Initial Boiling Point/Boiling Range:	Data lacking
Flash Point:	N/A
Evaporation Rate:	Not determined
Flammability:	Non flammable
Upper/lower flammability or exposure limits:	Not determined
Vapour Pressure:	Not determined
Vapour Density:	Not determined
Relative Density:	1.22 – 1.25 Kg/L
Solubility:	≥97% water soluble
Partition Coefficient: n-octanol/water:	Not determined
Auto-ignition Temperature:	550 °C
Decomposition Temperature:	Not determined
Viscosity:	<300 cP

10. Stability and Reactivity

General: Stable under recommend storage conditions. It can be stored for 2 years in unopened containers.
Incompatible Materials: Do not mix with highly acidic chemicals. Oxidants and acids may cause degradation.
Conditions to Avoid: Avoid direct sunlight, protect against excessive heat and freezing.
Hazardous Decomposition Products: N/A

11. Toxicological Information

Acute oral toxicity:	Ingestion of large amounts may induce nausea.
Skin corrosion/irritation:	No sensitisation effects have been observed.
Serious eye damage/irritation:	Data lacking
Respiratory of skin sensitisation:	Data lacking
Germ cell mutagenicity:	Data lacking
Carcinogenicity:	Data lacking
Reproductive toxicity:	Data lacking
STOT – single exposure:	Data lacking
STOT – repeated exposure:	Data lacking
Aspiration hazard:	No sensitisation effects have been observed.

Date of Issue: 16/01/2012
Revision No.: 5
Page: Page 3 of 6

12. Ecological Information

Ecotoxicity:	High concentrations may cause scorching in plants. Not toxic to vertebrates, invertebrates or marine algae
Persistence and Degradability:	Components are readily biodegradable
Bioaccumulative Potential:	Biodegradable. Product presents minimal environmental impact.
Spillages:	Prevent the spillage from entering watercourses, sewers or drains if possible. Inform the authorities if gross contamination of water is threatened or occurs.

13. Disposal Considerations

Product Disposal:	Consult the local authorities for advice on disposal of unwanted or waste product.
Packaging Disposal:	Dispose of containers as local regulations allow.
Personal Protection:	Person carrying out disposal should wear PVC gloves.
Caution:	Do not contaminate surface waters or ditches with product or used containers.

14. Transport Information

General:	Non-hazardous material. No special precautions required.
Road Transport:	Not hazardous.
UN Number:	No UN Number.
Proper Shipping Name:	BioAtlantis Liquid Seaweed Extract Concentrate.
IMDG Class:	Not applicable.
CPL Packing Group:	Not applicable.

15. Regulatory Information

Composition:	<i>Laminaria</i> extract
H-Statements:	None
P-Statements:	P102: Keep out of reach of children P261: Avoid breathing spray P281: Use personal protective equipment as required P332/313: If skin irritation occurs: Get medical advice/attention
R-Phrases:	None
S-Phrases:	S2: Keep out of the reach of children S23: Do not breathe spray S36/37/39: Wear suitable protective clothing, gloves and eye/face protection

16. Other information

The above information is intended to give health and safety guidance on the storage and transport of the substance or product to which it relates. It is not intended to apply to the use of the product, for which purpose the product label and any appropriate technical usage literature available should be consulted and any relevant licences, consents or approvals complied with. The requirements or recommendations of any relevant site or working procedure, system or policy in force or arising from any risk assessment involving the substance or product should take precedence over any of the guidance contained in this safety data sheet where there is a difference in the information given. The information provided in this safety data sheet is accurate to the best of the issuer's available knowledge at the date of publication, and will be updated as and when appropriate. No liability will be accepted for any loss or damage resulting from any failure to take account of information or advice contained in this safety data sheet.

Certified by the following:

MDA

date: 20/01/2012

Mark Davis
Quality Coordinator, BioAtlantis Ltd.

End of Material Safety Data Sheet

Date of Issue: 16/01/2012
Revision No.: 5
Page: Page 5 of 5

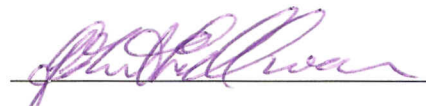


Certification of OGM-free Products

BioAtlantis Ltd confirms that it does not use any genetically modified organisms in the production of the following product:

K&A Frontiere

Signed:



John T. O'Sullivan,

CEO BioAtlantis Ltd.

Date: 20/01/2012



Certification of Amino Alcohol-free Products

BioAtlantis Ltd confirms that the following product is free of amino alcohols including but not limited to morpholine, monoethanolamine, diethanolamine, triethanolamine, propanolamines and butanolamines:

K&A Frontiere

Signed:

John T. O'Sullivan,
CEO BioAtlantis Ltd.

Date: 20/01/2012

CERTIFICATE OF ANALYSIS

PRODUCT: K&A Frontiere
DATE: 13/05/2011
BATCH NO: A038E133
DESCRIPTION: A natural plant growth stimulant obtained by acid extraction of *Laminaria digitata* harvested off the West Coast of Ireland.

PHYSICAL ANALYSIS:

Appearance: Brown liquid
Odour: Marine/seaweed-like.
Solubility in Water: >99.9%
pH: 4.5
Concentration: 561.9 g/litre; 56.19% (w/v)
Specific Gravity: 1.245

CHEMICAL ANALYSIS:

Dry Matter 45.14% w/w
Inorganic Matter 21.60% w/w
Organic Matter 23.54% w/w

Signed:

MDA

Date: 20/01/2012

Mark Davis
Quality Coordinator, BioAtlantis Ltd.



TO WHOM IT CONCERNS,

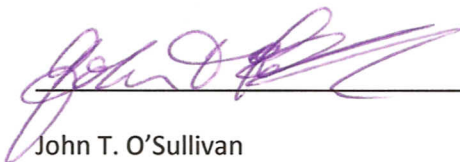
PRODUCT NAME : K&A Frontiere

MANUFACTURER : BIOATLANTIS LTD

COUNTRY OF ORIGIN : REPUBLIC OF IRELAND

We certify that the product above is manufactured in the Republic of Ireland by BioAtlantis Ltd.

Yours Faithfully,



John T. O'Sullivan

Date: 20/01/2012

CEO BIOATLANTIS