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ANALYSIS REPORT REFERENCE: 21-09-21966

**CHEMICAL/BIOCHEMICAL
ANALYTICAL REPORT**

Nature of Product: Liquid Organic NPK + Bio-Surfactant Fertilizer Sample.

Date of Report: 29th. September 2021.

Sample Reference: As Dated.

**E.Marker A/S
Okslundvej 8
BOV DK-6330
Padborg
Denmark.**

For the Attention of: Mr. Carsten Marker.

Contact No. +46 74670808

Email: Carsten@marker.DK.

Date of Sample: 7th. September 2021.

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Chemical Compositional

Parameter	Method of Analysis	Method Reference	Units	Reported Levels
Potassium as K.	ICP-OES	APHA 3500	% weight	2.390%
Phosphorus as P.	ICP-OES	APHA 3500	% weight	2.085%
Nitrogen as N.	Kjeldahl Distillation	APHA 3500	% weight	6.280%
Organic (Ureic)				5.780%
Inorganic (Anionic)				0.500%
Iron as Fe.	ICP-OES	APHA 3500	% weight	0.046%
Elemental Sulphur S.	Elemental Analyser	In-House Method	% weight	0.900%
pH Value	Electrometric	In-House Method	pH Units	4.24
Organic Matter	Elemental Analyser	In-House Method	% weight	1.688%
Specific Gravity	Densitometry	In-House Method	g/L ⁻¹ .	1.038

Fatty Acid Profile (Based On 4.800% Total Fats Estimation)

Parameter	Method of Analysis	Method Reference	Units	Reported Levels
Palmitic C16:0	HPLC-PDA	ISO 5508	% mass.	6.90%
Stearic C18:0	HPLC-PDA	ISO 5508	% mass.	9.50%
Arachidic C20:0	HPLC-PDA	ISO 5508	% mass.	1.65%
Eicosenoic C20:1	HPLC-PDA	ISO 5508	% mass.	2.25%
Behenic C22:0	HPLC-PDA	ISO 5508	% mass.	11.25%
Linoleic C18:2	HPLC-PDA	ISO 5508	% mass.	39.67%
Linolenic C18:3	HPLC-PDA	ISO 5508	% mass.	19.66%
Oleic C18:1	HPLC-PDA	ISO 5508	% mass.	9.120%

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Trace Minerals Analysis

Parameter	Method of Analysis	Method Reference	Units	Reported Levels
Magnesium as Mg.	ICP-OES	APHA 3500	% weight	0.269%
Calcium as Ca.	ICP-OES	APHA 3500	% weight	2.285%
Sodium as Na.	ICP-OES	APHA 3500	% weight	0.323%
Manganese as Mn.	ICP-OES	APHA 3500	% weight	0.088%
Zinc as Zn.	ICP-OES	APHA 3500	% weight	0.015%
Copper as Cu	ICP-OES	APHA 3500	% weight	0.009%
Iodine as I ₂	IC/ICP-OES	APHA 3500	% weight	-
Selenium as Se	ICP-OES	APHA 3500	% weight	0.005%
Chromium as Cr	ICP-OES	APHA 3500	% weight	< 0.0002%
Molybdenum as Mo.	ICP-OES	APHA 3500	% weight	0.0012%

Sugars Analysis (Based On 3.180% Sugars Estimation)

Parameter	Method of Analysis	Method Reference	Units	Reported Levels
Sucrose	HPLC-PDA	ISO 11292	% mass	1.300%
α -Glucose				0.580%
β -Glucose				0.400%
Fructose				0.186%
Glucopyranose				0.058%
Galactofuranose				0.350%
Raffinose				0.190%
Inositol				0.115%

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Amino Acids Profile (Based On 7.550% Protein Estimation)

Parameter	Method of Analysis	Method Reference	Units	Reported Levels
Glutamic acid	LC-MS	JHG-097	mg/100mls.	1,198
Aspartic acid	LC-MS	JHG-097	mg/100mls.	1,108
Arginine	LC-MS	JHG-097	mg/100mls.	625
Glycine	LC-MS	JHG-097	mg/100mls.	1,116
Alanine	LC-MS	JHG-097	mg/100mls.	410
Serine	LC-MS	JHG-097	mg/100mls.	269
Proline	LC-MS	JHG-097	mg/100mls.	377
Leucine	LC-MS	JHG-097	mg/100mls.	281
Tyrosine	LC-MS	JHG-097	mg/100mls.	548
Valine	LC-MS	JHG-097	mg/100mls.	269
Methionine	LC-MS	JHG-097	mg/100mls.	322
Histidine	LC-MS	JHG-097	mg/100mls.	398
Iso-Leucine	LC-MS	JHG-097	mg/100mls.	475
Cystine	LC-MS	JHG-097	mg/100mls.	371
Phenylalanine	LC-MS	JHG-097	mg/100mls.	431
Tryptophan	LC-MS	JHG-097	mg/100mls.	109

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Heavy Metals Analysis

Heavy Metal	Method of Analysis	Units	Reported Results
Arsenic (Inorganic)	ICP-OES	mg/L. (ppm)	< 0.0005
Arsenosugars (Organic)	ICP/IC-OES	mg/L. (ppm)	-
Antimony as Sb.	ICP-OES	mg/L. (ppm)	< 0.002
Cadmium as Cd.	ICP/IC-OES	mg/L. (ppm)	< 0.0005
Mercury as Hg.	Cold Vapour A.A.S.	mg/L. (ppm)	< 0.0005
Lead as Pb.	ICP-OES	mg/L. (ppm)	< 0.002
Chromium as Cr ⁶⁺ .	ICP/IC-OES	mg/L. (ppm)	< 0.002
Nickel as Ni.	ICP-OES	mg/L. (ppm)	< 0.002
Silver as Ag.	ICP-OES	mg/L. (ppm)	< 0.002
Vanadium as V.	ICP/IC-OES	mg/L. (ppm)	< 0.002
Tin as Sn.	ICP-OES	mg/L. (ppm)	< 0.002
Aluminium as Al.	ICP/IC-OES	mg/L. (ppm)	< 0.002

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Herbicide Residues Analysis

Parameter	Method of Analysis	Method Reference	Units	Reported Levels
Sulfonyl Ureas/Ureas	UHPLC-MS	APHA 6630	µg/ml.	< 0.004
Imidazolinones/Diphenylethers	UHPLC-MS	APHA 6630	µg/ml.	< 0.005
Phenoxy/Chlorophenoxy	UHPLC-MS	APHA 6630	µg/ml.	< 0.006
Dinitroalinine/Acetamides	UHPLC-MS	APHA 6630	µg/ml.	< 0.002
Bipyridillums/Triketones	UHPLC-MS	APHA 6630	µg/ml.	< 0.004
Thiocarbamates	UHPLC-MS	APHA 6630	µg/ml.	< 0.035
Glyphosate/Glufosinate	UHPLC-MS	APHA 6630	µg/ml.	< 0.002
Atrazine desethyl deisopropyl	UHPLC-MS	APHA 6630	µg/ml.	< 0.001
Atrazine deisopropyl	UHPLC-MS	APHA 6630	µg/ml.	< 0.003
Atrazine desethyl	UHPLC-MS	APHA 6630	µg/ml.	< 0.002
Simazine	UHPLC-MS	APHA 6630	µg/ml.	< 0.005
Terbutylazine desethyl	UHPLC-MS	APHA 6630	µg/ml.	< 0.001
Atrazine	UHPLC-MS	APHA 6630	µg/ml.	< 0.001
Terbutryn	UHPLC-MS	APHA 6630	µg/ml.	< 0.001
Terbutylazine	UHPLC-MS	APHA 6630	µg/ml.	< 0.001
Alachlor	UHPLC-MS	APHA 6630	µg/ml.	< 0.004
Metolachlor	UHPLC-MS	APHA 6630	µg/ml.	< 0.005
Aminopyralid	LS-MS-MS	APHA 6630	µg/ml.	< 0.001
Clopyralid	LS-MS-MS	APHA 6630	µg/ml.	< 0.001
Triclopyr	LS-MS-MS	APHA 6630	µg/ml.	< 0.002

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Pesticide Residues Analysis

Parameter	Method of Analysis	Method Reference	Units	Reported Levels
Organochlorine Residues	UHPLC-MS	APHA 6630	µg/ml.	< 0.002
Organophosphorus Residues	UHPLC-MS	APHA 6630	µg/ml.	< 0.002
Organonitrogen Residues	UHPLC-MS	APHA 6630	µg/ml.	< 0.050
Carbamate Pesticides	UHPLC-MS	APHA 6630	µg/ml.	< 0.030
Pyrethroid Residues	UHPLC-MS	APHA 6630	µg/ml.	< 0.001
Organotin Residues	UHPLC-MS	APHA 6630	µg/ml.	< 0.002

All test methods were performed in accordance with the requirements of ISO: IEC 17025.

The test results relate only to the product listed in this report.

Analytical Assessor**John Gough BSc. MSc.****Assessor Credentials****BSc (Hons) in Analytical Chemistry with Quality Management.****MSc in Environmental Chemistry.****J.W. GOUGH**

_____ **Technical Signatory.**

Dated: 29th. September 2021

Organic NPK + Bio-Surfactant Fertilizer