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Energy Forest (Salix) Reference Material

Art. ID	NJV-94-3
Unit	50g bottle
Deliverydetails	No Dangerous Good /not restricted

Description
This Reference Material is intended for use in the control of instruments and methods in energy parameter and elemental analysis of energy forest / The reference material consists of Salix cultivated near Örebro, Närke, Sweden

Text/Information	Analyte/Parameter	CAS number	Concentration/Value	Unit	Method	Source
Certified value	Ash		4,07 ± 0,079	%	SS 18 71 71 / ISO 1171 (500 oC) / Leco-MAC 400 (550 oC)	
Certified value	Calorific Value		22,59 ± 0,055	MJ/kg	SS 18 71 82 / ISO 1928 / DIN 51900 / ASTM D 3286	
Certified value	Nitrogen (N)	[7727-37-9]	2,09 ± 0,066	%	CHN-analyzer / Kjeldahl	
Certified value	Sulfur (S)	[7704-34-9]	0,29 ± 0,030	%	SS 18 71 76 / SS 18 71 77 / ASTM D 4239 / Nefelometry	
Certified value	Chlorine (Cl)	[7782-50-5]	0,028 ± 0,0054	%	SS 18 71 54 / ASTM D 2361 / ASTM D 4208 with Ion Chromatography	
Certified value	Phosphorus (P)	[7723-14-0]	0,045 ± 0,0079	%	Colorimetr	

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					y / ICP-AES / XRF
Certified value	Aluminium (Al)	[7429-90-5]	0,09 ± 0,0079	%	FAAS / ICP-AES / XRF
Certified value	Calcium (Ca)	[7440-70-2]	1,02 ± 0,051	%	FAAS / ICP-AES / XRF
Certified value	Iron (Fe)	[7439-89-6]	0,39 ± 0,037	%	FAAS / ICP-AES / XRF
Certified value	Magnesium (Mg)	[7439-95-4]	0,077 ± 0,0089	%	FAAS / ICP-AES / XRF
Certified value	Manganese (Mn)	[7439-96-5]	0,0036 ± 0,00038	%	FAAS / ICP-AES / XRF
Certified value	Cadmium (Cd)	[7440-43-9]	0,062 ± 0,0057	mg/kg	GFAAS / ICP-MS
Certified value	Copper (Cu)	[7440-50-8]	2 ± 0,47	mg/kg	FAAS / GFAAS / ICP-MS
Certified value	Lead (Pb)	[7439-92-1]	2,4 ± 0,29	mg/kg	GFAAS / ICP-MS
Certified value	Zinc (Zn)	[7440-66-6]	9 ± 1,3	mg/kg	FAAS / ICP-AES
Information value	Volatile matter		69,8 ± 0,72	%	SS-ISO 562 / ISO 562 / DIN 51720
Information value	Carbon (C)	[7440-44-0]	55,6 ± 0,54	%	CHN-analyzer
Information value	Hydrogen (H)	[1333-74-0]	5,8 ± 0,40	%	CHN-analyzer
Information value	Potassium (K)	[7440-09-7]	0,012 ± 0,0045	%	FAAS / FAES / ICP-AES / XRF
Information value	Silicon (Si)	[7440-21-3]	0,33 ± 0,064	%	FAAS / ICP-AES / XRF
Information value	Sodium (Na)	[7440-23-5]	0,008 ± 0,0056	%	FAAS / FAES / ICP-AES / XRF
Information value	Arsenic (As)	[7440-38-2]	2,4 ± 1,9	mg/kg	AAS-hydrid

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					e generation / GFAAS / ICP-MS
Information value	Chromium (Cr)	[7440-47-3]	1,3 ± 0,25	mg/kg	FAAS / GFAAS / ICP-MS
Information value	Titanium (Ti)	[7440-32-6]	40 ± 10	mg/kg	GFAAS / ICP-AES / XRF