



Healing Body, Mind, and Spirit
with Pure Essential Oils Since 1995

www.naturesgift.com

Certificate of Analysis: Spikenard Essential Oil, *Nardostachys jatamansi*, Nepal.

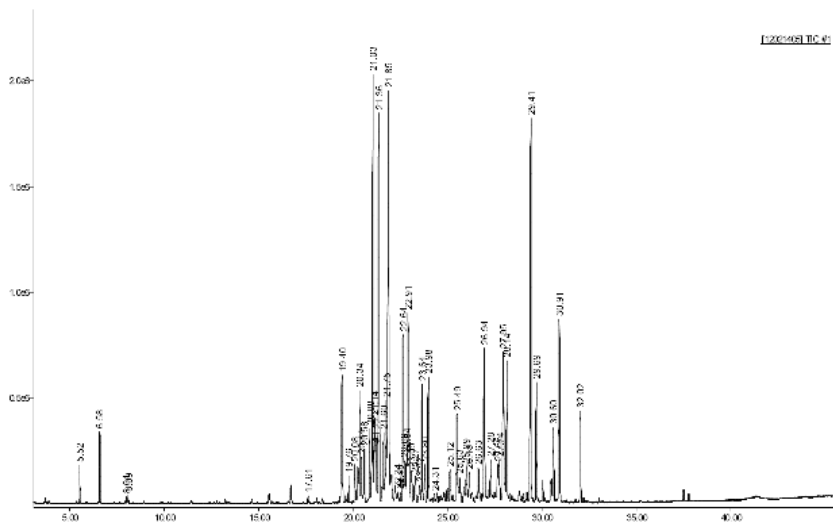
Batch No: NE-48498
Analysis Date: March 2012

Botanical Species: *Nardostachys grandiflora* DC
Reference Name: Essential oil of Nepalese Spikenard
Procedure: Steam distillation of the dried rhizomes

S. N.	Physico-Chemical Properties	At	Value
1.	Specific Gravity	20°C	0.930 to 0.966
2.	Refractive Index	20°C	1.417 to 1.5458
3.	Optical Rotation	20°C	-16° to +60°
4.	Flash Point		74°C
5.	Vapour Pressure		N/A

Analysis Conditions:

CPG 5890 / MS 5970 – Column:: HP INNOWAX polar 60 m Å~ 0, 25 mm Å~ 0, 5 µm
CPG 5890 FID - Column:: HP INNOWAX polar 60 m Å~ 0, 25 mm Å~ 0, 5 µm
Temperature program: 6 mn à 50°C –2 °C/mn@250 °C-20mn à 250 °C
Carrier gas He: 23 psis/MS – 30 psis/FID
Sample injection / split: 1 µl of 5% solution in hexane.
Mass range: 30 to 350. Oil components are identified by a combination of retention times (our own database) and mass spectra library NKS 75 000 records Percentages are calculated from GC/FID peaks areas without using corrections factors.



316 Old Hickory Blvd East, Madison TN 37115
tel (615) 612-4270 fax (615) 860-9171
orderdesk@naturesgift.com



*Healing Body, Mind, and Spirit
with Pure Essential Oils Since 1995*

www.naturesgift.com

Identification Results: Nardostachys grandiflora DC

Pick	Time	RI	Hit %	Component	%
1	5.52	934	95	Pinene <a->	0.57
2	6.59	977	99	Pinene <b->	1.19
3	8.01	1029	52	Limonene	0.11
4	8.09	1032	27	Cineole 1, 8	0.12
5	17.61	1327	88	Myrtenylacetate (=2-Pinen-10-ol, acetate)	0.22
6	19.40	1383	89	Patchoulene <b->	1.96
7	19.76	1394	67	Elemene <cis-b->	0.51
8	20.08	1405	87	Cyperene	0.69
9	20.34	1413	100	Gurjunene <a->	0.60
10	20.44	1416	0	Pacifigorgia-1 (6), 10-diene	2.95
11	20.58	1421	98	ARI stolene	1.04
12	20.88	1431	92	ARI stola-1 (10), 8-diene	1.54
13	21.03	1435	98	Gurjunene <b-> (=Calarene)	8.06
14	21.14	1439	66	Nardosina-7, 9, 11-trI ene	2.05
15	21.22	1441	74	Guaiene <a->	0.77
16	21.37	1446	96	Guaia-6, 9-diene	9.04
17	21.60	1454	0	unknown (131, 202, RI 1454)	1.41
18	21.75	1459	83	Patchoulene <a->	0.66
19	21.85	1462	28	Patchoulene <d->	8.06
20	22.34	1478	89	Chamigrene <b->	0.41
21	22.48	1483	64	Amorphene <a->	0.37
22	22.64	1487	58	Germacrene D	3.73
23	22.69	1489	81	Ionone <(E)-b->	0.50
24	22.84	1494	49	Selinene <d->	0.51
25	22.91	1496	38	Patchoulene <g->	4.65
26	23.09	1502	0	unknown (81, 204, RI 1502)	0.73
27	23.27	1509	85	Bulnesene <a-> (=Guaiene <d->)	0.93
28	23.52	1517	50	Cadinene <g->	0.36
29	23.64	1521	94	Selinene <7-epi-a->	2.11
30	23.80	1526	71	Cadinene <d->	0.71
31	23.98	1532	0	unknown (131, 202, RI 1532)	2.06
32	24.31	1544	100	Furopelargone A	0.26
33	25.12	1571	0	unknown (189, 218, RI 1571)	0.71
34	25.49	1584	0	unknown (121, 222, RI 1584)	1.93
35	25.63	1589	0	unknown (43, 220, RI 1589)	1.00
36	25.99	1601	0	unknown (179, 222, RI 1601)	0.83
37	26.15	1607	0	unknown (149, 222, RI 1607)	0.73
38	26.63	1624	0	unknown (164, 222, RI 1624)	0.69
39	26.94	1635	0	unknown (121, 222, RI 1635)	2.83
40	27.28	1647	24	Muurolol <epi-a-> (=T-Muurolol)	0.91
41	27.66	1661	39	Cadinol <a->	0.98
42	27.74	1664	66	Patchoulol	0.76
43	27.95	1671	85	Eudesma-4 (15), 7-dien-1b-ol	3.34

316 Old Hickory Blvd East, Madison TN 37115
tel (615) 612-4270 fax (615) 860-9171
orderdesk@naturesgift.com



*Healing Body, Mind, and Spirit
with Pure Essential Oils Since 1995*

www.naturesgift.com

44	28.14	1678	82	Valeranone (=Jatamansone)	2.63
45	29.41	1725	95	Valerenal	7.42
46	29.69	1735	0	unknown (173, 216, RI 1735)	2.24
47	30.60	1769	0	unknown (176, 232, RI 1769)	2.12
48	30.91	1781	0	unknown (109, 248, RI 1781)	3.56
49	32.02	1824	0	unknown (248, 248, RI 1824)	1.44
TOTAL					92.95

316 Old Hickory Blvd East, Madison TN 37115
tel (615) 612-4270 fax (615) 860-9171
orderdesk@naturesgift.com