



NHR ORGANIC OILS  
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*Certificate of Analysis & Gas Chromatography*  
**Organic Cardamom Essential Oil**  
*(Elettaria cardamomum)*

BATCH NUMBER: 040322-1
ORIGIN: INDIA
PRODUCT INCI: Elettaria cardamomum SEED
CAS NUMBER: 8000-66-6 / 85940-32-5
EINECS NUMBER: 288-922-1

ANALYTICAL DETAILS	RANGE	RESULTS
APPEARANCE	LIQUID	-
COLOUR	COLORLESS – PALE YELLOW	-
ODOUR	CHARACTERISTIC, WARM & SPICY	-
SPECIFIC GRAVITY @ 20 C	0.910 – 0.950	0.924
REFRACTIVE INDEX @ 20 C	1.455 – 1.470	1.463
OPTICAL ROTATION ( C)	+20.0 TO +45.0	+26.41

*The attached information is considered to be correct at the time the client received this information.*

*Please be aware that detail can change and we encourage clients to update their records with NHR Organic Oils regularly.*

*The information is not and should not be considered a guarantee or warranty, or a part of our contractual or other legal obligations.*

GC COMPONENTS	%	CAS NO.
Isovaleric aldehyde	0.012	590-86-3
2-methyl- Butanal	0.009	96-17-3
alpha-Thujene	0.204	2867-5-2
.alpha.-Pinene	1.69	80-56-8
Camphene	0.025	79-92-5
6-methyl- 5-Hepten-2-one,	0.025	110-93-0
Sabinene	4.955	3387-41-5
beta.-Pinene	0.386	18172-67-3
Myrcene	2.482	123-35-3
alpha-Terpinene	0.111	99-86-5
para-Cymene	0.105	99-87-6
Eucalyptol	33.112	470-82-6
Limonene	2.428	138-86-3
trans.-beta.-Ocimene	0.056	3779-61-1
.gamma.-Terpinene	0.254	99-85-4
1-Octanol	0.023	111-87-5
Sabinene hydrate	0.411	546-79-2
Terpinolene	0.096	586-62-9
Linalool	3.154	78-70-6
<cis-, para->Menth-2-en-1-ol	0.031	29803-82-5
delta-Terpineol	0.079	7299-42-5
Isogeranial	0.028	55722-59-3
Terpinen-4-ol	0.718	562-74-3
.alpha.-Terpineol	1.364	98-55-5
Decanal	0.04	112-31-2
Octyl acetate	0.057	112-14-1
4-Terpinenyl acetate	0.218	4821-4-9
Neral	0.385	106-26-3
Geraniol	0.723	106-24-1
Linalyl acetate	4.674	115-95-7
Geranial	0.564	141-27-5
alpha-Terpinyl formate	0.024	2153-26-6
.delta.-Terpineol, acetate	0.108	93836-50-1
Methyl geranoate	0.037	1189-9-9
.alpha.-Terpinyl acetate	38.667	80-26-2
Geranyl acetate	0.411	105-87-3
Terpinyl propionate	0.079	80-27-3
Germacrene D	0.047	23986-74-5
beta-Selinene	0.121	17066-67-0
alpha-Selinene	0.053	473-13-2
gamma-Cadinene	.077	38357-83-4
trans-Nerolidol	.755	40716-66-3
Germacrene B	.046	15423-57-1
<(2E,6Z)->Farnesal	.062	3790-67-8
(2E,6E)-Farnesol	.104	4602-84-0
<(E,E)->Farnesal	.077	502-67-0
(2E,6E)-Farnesyl acetate	.027	29548-30-9