

## Certificate of Analysis

Product: ROSE GERANIUM OIL  
Botanical Name: *Pelargonium graveolens*  
Country of Origin: Egypt

### PHYSICAL AND CHEMICAL PROPERTIES

TEST	SPECIFICATION	RESULT
SPECIFIC GRAVITY @ 20° C	0.880 to 0.902	0.898
OPTICAL ROTATION @ 20° C	-15° to -2°	-9°
REFRACTIVE INDEX @ 20° C	1.460 to 1.473	1.468

### GAS CHROMATOGRAPH ANALYSIS (TYPICAL)

Peak Name	Result area (%)
alpha-pinene	0.55
p-cymene	0.09
limonene	0.31
trans-linalool oxide	0.28
cis-linalool oxide	0.19
linalool	4.82
cis-rose oxide	1.21
trans-rose oxide	0.53
menthone	2.21
isomenthone	5.47
alpha-terpineol	0.38
citronellol	33.70
neral	0.35
geraniol	15.21
geranial	0.44
citronellyl formate	6.92
geranyl formate	2.83
citronelly acetate	0.26
eugenol	0.10
alpha-copaene	0.56
geranyl acetate	0.38
beta-bourbonene	1.31

bata-caryophyllene	1.41
guaia-6,9-diene	0.36
germarene D	1.12
delta-cadinene	1.80
citronellyl n-butyrate	0.10
geranyl butyrate	0.93
2-trans-phenyl ethyl tiglate	0.70
10-epi- $\gamma$ -eudesmol	3.93
citronellyl tiglate	0.30
geranyl tiglate	0.93