

Certificate of Analysis

Product: Citronella Oil
Botanical Name: *Cymbopogon winterianus* Jowitt
Country of Origin: Indonesia

PHYSICAL AND CHEMICAL PROPERTIES

TEST	RESULT	SPECIFICATION
Specific Gravity @ 20° C	0,883	0,880 - 0,897
Refractive Index @ 20° C	1,467	1,466 - 1,475
Optical Rotation @ 20° C	-3,18°	-5°- 1°

GAS CHROMATOGRAPH ANALYSIS (TYPICAL)

CONSTITUENT	RESULT (%)	SPECIFICATION (%)
α pinene	0,11	
α phellandrene	0,07	
myrcene	0,11	
limonene	3,71	
β phellandrene	0,06	
cis β ocimene	0,52	
terpinolene	0,07	
citronellal	39,71	26,00 - 45,00
β bourbonene	0,06	
linalol	0,72	
neoisopulegol	0,62	
isopulegol	0,15	
β elemene	1,47	
β caryophyllene	0,46	
citronellyl acetate	2,24	
α humulene	0,17	
neral	0,45	
terpenyl acetate	0,19	
germacrene d	2,46	
geranial	0,66	
geranyl acetate	3,10	$\leq 8,00$
citronellol	10,71	7,00 - 18,00
cadinene	1,54	
γ cadinene	0,38	
nerol	0,09	

geraniol	20,71	16,00 - 30,00
elemol	2,46	<= 8,00
eugenol	0,79	
tau muurolol	0,78	
trans trans farnesol	0,05	
γ terpinene	0,26	