

CLL Test List - Essential Oils

Product	Analyte	Technique	Test Method ¹	Specification
Anise oil				
	p-Anisaldehyde	GLC	GC Application	NA
	Angular Rotation	Chemical method	FCC III /P-25	FCC III /monographs
	Heavy metals	Limit Test	FCC III /P-25	FCC III /monographs
	Phenols	Chemical method	FCC III /P-25	FCC III /monographs
	Refractive index	RI Instrument	FCC III /P-25	FCC III /monographs
	Solidification point	Chemical method	FCC III /P-25	FCC III /monographs
	Solubility in alcohol	Chemical method	FCC III /P-25	FCC III /monographs
	Specific Gravity	Chemical method	FCC III /P-25	FCC III /monographs
Caraway oil				
	Carvone	GLC	GC Application	NA
	Angular Rotation	Chemical method	FCC III /P-70	FCC III /monographs
	Heavy metals	Limit Test	FCC III /P-70	FCC III /monographs
	Refractive index	RI Instrument	FCC III /P-70	FCC III /monographs
	Solidification point	Chemical method	FCC III /P-70	FCC III /monographs
	Solubility in alcohol	Chemical method	FCC III /P-70	FCC III /monographs
	Specific Gravity	Chemical method	FCC III /P-70	FCC III /monographs
Clove oil				
	Eugenol	GLC	GC Application	NA
	<i>Eugenol</i>	<i>Chemical method</i>	FCC III	FCC III /monographs
	Heavy metals	Limit Test	FCC III /P-88, IP 96	FCC III /monographs, IP 96
	Phenols	Chemical method	FCC III /P-88, IP 96	FCC III /monographs, IP 96
	Refractive index	RI Instrument	FCC III /P-88, IP 96	FCC III /monographs, IP 96
	Solubility in alcohol	Chemical method	FCC III /P-88	FCC III /monographs
	Specific Gravity	Chemical method	FCC III /P-88, IP 96	FCC III /monographs, IP 96
	Alkali-soluble matter	Chemical method	IP 96	IP 96
Dill seed oil				
	Carvone	GLC	GC Application	NA
	<i>Carvone</i>	<i>Nutral Sulfite method</i>	FCC III	FCC III /monographs
	Angular Rotation	Chemical method	FCC III /P-101	FCC III /monographs
	Heavy metals	Limit Test	FCC III /P-101	FCC III /monographs
	Phenols	Chemical method	FCC III /P-101	FCC III /monographs
	Refractive index	RI Instrument	FCC III /P-101	FCC III /monographs
	Solubility in alcohol	Chemical method	FCC III /P-101	FCC III /monographs
	Specific Gravity	Chemical method	FCC III /P-101	FCC III /monographs
Lemon grass oil				
	Citral	GLC	GC Application	NA
	Geraniol	GLC	GC Application	NA
	<i>Geraniol</i>	<i>Chemical method</i>	FCC III	FCC III /monographs
	Angular Rotation	Chemical method	FCC III /P-168	FCC III /monographs
	Heavy metals	Limit Test	FCC III /P-168	FCC III /monographs
	Refractive index	RI Instrument	FCC III /P-168	FCC III /monographs
	Solubility in alcohol	Chemical method	FCC III /P-168	FCC III /monographs
	Specific Gravity	Chemical method	FCC III /P-168	FCC III /monographs
	Steam-Volatiles	Chemical method	FCC III /P-168	FCC III /monographs

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Lemon oil				
	Citral	GLC	GC Application	NA
	Aldehyde	Chemical method	FCC III /P-169	FCC III /monographs
	Angular Rotation	Chemical method	FCC III /P-169	FCC III /monographs
	Heavy metals	Limit Test	FCC III /P-169	FCC III /monographs
	Refractive index	RI Instrument	FCC III /P-169	FCC III /monographs
	Specific Gravity	Chemical method	FCC III /P-169	FCC III /monographs
	Ultraviolet Absorbance	Chemical method	FCC III /P-169	FCC III /monographs
Lime oil (Cold Pressed)				
	Citral	GLC	GC Application	NA
	<i>Citral</i>	<i>Tert-butyl Alcohol method</i>	FCC III	FCC III /monographs
	Angular Rotation	Chemical method	FCC III /P-172	FCC III /monographs
	Arsenic	Chemical method	FCC III /P-172	FCC III /monographs
	Heavy metals	Limit Test	FCC III /P-172	FCC III /monographs
	Lead	Chemical method	FCC III /P-172	FCC III /monographs
	Refractive index	RI Instrument	FCC III /P-172	FCC III /monographs
	Residue on ignition	Chemical method	FCC III /P-172	FCC III /monographs
	Ultraviolet Absorbance	Chemical method	FCC III /P-172	FCC III /monographs
Lime oil (Distilled)				
	Citral	GLC	GC Application	NA
	Aldehyde's	Chemical method	FCC III /P-172	FCC III /monographs
	Angular Rotation	Chemical method	FCC III /P-172	FCC III /monographs
	Heavy metals	Limit Test	FCC III /P-172	FCC III /monographs
	Refractive index	RI Instrument	FCC III /P-172	FCC III /monographs
	Solubility in alcohol	Chemical method	FCC III /P-172	FCC III /monographs
	Specific Gravity	Chemical method	FCC III /P-172	FCC III /monographs
	Ultraviolet Absorbance	UV-Vis Spectrophotometer	FCC III /P-172	FCC III /monographs
Mentha oil				
	Menthol	GLC	GC Application	NA
	Acidity or alkalinity	Chemical method	IP 96	IP 96
	Optical rotation	Polarimeter	IP 96	IP 96
Palmrosa oil				
	Geraniol	Chemical method	FCC III	FCC III /monographs
	Angular Rotation	Chemical method	FCC III /P-212	FCC III /monographs
	Heavy metals	Limit Test	FCC III /P-212	FCC III /monographs
	Refractive index	RI Instrument	FCC III /P-212	FCC III /monographs
	Solubility in alcohol	Chemical method	FCC III /P-212	FCC III /monographs
	Specific Gravity	Chemical method	FCC III /P-212	FCC III /monographs
Peppermint oil				
	Menthone	Chemical method	FCC III	FCC III /monographs
	Menthol	GLC	GC Application	NA
	Iso menthol	GLC	GC Application	NA
	Angular Rotation	Chemical method	FCC III /P-219, IP 96	FCC III /monographs, IP 96

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	Dimethyl Sulfide	Chemical method	FCC III /P-219, IP 96	FCC III /monographs, IP 96
	Heavy metals	Limit Test	FCC III /P-219	FCC III /monographs
	Refractive index	RI Instrument	FCC III /P-219, IP 96	FCC III /monographs, IP 96
	Solubility in alcohol	Chemical method	FCC III /P-219	FCC III /monographs
	Specific Gravity	Chemical method	FCC III /P-219	FCC III /monographs
	Fixed oils and resinified volatile oils	Chemical method	IP 96	IP 96
Spearmint oil				
	Menthol	GLC	GC Application	NA
	Carvone	GLC	GC Application	NA
	<i>Carvone</i>	<i>Neutral Sulfite method</i>	FCC III	FCC III /monographs
	Angular Rotation	Chemical method	FCC III /P-309	FCC III /monographs
	Heavy metals	Limit Test	FCC III /P-309	FCC III /monographs
	Refractive index	RI Instrument	FCC III /P-309	FCC III /monographs
	Solubility in alcohol	Chemical method	FCC III /P-309	FCC III /monographs
	Specific Gravity	Chemical method	FCC III /P-309	FCC III /monographs
Citranellal oil				
	Citranellal	GLC	GC Application	NA
	Citranelol	GLC	GC Application	NA
	Geraniol	GLC	GC Application	NA
Eucalyptus oil				
	Cineole	GLC	GC Application	NA
	<i>Cineole</i>	<i>Chemical method</i>	FCC III	FCC III /monographs
	Heavy metals	Limit Test	FCC III /P-115	FCC III /monographs
	Phellandrene	Chemical method	FCC III /P-115, IP 96	FCC III /monographs, IP 96
	Refractive index	RI Instrument	FCC III /P-115, IP 96	FCC III /monographs, IP 96
	Solubility in alcohol	Chemical method	FCC III /P-115	FCC III /monographs
	Specific Gravity	Chemical method	FCC III /P-115	FCC III /monographs
	Optical rotation	Polarimeter	IP 96	IP 96
	Aldehyde		IP 96	IP 96
Geranium oil				
	Geraniol	GLC	GC Application	NA
	<i>Geraniol</i>	<i>Chemical method</i>	<i>FCC III</i>	<i>FCC III /monographs</i>
	Acid value	Chemical method	FCC III /P-132	FCC III /monographs
	Angular Rotation	Chemical method	FCC III /P-132	FCC III /monographs
	Ester value after Acetylation	Chemical method	FCC III /P-132	FCC III /monographs
	Heavy metals	Limit Test	FCC III /P-132	FCC III /monographs
	Refractive index	RI Instrument	FCC III /P-132	FCC III /monographs
	Solubility in alcohol	Chemical method	FCC III /P-132	FCC III /monographs
	Specific Gravity	Chemical method	FCC III /P-132	FCC III /monographs
Rose oil				
	Citranellol	GLC	GC Application	NA
	Geraniol	GLC	GC Application	NA
	Angular Rotation	Chemical method	FCC III /P-265	FCC III /monographs
	Heavy metals	Limit Test	FCC III /P-265	FCC III /monographs

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	Refractive index	RI Instrument	FCC III /P-265	FCC III /monographs
	Solubility	Chemical method	FCC III /P-265	FCC III /monographs
	Specific Gravity	Chemical method	FCC III /P-265	FCC III /monographs
Ajowan oil				
	Thymol	GLC	GC Application	NA
	p-Cymene	GLC	GC Application	NA
Cumin oil				
	p-Anisaldehyde	GLC	GC Application	NA
	Carvone	GLC	GC Application	NA
	<i>Carvone</i>	<i>Chemical method</i>	FCC III	FCC III /monographs
	Angular Rotation	Chemical method	FCC III /P-92	FCC III /monographs
	Heavy metals	Limit Test	FCC III /P-92	FCC III /monographs
	Refractive index	RI Instrument	FCC III /P-92	FCC III /monographs
	Solubility in alcohol	Chemical method	FCC III /P-92	FCC III /monographs
	Specific Gravity	Chemical method	FCC III /P-92	FCC III /monographs