



CERTIFICATE OF ANALYSIS (COA)

PRODUCT IDENTIFICATION

Product Name: Gurjun Balsam Dark
Manufacturer Product Description: Mixture of Odoriferous Substance – Compound G
Botanical Source: Dipterocarpus spp.
INCI Name: Dipterocarpus Turbinatus Balsam Oil
CAS Number: 8030-55-5
Material Type: Natural balsam/tree exudate
Principal Chemical Type: Alpha-Copaene chemotype
Country of Origin: Indonesia
Plant Part: Gum and resin
Process Description: Balsam/tree exudate obtained from a cavity of the Gurjun tree by internal heating
Recommended Use: Fragrance and cosmetic raw material

BATCH IDENTIFICATION

Parameter	Details
Manufacturer Type/Lot Number	T-2602035-1
Sample Request Number	SR-2602035
Product IPC	GB-001
Manufacturing Date	23/07/2025
Date of Analysis	23/07/2025
Best-Before Date	22/07/2028

PHYSICAL AND ORGANOLEPTIC ANALYSIS

Test	Specification	Result	Status
Visual Description	Pale yellow to brown mobile liquid	Complies with standard	Conforms
Appearance Variability	Natural, non-standardised appearance that may vary between batches	Complies with standard	Conforms
Odour Evaluation	Balsamic, woody, sweet, greasy and peppery	Complies with standard	Conforms

PHYSICAL AND CHEMICAL ANALYSIS



Test	Method/Temperature	Lower Limit	Upper Limit	Result
Refractive Index	ISO 280:1998 at 20 °C	1.4690	1.5200	1.5038
Specific Gravity	ISO 279:1998 at 25 °C	0.9100	0.9700	0.9339
Optical Rotation	ISO 592 at 25 °C	-5 °	+4 °	+2.69 °

GC ASSAY/COMPOSITIONAL ANALYSIS

Component	Molecular Class	Unit	Lower Limit	Upper Limit	Assay Result
Beta-Caryophyllene	Sesquiterpene	%	15.00	25.00	19.54
Alpha-Copaene	Sesquiterpene	%	40.00	55.00	46.54
Alpha-Humulene	Sesquiterpene	%	2.00	6.00	3.55

PRINCIPAL CONSTITUENTS

The principal quantitatively reported sesquiterpenes are:

- Alpha-Copaene – 46.54%
- Beta-Caryophyllene – 19.54%
- Alpha-Humulene – 3.55%

Total Reported Principal Sesquiterpenes: 69.63%

The Alpha-Copaene concentration of 46.54% confirms that the material is the Copaene Type of Gurjun Balsam Dark.

QUALITY ASSESSMENT

Quality Parameter	Assessment
Appearance	Conforms to standard
Colour	Conforms to natural reference
Odour	Conforms to standard
Refractive Index	Within specification
Specific Gravity	Within specification
Optical Rotation	Within specification
Beta-Caryophyllene	Within specification
Alpha-Copaene	Within specification



Quality Parameter	Assessment
Alpha-Humulene	Within specification
Overall Quality	Approved

ORGANOLEPTIC PROFILE

Appearance: Pale yellow to brown mobile liquid

Natural Appearance: Non-standardised and may vary between batches

Odour Family: Woody and balsamic

Odour Description: Balsamic, woody, sweet, greasy and peppery

Principal Character: Warm, natural, resinous and sesquiterpenic

Chemotype: Alpha-Copaene rich

PRODUCT PURITY AND STATUS

Material Classification: Natural balsam/tree exudate

Primary Molecular Class: Sesquiterpenes

Principal Chemotype Marker: Alpha-Copaene

Carrier or Diluent: Not identified in the supplied COA

Added Synthetic Fragrance: Not reported

Added Colourant: Not reported

Added Preservative: Not reported

As a natural aromatic material, its appearance and chemical composition may vary between batches.

STORAGE CONDITIONS

Store in tightly closed and preferably full containers in a cool, dry and well-ventilated place.

Protect from:

- Direct sunlight
- Excessive heat
- Moisture
- Prolonged air exposure
- Open flames and ignition sources
- Strong acids
- Strong alkalis
- Oxidising agents

Recommended Storage Temperature: Below 25 °C

HANDLING REQUIREMENTS



- Handle in a well-ventilated area.
- Avoid contact with the skin and eyes.
- Avoid breathing concentrated vapour or mist.
- Wear chemical-resistant gloves and eye protection.
- Keep away from heat and ignition sources.
- Do not consume.
- Do not apply directly to the skin without dilution.
- Consult the accompanying Safety Data Sheet before use.

QUALITY CONCLUSION

The batch identified as T-2602035-1 conforms to the approved physical, chemical, organoleptic and compositional specifications for Gurjun Balsam Dark – Copaene Type.

The material contains:

- 46.54% Alpha-Copaene
- 19.54% Beta-Caryophyllene
- 3.55% Alpha-Humulene

Quality Status: APPROVED

Overall Result: CONFORMS TO SPECIFICATION

DOCUMENT VALIDITY

Issue/Analysis Date: 23/07/2025

Expiry/Best-Before Date: 22/07/2028

Validity Period: Three years

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