SIDHI MARWADI PRIVATE LIMITED

Dedicated to Nature and Culture

IN-HOUSE QUALITY CONTROL & ANALYTICAL TEST REPORT

CERTIFICATE OF INTERNAL LABORATORY ANALYSIS (COA) • FSSAI & BIS COMPLIANCE

Executive Quality Statement: At Sidhi Marwadi Private Limited, purity, transparency, and traditional authenticity are the cornerstones of our edible oil heritage. Every batch of our Groundnut (Mungfali / Peanut) Oil is traditionally cold-pressed (Kolhu / Kachi Ghani) from sorted, premium Marwadi groundnut kernels without chemical solvents, caustic refining, or synthetic antioxidants, and is rigorously audited by our In-House Quality Assurance & Analytical Division prior to bottling. This report documents the comprehensive physico-chemical, lipid authenticity, solvent-residue, contaminant, and microbiological evaluation conducted in accordance with the Food Safety and Standards (Food Products Standards and Food Additives) Regulations, 2011 (Regulation 2.2.1.3 – Groundnut Oil / Mungfali Ka Tel) and BIS (IS 544) / ISO analytical protocols.

1. SAMPLE & BATCH IDENTIFICATION METADATA | Traceability & Regulatory Particulars

Product Name	Sidhi Marwadi Pure & Traditional Cold-Pressed Groundnut (Mungfali) Oil	**Report Reference No.**	SMPL/QC/COA/2026/1111
Botanical / Commodity Name	Arachis hypogaea L. (100% Expressed Virgin Groundnut Kernel Oil)	**Date of Sampling & Analysis**	15 November 2026
Batch / Lot Number	26/M1000/K11	**Manufacturing / Packing Date**	November 2026 (Shelf Life: 12 Months)
Testing Facility	In-House Quality Control & Analytical Lab, Sidhi Marwadi Pvt. Ltd., Jodhpur	**FSSAI License Number**	12224999000329
Sample Condition & Packaging	Intact, Sealed Food-Grade Retail Pack (1 Litre Control Sample)	**Overall Batch Verdict**	**COMPLIANT / PASSED (100% PURE)**

2. ORGANOLEPTIC & PHYSICAL AUTHENTICITY PROFILE | Macroscopic & Sensory Evaluation

Appearance & Clarity	Bright, clear golden-yellow liquid oil obtained via natural cloth/gravity filtration; completely free from suspended sediment, haziness, or separated water.
Aroma & Flavour	Rich, nutty, sweet-roasted aroma characteristic of fresh Marwadi groundnut kernels; 100% free from rancid, burnt, chemical, or stale off-odours.
Viscosity & Mouthfeel	Smooth, full-bodied natural viscosity retaining native tocopherols (Vitamin E) and phytosterols; zero synthetic anti-foaming agents or mineral oil slickness.

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3. COMPREHENSIVE ANALYTICAL & SAFETY TEST RESULTS | Audited 16-Point Laboratory Evaluation

S.No.	Test Parameters	Unit	Observed Test Result	Regulatory Requirement / Specification Limit (FSSAI / BIS)	Validated Method / Source Protocol	Status
1	**Refractive Index at 40°C**	—	**1.4630**	1.4620 – 1.4640	FSSAI 02.003:2021 / Refractometric Method	**Complies**
2	**Butyro-Refractometer (BR) Reading at 40°C**	BR Scale	**55.5**	54.0 – 57.1 (Oil-Specific Reference Range; Alternative to RI)	FSSAI 02.003:2021	**Complies**
3	**Saponification Value**	mg KOH/g	**192 mg KOH/g**	188 – 196 mg KOH/g	FSSAI 02.007:2021 / Titrimetric Method	**Complies**
4	**Iodine Value (Wijs Method)**	g I_2/100 g	**92 g I_2/100 g**	85 – 99 g I_2/100 g	FSSAI 02.010:2021 (Wijs Method)	**Complies**
5	**Acid Value (Free Fatty Acid Indicator)**	mg KOH/g	**≤ 0.5 mg KOH/g**	≤ 6.0 mg KOH/g (Expressed / Unrefined Edible Groundnut Oil)	FSSAI 02.009:2021 / Titrimetric Method	**Superior**
6	**Unsaponifiable Matter**	% by mass	**0.5%**	≤ 1.0% (Max)	FSSAI 02.008:2021 / Gravimetric Extraction	**Superior**
7	**Argemone Oil (Adulterant Screen)**	Qualitative	**Negative (Absent)**	Negative (Must be Absent – Zero Tolerance)	FSSAI 02.032:2021	**Complies**

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S.No.	Test Parameters	Unit	Observed Test Result	Regulatory Requirement / Specification Limit (FSSAI / BIS)	Validated Method / Source Protocol	Status
8	**Hexane / Extraction Solvent Residue**	mg/kg	**BLQ (Not Detected)**	Expelled / Cold-Pressed Oil: Free from Hexane Residue (BLQ)	ISO 8892:1995 / FSSAI Process Requirement	**Superior**
9	**Peroxide Value (Primary Oxidation)**	meq O_2/kg	**≤ 2.0 meq O_2/kg (At Release)**	≤ 15.0 meq O_2/kg (Virgin / Expressed Edible Oil Standard)	FSSAI 02.042:2021 (Fresh Sample Assay)	**Superior**
10	**Moisture & Insoluble Impurities**	% by mass	**Moisture ≤ 0.05%; Impurities ≤ 0.05%**	Combined ≤ 0.25% (Clear, free from separated water & sediment)	FSSAI 02.001:2021 / Gravimetric Method	**Superior**
11	**Fatty-Acid Profile & Sterol/TAG Fingerprint**	% Fatty Acid / Profile	**Conforms 100% to Groundnut Oil; Zero Foreign Oil Markers**	Must match declared Arachis hypogaea L. profile (Oleic/Linoleic/Arachidic/Behenic)	GC-FID / GC-MS Advanced Marker Profiling	**Complies**
12	**Mineral Oil, Castor Oil & Foreign Veg Oils**	Qualitative / Profile	**Negative (Absent in Profile)**	Absent / Identity Consistent with 100% Pure Groundnut Oil	FSSAI 02.029; Castor Test; GC Sterol Profile	**Complies**
13	**Pesticide Residues (Multi-Residue Panel)**	mg/kg	**BLQ (Not Detected)**	Each residue ≤ Applicable FSSAI MRLs (LOQ ≤ 0.01 mg/kg)	LC-MS/MS + GC-MS/MS Multi-Residue Screen	**Complies**
14	**Heavy Metals (Pb, Cd, As, Hg)**	mg/kg	**Pb, Cd, As, Hg: BLQ**	Within FSSAI Contaminant Limits (Pb ≤0.1, Cd ≤0.05, As ≤0.1, Hg ≤0.25)	ICP-MS / ICP-OES Validated Method	**Complies**

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S.No.	Test Parameters	Unit	Observed Test Result	Regulatory Requirement / Specification Limit (FSSAI / BIS)	Validated Method / Source Protocol	Status
15	**Aflatoxin B1 & Total Aflatoxins**	µg/kg	**BLQ (Not Detected)**	Total Aflatoxins ≤ 15 µg/kg; Aflatoxin B1 ≤ 10 µg/kg (FSSAI)	HPLC-FLD / LC-MS/MS	**Complies**
16	**Microbiological Profile (TPC, Yeast/Mould, E. coli, Salmonella)**	CFU/g or Presence	**Low TPC & Yeast/Mould counts; E. coli & Salmonella: Absent**	Pathogens Absent (E. coli Absent in 1 g; Salmonella Absent in 25 g)	IS / ISO / FSSAI Microbiology Manual	**Complies**

Technical Abbreviations: RI = Refractive Index; BR = Butyro-Refractometer; meq O_2/kg = Milliequivalents of Active Oxygen per kg; TAG = Triacylglycerol; GC-FID = Gas Chromatography with Flame Ionization Detection; BLQ = Below Limit of Quantification (Not Detected); LOQ = Limit of Quantification; MRL = Maximum Residue Limit; FSSAI = Food Safety and Standards Authority of India; BIS = Bureau of Indian Standards.

4. SCIENTIFIC AUDIT & QUALITY INTERPRETATION | What These Analytical Numbers Mean for Consumers

- **Ultra-Low Acid Value (≤ 0.5 mg KOH/g vs. ≤ 6.0 Limit) & Peroxide Value (≤ 2.0 meq O_2/kg vs. ≤ 15.0 Limit):** While FSSAI permits an Acid Value up to 6.0 mg KOH/g and a Peroxide Value up to 15.0 meq O_2/kg for expressed unrefined groundnut oil, Sidhi Marwadi Groundnut Oil achieves ≤ 0.5 mg KOH/g and ≤ 2.0 meq O_2/kg at release. This proves that our oil is pressed exclusively from fresh, sound, non-damaged groundnut kernels with minimal free fatty acid hydrolysis and virtually zero lipid oxidation—delivering superior shelf stability and high smoke-point cooking performance without chemical refining.
- **100% Free from Cheap Foreign Oils (Palm Olein, Cottonseed, Soybean) via GC-FID / Sterol Fingerprinting:** Commercial groundnut oils are frequently blended with cheap refined palmolein, cottonseed, or soybean oil. Exact centering of Refractive Index (1.4630), BR Reading (55.5), Saponification Value (192 mg KOH/g), and Iodine Value (92 g I_2/100 g), backed by Gas Chromatography (GC-FID/GC-MS) fatty-acid and sterol profiling, confirms 100% botanical authenticity (Arachis hypogaea L.) with zero foreign vegetable oils, castor oil, or mineral oil.
- **Zero Hexane Solvent Residue (BLQ) & Negative Argemone Oil:** Industrial refined oils use petroleum-derived Hexane solvent to extract oil at high temperatures. Our traditional mechanical Kolhu/cold-pressing process requires zero chemical solvents, resulting in Hexane Residue Below Limit of Quantification (BLQ) and complete absence of toxic Argemone oil.
- **Aflatoxin-Free (BLQ), Zero Heavy Metals & Ultra-Low Moisture (≤ 0.05%):** Groundnuts are naturally prone to Aspergillus mould and Aflatoxin B1 if poorly stored. Optical kernel sorting and strict moisture control (≤ 0.05% moisture in oil) ensure Aflatoxin B1 & Total Aflatoxins, Heavy Metals (Pb, Cd, As, Hg), and Pesticide Residues are all BLQ, alongside complete absence of E. coli and Salmonella.

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5. QUALITY ASSURANCE DECLARATION & AUTHORIZED SIGNATORY | In-House Laboratory

Verification & Transparency Notice

Regulatory & Transparency Declaration: We hereby certify that the sample described above was sampled and analyzed by the In-House Quality Control & Analytical Laboratory of Sidhi Marwadi Private Limited (Jodhpur, Rajasthan) coupled with validated instrumental test protocols. Based on the 16-point audit above, the product conforms to all mandatory quality and food safety parameters stipulated under FSSAI Regulation 2.2.1.3 (Groundnut Oil / Mungfali Ka Tel) and IS 544. This report is published on www.sidhimarwadi.com for consumer education and batch transparency.

ANALYZED & PREPARED BY	REVIEWED & VERIFIED BY	APPROVED & AUTHORIZED BY
Deepa	SIDHI MARWADI PRIVATE LIMITED U10795RJ2025PTC102887	For SIDHI MARWADI PRIVATE LIMITED DIRECTOR
Quality Control Analyst In-House Analytical Lab Sidhi Marwadi Private Limited Date: 15/11/2026	Head – Quality Assurance (QA) Food Safety & Compliance Division Sidhi Marwadi Private Limited FSSAI Lic. No.: 12224999000329	Authorized Signatory / Director Sidhi Marwadi Private Limited Jodhpur, Rajasthan - 342606 [Official Company Stamp / Seal]