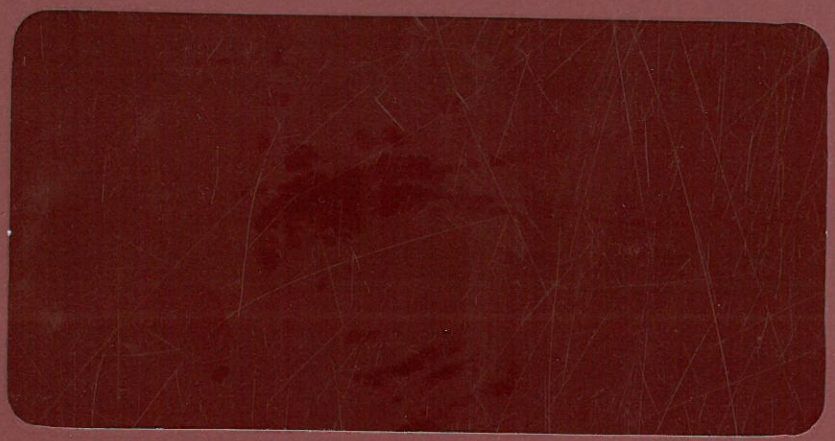
**TEST REPORT**

**Report No. CTS 2418779**

# INDUSTRIAL TECHNOLOGY INSTITUTE

# (CISIR)

*Driving the Nation trough Technology*



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To be a regional centre of excellence in scientific industrial research for national development

## Mission

To conduct innovative R&D and provid internationally competitive technical services to accelerate industrial development for the benefit of the people of Sri Lanka

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## TEST REPORT

**Report No. CTS 2418779**

**Report to :**

**Osudhara Ayurvedic Products**
**No. 166, Main Road**
**Battaramulla**

**Herbal Technology Section**

**2025.02.03**

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## Test Report on Agni Spice Tea

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| | | |
|---|---|---|
| **Name & Address of the customer** | : | Osudhara Ayurvedic Products<br>No. 166, Main Road<br>Battaramulla |
| **Specimen** | : | Agni Spice Tea<br>Description -<br>Appearance - Powder<br>Colour - Light brown<br>Odour - Characteristic odour of spice<br>Foreign matters - Foreign matters were not observed<br>Container - Black colour ziplock plastic bag (Approx. 50 g x 5)<br>Label -<br>**"agni<br>SPICE Tea<br>150 g<br>Reg. No : 6/2/1/01/111<br>B. No : 1124<br>MFD - 10/11/24<br>EXP - 10/11/26"** |
| **Date of receipt** | : | 2024.11.20 |
| **Test requested** | : | Tests for moisture content, pH value, fineness test, heavy metals, microbiological limits and identification as per customer's letter dated on 2024.11.19. |
| **Test method** | : | (i) Moisture content<br>ISO 939 : 2021<br><br>(ii) pH value (5% aqueous solution)<br>pH meter<br><br>(iii) Fineness test (Passed through 500 µm sieve & 300 µm sieve)<br>SLS 186, Part 12: 2016<br><br>(iv) Heavy metals<br>Lead (Pb) - Microwave digestion & detection by ICPMS<br>Cadmium (Cd) - Microwave digestion & detection by ICPMS<br>Arsenic (As) - Microwave digestion & detection by ICPMS<br>Mercury (Hg) - Microwave digestion & detection by ICPMS |

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(v) Microbiological Limits

Aerobic plate count, CFU/g - SLS 516-1/Section 1:2013
Yeasts & Mould, CFU/g - SLS 516-2/Section 2:2013
*E.coli*, MPN/g - SLS 516-12 : 2013
*Staphylococcus aureus*, CFU/g- SLS 516-6 : 2022
*Salmonella* per 25 g - SLS 516-5 : 2017
*Pseudomonas aeruginosa* per 10 g - British pharmacopoeia 2024/Volume V
Enterobacteriaceae, CFU/g - ISO 21528-2 : 2004

(vi) Identification

Thin Layer Chromatography (TLC).

Method

TLC fingerprint profile of the sample was compared with the TLC fingerprint profile of the standard mixture of raw materials in a ratio of 1 : 1 (w/w) provided by the manufacturer.

Extraction procedure

Sample was extracted into dichloromethane, concentrated and spotted on a pre-coated TLC plate.

TLC parameters:
Plate - Silica gel $GF_{254}$ pre-coated
Solvent system -

| Dichloromethane | Cyclohexane | Ethyl acetate |
|---|---|---|
| 4 | 3 | 0.5 |

Direct evaluation - λ 254 nm & 366 nm
Spray reagent - Vanillin sulphate and heated at 105 °C for 5 min.

**Test dates** : 2024.11.22 - 2025.01.03

**Results** :

(i) Moisture content - 8.8%, w/w

(ii) pH value (5% aqueous solution)- 4.6 (at 25 °C)

(iii) Fineness test - 99.6 ± 0.0%, w/w (Passed through 1.18 mm sieve)

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(iv) Heavy metals

| | | |
|---|---|---|
| Lead (Pb) | - | Not detected |
| Cadmium (Cd) | - | Not detected |
| Arsenic (As) | - | Not detected |
| Mercury (Hg) | - | Not detected |

*Minimum detectable level of Pb, Cd, As and Hg is 0.05 mg/kg.

(v) Microbiological Limits

| | | |
|---|---|---|
| Aerobic plate count, CFU/g | - | $1.1 \times 10^5$ |
| Yeasts & Mould, CFU/g | - | $3.9 \times 10^4$ |
| *E.coli*, MPN/g | - | Not detected |
| *Staphylococcus aureus*, CFU/g | - | < 10 |
| *Salmonella* per 25 g | - | Absent |
| *Pseudomonas aeruginosa* per 10 g | - | Absent |
| Enterobacteriaceae, CFU/g | - | < 10 |

(vi) Identification -
TLC analysis

| **$R_f$ values and colours of the standard mixture of raw materials provided by the manufacturer** | | **$R_f$ values and colours of the sample provided by the manufacturer** | |
|---|---|---|---|
| **Before spraying** | **After spraying** | **Before spraying** | **After spraying** |
| **λ 254 nm & λ 366 nm** | | **λ 254 nm & λ 366 nm** | |
| 0.13 | 0.13 (Purple) | 0.13 | 0.13 (Purple) |
| 0.14 | 0.14 (Blue) | 0.14 | 0.14 (Blue) |
| 0.21 | 0.21 (Purple) | 0.27 | 0.27 (Brown) |
| 0.27 | 0.27 (Brown) | 0.29 | 0.29 (Violet) |
| 0.29 | 0.29 (Violet) | 0.44 | 0.34 (Pink) |
| 0.38 | 0.34 (Pink) | 0.51 | 0.44 (Green) |
| 0.44 | 0.38 (Purple) | 0.56 | 0.51 (Purple) |
| 0.51 | 0.44 (Green) | 0.62 | 0.56 (Pink) |
| 0.56 | 0.51 (Purple) | 0.73 | 0.62 (Green) |
| 0.62 | 0.56 (Pink) | 0.78 | 0.73 (Brown) |
| 0.67 | 0.62 (Green) | 0.82 | 0.78 (Green) |
| 0.73 | 0.67 (Purple) | 0.85 | 0.82 (Blue) |
| 0.78 | 0.73 (Brown) | 0.93 | 0.85 (Yellow) |
| 0.82 | 0.78 (Green) | | 0.93 (Purple) |
| 0.85 | 0.82 (Blue) | | |
| 0.93 | 0.85 (Yellow) | | |
| 0.96 | 0.93 (Purple) | | |
| | 0.96 (Violet) | | |

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**Comment** : TLC fingerprint profile of the sample has similarities* in terms of $R_f$ values and colours to the TLC fingerprint profile of the standard mixture of raw materials made out of *Piper nigrum, Zingiber officinale, Phyllanthus emblica, Trigonella foenum graecum, Allium sativum* and *Salacia reticulata* provided by the manufacturer claiming to contain in the product.

* Approx. 75%.

Tests for Microbiological limits and Heavy metals were subcontracted to Chemical & Microbiological Laboratory and Residue Analysis Laboratory of ITI respectively.

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Dr(Mrs) S. Chelvendran
**Principal Research Scientist**
**Herbal Technology Section**

2025.02.03
/gd

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Principal Research Scientist
Herbal Technology Section
Industrial Technology Institute

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Prof. R. M. Dharmadasa
**Director**
**Herbal Technology Section**

Prof. R M Dharmadasa
B.Sc(Hons) SP.,M.Phil,PhD
Research Professor/Director
Herbal Technology Section/Industrial Technology Institute

**The report is limited specifically to the specimen/s submitted.**

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