

# FEDERATION FOR DEVELOPMENT OF ACCREDITATION SERVICES

118-119, First Floor, Sushant Tower, Sector – 56, Gurugram – 122011, Haryana, India.



## CERTIFICATE OF ACCREDITATION (AS PER ISO/IEC 17025:2017)

This is to attest that

### **RAGHAVENDRA SPECTRO METALLURGICAL LABORATORY**

Plot No.326, IX Cross, IV Phase, Peenya Industrial Area  
Bengaluru-560058, India

### **Testing Laboratory**

has demonstrated compliance with ISO/IEC Standard 17025:2017, General requirements for the competence of testing and calibration laboratories and supplementary criteria for testing laboratories.

**Certificate Number:** TL-109

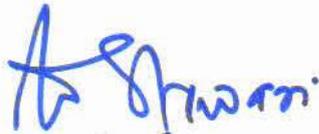
**Issue Date:** 04.04.2023

**Valid Until:** 03.04.2025

**\*Amended On:** 07.08.2024

The certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard and the relevant requirements of FDAS. (for scope of accreditation visit website [www. fdasindia.org](http://www.fdasindia.org)).

**\*This amended certificate is issued with ILAC MRA Mark .**

  
DEVI SARAN TEWARI  
Director

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(Annexure to Certificate of TL - 109)

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**Validity:** 21.05.2024 to 20.05.2026

**Amended on** 07.08.2024

| S.No. | Material/Products | Component/Parameter/<br>Characteristic tested | Test Method | Equipment<br>used |
|-------|-------------------|---|-------------|-------------------|
|-------|-------------------|---|-------------|-------------------|

### Biological Testing (Laboratory Based)

#### Group: Food & Agricultural Products

|    |   |                             |  |      |
|----|---|-----------------------------|--|------|
| 1. | Bakery and Confectionary Products/ Herbs, Spices and Condiments/ Cereals, Pulses and Cereal Products/ Milk and Dairy Products | Total Plate Count           | IS 5402:2012 RA 2018<br>IS 5402 p (1) & P (2) 2021 | ---- |
|    |   | Total Yeast and Mould Count | IS 5403 1999 RA 2018                               | ---- |
|    |   | Coliform                    | IS 5401 P (1) 2012 RA 2022                         | ---- |
|    |   | E. Coli                     | IS 5887 P (1) 1976 RA 2022                         | ---- |
|    |   | Salmonella                  | IS 5887 P (3) 1999 RA 2022                         | ---- |
|    |   | Staphylo coccous Aureus     | IS 5887 P (2) 1976 RA 2018                         | ---- |
|    |   | Shigella                    | IS 5887 P (7) 1999 RA 2022                         | ---- |

#### Group: Water

|    |   |                |                       |      |
|----|---|----------------|-----------------------|------|
| 1. | Drinking Water/<br>Ground Water/<br>Surface Water | Total Coliform | IS 1622: 1981 RA 2019 | ---- |
|    |   | E. Coli        | IS 1622: 1981 RA 2019 | ---- |

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Dealing Officer

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### Chemical Testing (Laboratory Based)

| Group: Metals & Alloys |                       |             |                                      |  |
|------------------------|-----------------------|-------------|--------------------------------------|--|
| 1.                     | Aluminum & its Alloys | Copper      | ASTM E 3061: 2017                    | ICP – OES<br>AVIO 220 Max.<br>Perkin Elmer |
|                        |                       | Iron        |                                      |  |
|                        |                       | Lead        |                                      |  |
|                        |                       | Magnesium   |                                      |  |
|                        |                       | Manganese   |                                      |  |
|                        |                       | Nickel      |                                      |  |
|                        |                       | Tin         |                                      |  |
|                        |                       | Titanium    |                                      |  |
| 2.                     | Low Alloy Steel       | Chromium    | RSML/SOP/ICP- OES/01/Rev<br>00: 2018 | ICP – OES<br>AVIO 220 Max.<br>Perkin Elmer |
|                        |                       | Copper      |                                      |  |
|                        |                       | Molybdenum  |                                      |  |
|                        |                       | Nickel      |                                      |  |
|                        |                       | Manganese   |                                      |  |
|                        |                       | Phosphorous |                                      |  |
|                        |                       | Sulphur     |                                      |  |
|                        |                       | Carbon      | IS 228 p (1) - 1987                  | ----                                       |
| Silicon                | IS 228 P (8) 1989     | ----        |                                      |  |
| 3.                     | Copper & its Alloys   | Copper      | IS 7212 Cl No.5:1974                 | ----                                       |
|                        |                       | Lead        | RSML/SOP/ICP- OES/<br>03Rev 00: 2022 | ICP– OES AVIO<br>220 Max.<br>Perkin Elmer  |
|                        |                       | Tin         |                                      |  |
|                        |                       | Zinc        |                                      |  |
|                        |                       | Iron        |                                      |  |
|                        |                       | Nickel      |                                      |  |
|                        |                       | Cobalt      |                                      |  |
| Bismuth                |                       |             |                                      |  |

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### Chemical Testing (Laboratory Based)

|    |                            |             |                                      |  |
|----|----------------------------|-------------|--------------------------------------|--|
|    |                            | Chromium    | RSML/SOP/ICP- OES/<br>03Rev 00: 2022 | ICP– OES AVIO<br>220 Max.<br>Perkin Elmer  |
|    |                            | Zirconium   |                                      |  |
|    |                            | Beryllium   |                                      |  |
|    |                            | Arsenic     |                                      |  |
|    |                            | Antimony    |                                      |  |
|    |                            | Tellurium   |                                      |  |
|    |                            | Silver      |                                      |  |
| 4. | Stainless Steel            | Carbon      | IS 228 Part 1: 1987                  | ----                                       |
|    |                            | Silicon     | IS 228 Part 8 : 1989                 | ----                                       |
|    |                            | Chromium    | RSML/SOP/ICP- OES/02Rev<br>00: 2018  | ICP – OES<br>AVIO 220 Max.<br>Perkin Elmer |
|    |                            | Copper      |                                      |  |
|    |                            | Manganese   |                                      |  |
|    |                            | Molybdenum  |                                      |  |
|    |                            | Nickel      |                                      |  |
|    |                            | Phosphorous |                                      |  |
|    |                            | Sulphur     |                                      |  |
| 5. | Tin & its Alloys           | Antimony    | ASTM F 3139: 2015                    | ICP – OES<br>AVIO 220 Max.<br>Perkin Elmer |
|    |                            | Bismuth     |                                      |  |
|    |                            | Cadmium     |                                      |  |
|    |                            | Copper      |                                      |  |
|    |                            | Iron        |                                      |  |
|    |                            | Lead        |                                      |  |
|    |                            | Nickel      |                                      |  |
|    |                            | Silver      |                                      |  |
|    |                            | Zinc        |                                      |  |
| 6. | Titanium & Titanium Alloys | Aluminium   | ASTM E 2371: 2013                    | ICP – OES<br>AVIO 220 Max.                 |
|    |                            | Chromium    |                                      |  |

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### Chemical Testing (Laboratory Based)

|    |                       |            |  |                                       |
|----|-----------------------|------------|--|---------------------------------------|
|    |                       | Cobalt     | ASTM E 2371 : 2013                                       | Perkin Elmer                          |
|    |                       | Copper     |  |                                       |
|    |                       | Iron       |  |                                       |
|    |                       | Nickel     |  |                                       |
|    |                       | Vanadium   |  |                                       |
| 7. | Cast Iron             | Aluminium  | IS 15338: 2018<br>ASTM E 1999: 2018<br>JIS G 1253 : 2002 | OES BAIRD Corporation USA ,Model DV-6 |
|    |                       | Boron      |  |                                       |
|    |                       | Carbon     |  |                                       |
|    |                       | Silicon    |  |                                       |
|    |                       | Manganese  |  |                                       |
|    |                       | Phosphorus |  |                                       |
|    |                       | Sulphur    |  |                                       |
|    |                       | Copper     |  |                                       |
|    |                       | Chromium   |  |                                       |
|    |                       | Nickel     |  |                                       |
|    |                       | Cobalt     |  |                                       |
|    |                       | Lead       |  |                                       |
|    |                       | Magnesium  |  |                                       |
|    |                       | Molybdenum |  |                                       |
|    |                       | Niobium    |  |                                       |
|    |                       | Titanium   |  |                                       |
|    |                       | Tungsten   |  |                                       |
|    |                       | Vanadium   |  |                                       |
| 8. | Aluminum & its Alloys | Aluminum   | ASTM E 1251: 2017  | OES BAIRD Corporation USA, Model DV-6 |
|    |                       | Boron      |  |                                       |
|    |                       | Chromium   |  |                                       |
|    |                       | Copper     |  |                                       |

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### Chemical Testing (Laboratory Based)

|    |                 |             |  |  |
|----|-----------------|-------------|--|--|
|    |                 | Iron        | ASTM E 1251:2017                                   | OES BAIRD Corporation USA ,Model DV-6  |
|    |                 | Lead        |  |  |
|    |                 | Magnesium   |  |  |
|    |                 | Manganese   |  |  |
|    |                 | Nickel      |  |  |
|    |                 | Silicon     |  |  |
|    |                 | Tin         |  |  |
|    |                 | Titanium    |  |  |
|    |                 | Zinc        |  |  |
| 9. | Low Alloy Steel | Aluminium   | IS 8811:2018<br>ASTM E415:2017<br>JIS G 1253: 2002 | OES BAIRD Corporation USA , Model DV-6 |
|    |                 | Boron       |  |  |
|    |                 | Carbon      |  |  |
|    |                 | Sulphur     |  |  |
|    |                 | Chromium    |  |  |
|    |                 | Cobalt      |  |  |
|    |                 | Copper      |  |  |
|    |                 | Lead        |  |  |
|    |                 | Manganese   |  |  |
|    |                 | Molybdenum  |  |  |
|    |                 | Nickel      |  |  |
|    |                 | Niobium     |  |  |
|    |                 | Phosphorous |  |  |
|    |                 | Silicon     |  |  |
|    |                 | Tin         |  |  |
|    |                 | Titanium    |  |  |
|    |                 | Tungsten    |  |  |
|    |                 | Vanadium    |  |  |

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### Chemical Testing (Laboratory Based)

|           |                     |             |   |                                       |
|-----------|---------------------|-------------|---|---------------------------------------|
| 10.       | Stainless Steel     | Nitrogen    | IS 9879:2015<br>ASTM E 1086: 2014<br>JIS G 1253: 2002 | OES BAIRD Corporation USA, Model DV-6 |
|           |                     | Aluminium   |   |                                       |
|           |                     | Boron       |   |                                       |
|           |                     | Carbon      |   |                                       |
|           |                     | Chromium    |   |                                       |
|           |                     | Cobalt      |   |                                       |
|           |                     | Copper      |   |                                       |
|           |                     | Lead        |   |                                       |
|           |                     | Manganese   |   |                                       |
|           |                     | Molybdenum  |   |                                       |
|           |                     | Neobium     |   |                                       |
|           |                     | Nickel      |   |                                       |
|           |                     | Nitrogen    |   |                                       |
|           |                     | Phosphorous |   |                                       |
|           |                     | Silicon     |   |                                       |
| Sulphur   |                     |             |   |                                       |
| Titanium  |                     |             |   |                                       |
| Tungsten  |                     |             |   |                                       |
| Vanadium  |                     |             |   |                                       |
| 11.       | Copper & its Alloys | Aluminum    | BS EN 15079: 2015                                     | OES BAIRD Corporation USA, Model DV-6 |
|           |                     | Chromium    |   |                                       |
|           |                     | Cobalt      |   |                                       |
|           |                     | Copper      | RSML/SOP/Chem/<br>03:2018                             |                                       |
|           |                     | Iron        | BN EN 15079: 2015                                     |                                       |
|           |                     | Lead        |   |                                       |
| Manganese |                     |             |   |                                       |

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### Chemical Testing (Laboratory Based)

|     |                     |             |                  |                                       |
|-----|---------------------|-------------|------------------|---------------------------------------|
|     |                     | Nickel      | BN EN 15079:2015 | OES BAIRD Corporation USA ,Model DV-6 |
|     |                     | Phosphorous |                  |                                       |
|     |                     | Silicon     |                  |                                       |
|     |                     | Sulphur     |                  |                                       |
|     |                     | Tin         |                  |                                       |
|     |                     | Zinc        |                  |                                       |
| 12. | Nickel & its Alloys | Aluminium   | ASTM E 3047:2016 | OES BAIRD Corporation USA, Model DV-6 |
|     |                     | Boron       |                  |                                       |
|     |                     | Carbon      |                  |                                       |
|     |                     | Chromium    |                  |                                       |
|     |                     | Cobalt      |                  |                                       |
|     |                     | Copper      |                  |                                       |
|     |                     | Iron        |                  |                                       |
|     |                     | Lead        |                  |                                       |
|     |                     | Magnesium   |                  |                                       |
|     |                     | Manganese   |                  |                                       |
|     |                     | Molybdenum  |                  |                                       |
|     |                     | Neobium     |                  |                                       |
|     |                     | Nickel      |                  |                                       |
|     |                     | Phosphorous |                  |                                       |
|     |                     | Silicon     |                  |                                       |
|     |                     | Sulfur      |                  |                                       |
|     |                     | Titanium    |                  |                                       |
|     |                     | Tungsten    |                  |                                       |
|     |                     | Vanadium    |                  |                                       |
|     |                     | Zirconium   |                  |                                       |

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### Chemical Testing (Laboratory Based)

|          |                              |  |                       |  |
|----------|------------------------------|--|-----------------------|--|
| 13.      | Tin & its Alloys,<br>Solders | Iron   | RSML/SOP/Chem/03:2019 | OES BAIRD<br>Corporation<br>USA ,Model<br>DV-6 |
|          |                              | Aluminium  |                       |  |
|          |                              | Antimony   |                       |  |
|          |                              | Arsenic  |                       |  |
|          |                              | Bismuth  |                       |  |
|          |                              | Cadmium  |                       |  |
|          |                              | Copper   |                       |  |
|          |                              | Lead   |                       |  |
|          |                              | Nickel   |                       |  |
|          |                              | Silver   |                       |  |
|          |                              | Tin (We are having Sn CRM of<br>99.99% to analyse Tin) |                       |  |
|          |                              | Zinc   |                       |  |
| 14.      | Tool Steel                   | Carbon   | JIS G 1253 : 2002     | OES BAIRD<br>Corporation<br>USA ,Model<br>DV-6 |
|          |                              | Chromium   |                       |  |
|          |                              | Cobalt   |                       |  |
|          |                              | Manganese  |                       |  |
|          |                              | Molybdenum   |                       |  |
|          |                              | Phosphorous  |                       |  |
|          |                              | Silicon  |                       |  |
|          |                              | Sulphur  |                       |  |
|          |                              | Tungsten   |                       |  |
| Vanadium |                              |  |                       |  |
| 15.      | Zinc& Zinc Alloys            | Aluminium  | ASTME634:2018         | OES BAIRD<br>Corporation<br>USA, Model<br>DV-6 |
|          |                              | Antimony   |                       |  |
|          |                              | Bismuth  |                       |  |
|          |                              | Cadmium  |                       |  |

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### Chemical Testing (Laboratory Based)

|                                     |          |                            |  |  |
|-------------------------------------|----------|----------------------------|--|--|
|                                     |          | Chromium                   | ASTME634:2018  | OES BAIRD<br>Corporation<br>USA, Model<br>DV-6 |
|                                     |          | Copper                     |  |  |
|                                     |          | Iron                       |  |  |
|                                     |          | Lead                       |  |  |
|                                     |          | Magnesium                  |  |  |
|                                     |          | Manganese                  |  |  |
|                                     |          | Nickel                     |  |  |
|                                     |          | Silicon                    |  |  |
|                                     |          | Silver                     |  |  |
|                                     |          | Tin                        |  |  |
|                                     |          | Titanium                   |  |  |
|                                     |          | Zinc                       |  |  |
| <b>Group: Plastics &amp; Resins</b> |          |                            |  |  |
| 1.                                  | Plastics | Identification of Plastics | ASTM E 573: 2001 RA<br>2021<br>ASTM E 1252 1998 RA<br>2021 | FTIR   |

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