

Laboratory Standard<sup>s</sup> Environmental & Analytical Laboratories, K. J. Tower,  
Pathalam, Udyogamandal P. O., Ernakulam District, Kerala

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-5402

Page 1 of 27

Validity 14.10.2017 to 13.10.2019

Last Amended on 15.02.2019

| Sl.                                | Product / Material of Test   | Specific Test Performed                         | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|------------------------------------|--|---|---|--|
| <b><u>BIOLOGICAL TESTING</u></b>   |  |   |   |  |
| <b>I.</b>                          | <b>FOODS &amp; AGRICULTURAL PRODUCTS</b>   |   |   |  |
| 1.                                 | <b>Milk and milk Products: (Raw/Pasteurized/Sterilized/UHT/Condensed/Evaporated -Milk, Cheese, Butter, Dahi, Yogurt, Paneer, Khoya, Shrikhand , Dairy Whitener, Skim Milk Powder, Sweets, Ghee )</b> | Total Plate Count                               | IS 5402: 2012/ ISO4833:1991                                 | ≥ 10 cfu/g<br>≥ 1 cfu /ml              |
| USFDA (BAM) –Chapter – 3           |  |   | ≥ 10 cfu/g<br>≥ 1 cfu /ml                                   |  |
| Coliform count: Enumeration Method |  | IS 5401 Part 1 - 2012 / ISO 4832:1991           | ≥ 10 cfu/g<br>≥ 1 cfu /ml                                   |  |
|                                    |  | USFDA (BAM) –Chapter – 4                        | ≥ 10 cfu/g<br>≥ 1 cfu /ml                                   |  |
|                                    |  | USFDA (BAM) –Chapter – 4                        | ≥ 3 MPN/g or ml   |  |
| E.coli: Enumeration Method         |  | IS 5887 Part 1 -1976 (RA 2013)                  | ≥ 10 cfu/g<br>≥ 1 cfu /ml                                   |  |
|                                    |  | USFDA (BAM) –Chapter - 4                        | ≥ 10 cfu/g<br>≥ 1 cfu /ml                                   |  |
|                                    |  | USFDA (BAM) –Chapter - 4                        | ≥ 3 MPN/g or ml   |  |
| Enterobacteriaceae                 |  | IS/ISO 7402: 1993(RA 2012)                      | ≥ 10 cfu /g<br>≥ 1 cfu /ml                                  |  |
|                                    |  | USFDA (BAM) –Chapter - 4                        | ≥ 3 MPN/g or ml   |  |
| S.aureus: Enumeration Method       |  | IS 5887 Part 2 -1976 (RA 2013)                  | ≥ 10 cfu/g<br>≥ 1 cfu /ml                                   |  |
|                                    |  | USFDA (BAM) –Chapter - 12                       | ≥ 10 cfu/g<br>≥ 1 cfu /ml                                   |  |
| Salmonella spp                     |  | IS 5887 Part 3 -1999 (RA 2013) / ISO 6579: 2002 | Present or Absent/25g or ml                                 |  |
|                                    |  | USFDA (BAM) –Chapter – 5                        | Present or Absent/25g or ml                                 |  |
| Shigella spp                       | IS 5887 Part 7 -1999 (RA 2013)   | Present or Absent/25g or ml                     |   |  |
|                                    | USFDA (BAM) –Chapter - 6   | Present or Absent/25g or ml                     |   |  |

Laboratory **Standard<sup>s</sup> Environmental & Analytical Laboratories, K. J. Tower, Pathalam, Udyogamandal P. O., Ernakulam District, Kerala**

Accreditation Standard **ISO/IEC 17025: 2005**

Certificate Number **TC-5402**

Page 2 of 27

Validity **14.10.2017 to 13.10.2019**

Last Amended on **15.02.2019**

| Sl.                                 | Product / Material of Test                     | Specific Test Performed             | Test Method Specification against which tests are performed                          | Range of Testing / Limits of Detection |
|-------------------------------------|--|-------------------------------------|--|--|
|                                     |  | Bacillus cereus: Enumeration method | IS 5887 Part 6 -1999 (RA 2012)   | ≥ 10 cfu/g<br>≥ 1 cfu /ml              |
|                                     |  |                                     | USFDA (BAM) –Chapter – 14  | ≥ 10 cfu/g<br>≥ 1 cfu /ml              |
|                                     |  | Yeast and Mould                     | IS 5403: 1999(RA 2013)   | ≥ 10 cfu/g<br>≥ 1 cfu /ml              |
|                                     |  |                                     | USFDA (BAM) –Chapter – 18  | ≥ 10 cfu/g<br>≥ 1 cfu /ml              |
|                                     |  | Listeria monocytogenes              | USFDA (BAM)-Chapter-10   | Present or Absent/25g or ml            |
|                                     |  | 2.                                  | Processed foods and Canned products: (Cooked foods, Ready to eat foods, Snack items) | Total plate count                      |
| USFDA (BAM) –Chapter – 3            | ≥ 10 cfu/g<br>≥ 1 cfu /ml                      |                                     |  |  |
| Coliform count: Enumeration Method  | IS 5401 Part 1 -2012 / ISO 4832: 1991          |                                     |  | ≥ 10 cfu/g<br>≥ 1 cfu /ml              |
|                                     | USFDA (BAM) –Chapter – 4                       |                                     |  | ≥ 10 cfu/g<br>≥ 1 cfu /ml              |
| E.coli: Enumeration Method          | USFDA (BAM) –Chapter – 4                       |                                     |  | ≥ 3 MPN/g or ml                        |
|                                     | IS 5887 Part 1 -1976 (RA 2005)                 |                                     |  | ≥ 10 cfu/g<br>≥ 1 cfu /ml              |
|                                     | USFDA (BAM) –Chapter - 4                       |                                     |  | ≥ 10 cfu/g<br>≥ 1 cfu /ml              |
| S.aureus: Enumeration Method        | USFDA (BAM) –Chapter - 4                       |                                     |  | ≥ 3 MPN/g or ml                        |
|                                     | IS 5887 Part 2 -1976 (RA 2013)                 |                                     |  | ≥ 10 cfu/g<br>≥ 1 cfu /ml              |
| Bacillus cereus: Enumeration method | USFDA (BAM) –Chapter –12                       |                                     |  | ≥ 10 cfu/g<br>≥ 1 cfu /ml              |
|                                     | IS 5887 Part 6 -1999 (RA 2012)                 |                                     |  | ≥ 10 cfu/g<br>≥ 1 cfu /ml              |
| Salmonella spp                      | USFDA (BAM) –Chapter – 14                      |                                     |  | ≥ 10 cfu/g<br>≥ 1 cfu /ml              |
|                                     | IS 5887 Part 3 -1999 (RA 2013) /ISO 6579: 2002 |                                     |  | Present or Absent/25g or ml            |

Laboratory Standard<sup>s</sup> Environmental & Analytical Laboratories, K. J. Tower,  
Pathalam, Udyogamandal P. O., Ernakulam District, Kerala

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-5402

Page 3 of 27

Validity 14.10.2017 to 13.10.2019

Last Amended on 15.02.2019

| Sl. | Product / Material of Test | Specific Test Performed            | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|-----|----------------------------|------------------------------------|---|--|
|     |                            |                                    | USFDA (BAM) –Chapter – 5                                    | Present or Absent/25g or ml            |
|     |                            | Shigella spp                       | IS 5887 Part 7 -1999 (RA 2013)                              | Present or Absent/25g or ml            |
|     |                            |                                    | USFDA (BAM) –Chapter - 6                                    | Present or Absent/25g or ml            |
|     |                            | Vibrio cholerae                    | USFDA (BAM) –Chapter -09                                    | Present or Absent/25g or ml            |
|     |                            |                                    | IS 5887 Part 5 -1976 (RA 2013)                              | Present or Absent/25g or ml            |
|     |                            | Vibrio parahaemolyticus            | IS 5887 Part 5 -1976 (RA 2013)                              | Present or Absent/25g or ml            |
|     |                            |                                    | USFDA (BAM) –Chapter 09                                     | Present or Absent/50 g or ml           |
|     |                            | Enterobacteriaceae                 | IS 7402: 1993 (RA 2012)                                     | ≥ 10 cfu /g<br>≥ 1 cfu /ml             |
|     |                            | Yeast and Mould                    | IS 5403: 1999 (RA 2013)                                     | ≥ 10 cfu/g<br>≥ 1 cfu /ml              |
|     |                            |                                    | USFDA (BAM) –Chapter -18                                    | ≥ 10 cfu/g<br>≥ 1 cfu /ml              |
|     |                            | Listeria monocytogenes             | USFDA (BAM)-Chapter-10                                      | Present or Absent/25g or ml            |
| 3.  | Nut and Nut products:      | Total plate count.                 | IS 5402: 2012 / ISO 4833: 2003                              | ≥ 10 cfu/g                             |
|     |                            |                                    | USFDA (BAM) –Chapter –3                                     | ≥ 10 cfu/g                             |
|     |                            | Coliform count: Enumeration Method | IS 5401 Part 1 -2012 / ISO 4832: 1991                       | ≥ 10 cfu/g                             |
|     |                            |                                    | USFDA (BAM) –Chapter –4                                     | ≥ 10 cfu/g                             |
|     |                            |                                    | USFDA (BAM) –Chapter - 4                                    | ≥ 3 MPN/g                              |
|     |                            | E.coli: Enumeration Method:        | IS 5887 Part 1 -1976 (RA 2013)                              | ≥ 10 cfu/g                             |
|     |                            |                                    | USFDA (BAM) –Chapter - 4                                    | ≥ 10 cfu/g                             |
|     |                            |                                    | USFDA (BAM) –Chapter - 4                                    | ≥ 3 MPN/g                              |
|     |                            | S.aureus: Enumeration Method       | IS 5887 Part 2 -1976 (RA 2013)                              | ≥ 10 cfu/g                             |

Laboratory Standard<sup>s</sup> Environmental & Analytical Laboratories, K. J. Tower,  
Pathalam, Udyogamandal P. O., Ernakulam District, Kerala

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-5402

Page 4 of 27

Validity 14.10.2017 to 13.10.2019

Last Amended on 15.02.2019

| Sl. | Product / Material of Test  | Specific Test Performed                | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|-----|---|--|---|--|
|     |   | Bacillus cereus:<br>Enumeration method | USFDA (BAM) –Chapter 12                                     | ≥ 10 cfu/g                             |
|     |   |  | IS 5887 Part 6 -1999 (RA 2012)                              | ≥ 10 cfu/g                             |
|     |   | Salmonella spp                         | USFDA (BAM) –Chapter 14                                     | ≥ 10 cfu/g                             |
|     |   |  | IS 5887 Part 3 -1999 (RA 2013)/ ISO 6579: 2002              | Present or Absent/25g                  |
|     |   | Shigella spp                           | USFDA (BAM) –Chapter –5                                     | Present or Absent/25g                  |
|     |   |  | IS 5887 Part 7 -1999 (RA 2013)                              | Present or Absent/25g                  |
|     |   | Vibrio cholerae                        | USFDA (BAM) –Chapter - 6                                    | Present or Absent/25g                  |
|     |   |  | USFDA (BAM) –Chapter 09                                     | Present or Absent/25g                  |
|     |   | Vibrio parahaemolyticus                | IS 5887 Part 5 -1976 (RA 2013)                              | Present or Absent/25g                  |
|     |   |  | USFDA (BAM) –Chapter 09                                     | Present or Absent/50g                  |
|     |   | Enterobacteriaceae                     | IS/ISO 7402: 1993 (RA 2012)                                 | ≥ 10 cfu /g                            |
|     |   | Yeast and Mould                        | IS 5403: 1999 (RA 2013)                                     | ≥ 10 cfu/g                             |
|     |   |  | USFDA (BAM) –Chapter 18                                     | ≥ 10 cfu/g                             |
|     |   | Listeria monocytogenes                 | USFDA (BAM)-Chapter-10                                      | Present or Absent/25g or ml            |
| 4.  | Fruits and Vegetables :<br>(Raw, Thermally Processed or Frozen Fruits, Vegetable products, Juices and soups, Soup powders, purees | Total plate count                      | IS 5402: 2012 / ISO 4833: 2003                              | ≥ 10 cfu/g                             |
|     |   |  | USFDA (BAM) –Chapter - 3                                    | ≥ 10 cfu/g                             |
|     |   |  |   | ≥ 1 cfu/ml                             |
|     |   | Coliform count:<br>Enumeration Method: | IS 5401 Part 1 -2012 / ISO 4832: 1991                       | ≥ 10 cfu/g                             |
|     |   |  | USFDA (BAM) –Chapter –4                                     | ≥ 10 cfu/g                             |
|     |   |  | USFDA (BAM) –Chapter - 4                                    | ≥ 1 cfu/ml                             |
|     | USFDA (BAM) –Chapter - 4  | ≥ 3 MPN/g or ml                        |   |  |

Laboratory Standard<sup>s</sup> Environmental & Analytical Laboratories, K. J. Tower,  
Pathalam, Udyogamandal P. O., Ernakulam District, Kerala

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-5402

Page 5 of 27

Validity 14.10.2017 to 13.10.2019

Last Amended on 15.02.2019

| Sl. | Product / Material of Test  | Specific Test Performed             | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|-----|---|-------------------------------------|---|--|
|     | and pastes, Ketchups and Sauces, Jams, Fruit Squashes , Syrups Dates, Dry fruits Fruit Beverages Pickles) | E.coli: Enumeration Method          | IS 5887 Part 1 -1976 (RA 2013)                              | ≥ 10 cfu/g<br>≥ 1 cfu/ml               |
|     |   |                                     | USFDA (BAM) –Chapter –4                                     | ≥ 10 cfu/g<br>≥ 1 cfu/ml               |
|     |   | Enterobacteriaceae                  | IS/ISO 7402: 1993 (RA 2012)                                 | ≥ 10 cfu /g<br>≥ 1 cfu /ml             |
|     |   |                                     | S.aureus: Enumeration Method                                | IS 5887 Part 2 -1976 (RA 2013)         |
|     |   | USFDA (BAM) –Chapter 12             |   | ≥ 10 cfu/g<br>≥ 1 cfu/ml               |
|     |   | Salmonella spp                      | IS 5887 Part 3 -1999 (RA 2013)/ISO 6579: 2002               | Present or Absent/25g or ml            |
|     |   |                                     | USFDA (BAM) –Chapter –5                                     | Present or Absent/25g or ml            |
|     |   | Shigella spp                        | IS 5887 Part 7 -1999 (RA 2013)                              | Present or Absent/25g or ml            |
|     |   |                                     | USFDA (BAM) –Chapter –6                                     | Present or Absent/25g or ml            |
|     |   | Vibrio cholerae                     | USFDA (BAM) –Chapter 09                                     | Present or Absent/25g or ml            |
|     |   |                                     | IS 5887 Part 5 -1976 (RA 2013)                              | Present or Absent/25g or ml            |
|     |   | Vibrio parahaemolyticus             | IS 5887 Part 5 -1976 (RA 2013)                              | Present or Absent/25g or ml            |
|     |   |                                     | USFDA (BAM) –Chapter-09                                     | Present or Absent/50g or ml            |
|     |   | Bacillus cereus: Enumeration method | IS 5887 Part 6 -1999 (RA 2012)                              | ≥ 10 cfu/g<br>≥ 1 cfu/ml               |
|     |   |                                     | USFDA (BAM) –Chapter-14                                     | ≥ 10 cfu/g<br>≥ 1 cfu/ml               |
|     |   | Yeast and Mould                     | IS 5403: 1999 (RA 2013)                                     | ≥ 10 cfu/g<br>≥ 1 cfu/ml               |
|     |   |                                     | USFDA (BAM) –Chapter-18                                     | ≥10 cfu/g<br>≥ 1 cfu/ml                |

Laboratory Standard<sup>s</sup> Environmental & Analytical Laboratories, K. J. Tower,  
Pathalam, Udyogamandal P. O., Ernakulam District, Kerala

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-5402

Page 6 of 27

Validity 14.10.2017 to 13.10.2019

Last Amended on 15.02.2019

| Sl.                | Product / Material of Test  | Specific Test Performed                | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|--------------------|---|--|---|--|
|                    |   | Listeria monocytogenes                 | USFDA (BAM)-Chapter-10                                      | Present or Absent/25g or ml            |
| 5.                 | <b>Beverages:<br/>(Alcoholic / Non-Alcoholic,<br/>Carbonated and Non-carbonated)</b>  | Total plate count                      | IS 5402: 2012/ISO 4833: 2003                                | ≥ 1 cfu /ml                            |
|                    |   |  | USFDA (BAM) –Chapter - 3                                    | ≥1cfu/ml                               |
|                    |   | Coliform count:<br>Enumeration Method: | IS 5401 Part 1 -2012 / ISO 4832: 1991                       | ≥1cfu/ml                               |
|                    |   |  | USFDA (BAM) –Chapter –4                                     | ≥1cfu/ml                               |
|                    |   | E.coli:<br>Enumeration Method:         | IS 5887 Part 1 -1976 (RA 2013)                              | ≥ 1 cfu /ml                            |
|                    |   |  | USFDA (BAM) –Chapter –4                                     | ≥ 1 cfu /ml                            |
|                    |   |  | USFDA (BAM) –Chapter - 4                                    | < 3 to >1100 MPN/g or ml               |
|                    |   | S.aureus:<br>Enumeration Method        | IS 5887 Part 2 -1976 (RA 2013)                              | ≥ 1 cfu/ml                             |
|                    |   |  | USFDA (BAM) –Chapter 12                                     | ≥ 1 cfu/ml                             |
|                    |   | Bacillus cereus:<br>Enumeration method | IS 5887 Part 6 -1999 (RA 2012)                              | ≥ 1 cfu/ml                             |
|                    | USFDA (BAM) –Chapter-14   | ≥ 1 cfu/ml                             |   |  |
| Yeast and Mould    | IS 5403: 1999(RA 2013)  | ≥1cfu/ml                               |   |  |
|                    | USFDA (BAM) –Chapter-18   | ≥1cfu/ml                               |   |  |
| Enterobacteriaceae | IS/ISO 7402: 1993(RA 2012)  | ≥ 1 cfu /ml                            |   |  |
|                    |   | Listeria monocytogenes                 | USFDA (BAM)-Chapter-10                                      | Present or Absent/25ml                 |
| 6.                 | <b>Meat and Meat Products &amp; Fish and Sea foods products :<br/>(Raw, Frozen, Canned, Cooked – Shrimp, Prawn, Lobster, Fish, Crab, Squid, Oyster, Chicken</b> | Total plate count                      | IS 5402: 2012/ ISO 4833: 2003                               | ≥10 cfu/g                              |
|                    |   |  | USFDA (BAM) –Chapter –3                                     | ≥10 cfu/g                              |
|                    |   | Coliform count:<br>Enumeration Method  | IS 5401 Part 1 -2012/ ISO 4832: 1991                        | ≥10 cfu/g                              |
|                    |   |  | USFDA (BAM) –Chapter - 4                                    | ≥10 cfu/g                              |
|                    |   |  | USFDA (BAM) –Chapter - 4                                    | ≥ 3 MPN/g                              |
|                    |   | E.coli:<br>Enumeration Method:         | IS 5887 Part 1 -1976 (RA 2013)                              | ≥10 cfu/g                              |
|                    |   |  | USFDA (BAM) –Chapter –4                                     | ≥10 cfu/g                              |
|                    | USFDA (BAM) –Chapter - 4  | ≥ 3 MPN/g                              |   |  |

Laboratory **Standard<sup>s</sup> Environmental & Analytical Laboratories, K. J. Tower, Pathalam, Udyogamandal P. O., Ernakulam District, Kerala**

Accreditation Standard **ISO/IEC 17025: 2005**

Certificate Number **TC-5402**

Page 7 of 27

Validity **14.10.2017 to 13.10.2019**

Last Amended on **15.02.2019**

| Sl.   | Product / Material of Test                       | Specific Test Performed                | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|---|--|--|---|--|
|   | <b>and Poultry Products, Mutton, Pork, Beef)</b> | S.aureus:<br>Enumeration Method        | IS 5887 Part 2 -1976 (RA 2013)                              | ≥10 cfu/g                              |
|   |  |  | USFDA (BAM) –Chapter-12                                     | ≥10 cfu/g                              |
|   |  | Salmonella spp                         | IS 5887 Part 3 -1999 (RA 2013) ISO 6579: 2002               | Present or Absent/25g                  |
|   |  |  | USFDA (BAM) –Chapter –5                                     | Present or Absent/25g                  |
|   |  | Shigella spp                           | IS 5887 Part 7 -1999 (RA 2013)                              | Present or Absent/25g                  |
|   |  |  | USFDA (BAM) –Chapter - 6                                    | Present or Absent/25g                  |
|   |  | Vibrio cholerae                        | IS 5887 Part 5 -1976 (RA 2013)                              | Present or Absent/25g                  |
|   |  |  | USFDA (BAM) Chapter -09                                     | Present or Absent/25g                  |
|   |  | Vibrio parahaemolyticus                | IS 5887 Part 5 -1976 (RA 2013)                              | Present or Absent/25g                  |
|   |  |  | USFDA (BAM) Chapter -09                                     | Present or Absent/50g                  |
|   |  | Bacillus cereus:<br>Enumeration method | IS 5887 Part 6 -1999 (RA 2012)                              | ≥ 10 cfu/g                             |
|   |  |  | USFDA (BAM) –Chapter-14                                     | ≥ 10 cfu/g                             |
|   |  | Enterobacteriaceae                     | IS 7402: 1993 (RA 2012)                                     | ≥ 10 cfu /g                            |
|   |  | Yeast and Mould                        | IS 5403: 1999 (RA 2013)                                     | ≥10 cfu/g                              |
| USFDA(BAM)-Chapter-18   | ≥10 cfu/g  |  |   |  |
| Listeria monocytogenes  | USFDA (BAM)-Chapter-10                           | Present or Absent/25g                  |   |  |
| <b>7. Herbs, Spices and condiments:<br/>( Seasoning powder, Curry and Mixed Masala, Coriander Powder, Chilly Powder, Turmeric powder,</b> | Total plate count                                | IS 5402: 2012 / ISO 4833:2003          | ≥10 cfu/g   |  |
|   |  | USFDA (BAM) –Chapter – 3               | ≥10 cfu/g   |  |
|   | Coliform count:<br>Enumeration Method:           | IS 5401 Part 1 -2012 / ISO 4832: 1991  | ≥10 cfu/g   |  |
|   |  | USFDA (BAM )-Chapter - 4               | ≥10 cfu/g   |  |
|   |  | USFDA (BAM) –Chapter - 4               | ≥ 3 MPN/g   |  |
|   | E.coli:<br>Enumeration Method:                   | IS 5887 Part 1 -1976 (RA 2013)         | ≥10 cfu/g   |  |

Laboratory Standard<sup>s</sup> Environmental & Analytical Laboratories, K. J. Tower,  
Pathalam, Udyogamandal P. O., Ernakulam District, Kerala

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-5402

Page 8 of 27

Validity 14.10.2017 to 13.10.2019

Last Amended on 15.02.2019

| Sl.                    | Product / Material of Test                           | Specific Test Performed             | Test Method Specification against which tests are performed        | Range of Testing / Limits of Detection |
|------------------------|--|-------------------------------------|--|--|
|                        | Pepper, Dried ginger, Dried Cardamom, Cloves, Cumin) |                                     | USFDA (BAM) –Chapter –4  | ≥10 cfu/g                              |
|                        |  |                                     | USFDA (BAM) –Chapter –4  | ≥ 3 MPN/g                              |
|                        |  | S.aureus: Enumeration Method        | IS 5887 Part 2 -1976 (RA 2013)                                     | ≥10 cfu/g                              |
|                        |  |                                     | USFDA (BAM) –Chapter-12  | ≥10 cfu/g                              |
|                        |  | Salmonella spp                      | IS 5887 Part 3 -1999 (RA 2013) / ISO 6579: 2002                    | Present or Absent/25g                  |
|                        |  |                                     | USFDA (BAM) –Chapter –5  | Present or Absent/25g                  |
|                        |  | Shigella spp                        | IS 5887 Part 7 -1999 (RA 2013)                                     | Present or Absent/25g                  |
|                        |  |                                     | USFDA (BAM) –Chapter - 6   | Present or Absent/25g                  |
|                        |  | Vibrio cholerae                     | IS 5887 Part 5 -1976 (RA 2013)                                     | Present or Absent/25g                  |
|                        |  |                                     | USFDA (BAM) –Chapter –9  | Present or Absent/25g                  |
|                        |  | Vibrio parahaemolyticus             | IS 5887 Part 5 -1976 (RA 2013)                                     | Present or Absent/25g                  |
|                        |  |                                     | USFDA (BAM) –Chapter –9  | Present or Absent/50g                  |
|                        |  | Bacillus cereus: Enumeration method | IS 5887 Part 6 -1999 (RA 2012)                                     | ≥ 10 cfu/g                             |
|                        |  |                                     | USFDA (BAM) –Chapter-14  | ≥ 10 cfu/g                             |
| Enterobacteriaceae     | IS/ISO 7402: 1993 (RA 2012)                          | ≥ 10 cfu /g<br>≥ 1 cfu /ml          |  |  |
| Yeast and Mould        | IS 5403: 1999 (RA 2013)                              | ≥10 cfu/g                           |  |  |
|                        | USFDA (BAM) –Chapter-18                              | ≥10 cfu/g                           |  |  |
| Listeria monocytogenes | USFDA (BAM)-Chapter-10                               | Present or Absent/ 25g              |  |  |
| II.                    | AYUSH PRODUCTS:                                      |                                     |  |  |
| 1.                     | Ayush Products: (Arishtam, Lehyam,                   | Aerobic plate count                 | API (Part 2): 2008(1 <sup>st</sup> edition) Appendix 2, Section2.4 | ≥ 10 cfu /g<br>≥ 1 cfu /ml             |



Laboratory Standard<sup>s</sup> Environmental & Analytical Laboratories, K. J. Tower,  
Pathalam, Udyogamandal P. O., Ernakulam District, Kerala

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-5402

Page 9 of 27

Validity 14.10.2017 to 13.10.2019

Last Amended on 15.02.2019

| Sl.         | Product / Material of Test   | Specific Test Performed               | Test Method Specification against which tests are performed         | Range of Testing / Limits of Detection |
|-------------|--|---------------------------------------|---|--|
|             | <b>Bhasmam, Choornam, Lepam, Syrup, Capsule, Ghritam, Thailam and Raw Materials)</b> | Yeast and Mould                       | API (Part 2): 2008(1 <sup>st</sup> edition) Appendix 2, Section 2.4 | ≥ 10 cfu /g<br>≥ 1 cfu /ml             |
|             |  | E.coli                                | API (Part 2): 2008(1 <sup>st</sup> edition) Appendix 2, Section 2.4 | Present or Absent/1g/ml                |
|             |  | Staphylococcus aureus                 | API (Part 2): 2008(1 <sup>st</sup> edition) Appendix 2, Section 2.4 | Present or Absent/1g/ml                |
|             |  | Salmonella                            | API (Part 2): 2008(1 <sup>st</sup> edition) Appendix 2, Section 2.4 | Present or Absent/1g/ml                |
|             |  | Pseudomonas aeruginosa                | API (Part 2): 2008(1 <sup>st</sup> edition) Appendix 2, Section 2.4 | Present or Absent/1g/ml                |
| <b>III.</b> | <b>ENVIRONMENT AND POLLUTION:</b>  |                                       |   |  |
| <b>1.</b>   | <b>Air :</b>   | Aerobic Plate Count                   | APHA 5 <sup>th</sup> Edition-Chapter 3                              | ≥ 1 cfu /Plate                         |
|             |  | Yeast and Mould                       | APHA 5 <sup>th</sup> Edition- Chapter 3                             | ≥ 1 cfu /Plate                         |
| <b>2.</b>   | <b>Swab:</b>   | Total Plate Count                     | ISO 18593:2004  | ≥ 1 cfu /cm <sup>2</sup>               |
|             |  | Yeast and Mould                       |   | ≥ 1 cfu / cm <sup>2</sup>              |
|             |  | S.aureus                              |   | Absent/Swab                            |
|             |  | Coliforms                             |   | Absent/Swab                            |
|             |  | E.coli                                |   | Absent/Swab                            |
|             | Salmonella   |                                       | Absent/Swab   |  |
| <b>3.</b>   | <b>Sewage treated water:</b>   | Faecal coliform                       | IS 1622: 1981 (RA 2014)   | <2 to >1600 MPN/100ml                  |
| <b>IV.</b>  | <b>WATER:</b>  |                                       |   |  |
| <b>1.</b>   | <b>Raw water, Bore well Water, Surface water, Potable, Drinking Water</b>            | Standard Plate Count                  | IS 1622: 1981 (RA 2014)   | ≥1 cfu/ml                              |
|             |  | Coliform:                             | IS 1622: 1981 (RA 2014)   | 2 MPN/100 ml to 1600 MPN/100ml         |
|             |  | Coliforms: Membrane filtration Method | IS 1622: 1981 (RA 2014)   | Present or Absent/100 ml               |
|             |  | Faecal Coliform:                      | IS 1622: 1981 (RA 2014)   | 2 MPN/100 ml to 1600 MPN/100ml         |
|             |  | E.coli:                               | IS 1622: 1981 (RA 2014)   | 2 MPN/100 ml to 1600 MPN/100ml         |

Laboratory Standard<sup>s</sup> Environmental & Analytical Laboratories, K. J. Tower,  
Pathalam, Udyogamandal P. O., Ernakulam District, Kerala

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-5402

Page 10 of 27

Validity 14.10.2017 to 13.10.2019

Last Amended on 15.02.2019

| Sl. | Product / Material of Test | Specific Test Performed                       | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|-----|----------------------------|---|---|--|
|     |                            | Coliform:<br>Membrane filtration Method       | IS 15185: 2016  | Present or Absent/250 ml               |
|     |                            | E.coli:<br>Membrane filtration Method         | IS 15185: 2016  | Present or Absent/250 ml               |
|     |                            | Salmonella spp:<br>Membrane filtration Method | IS 15187: 2016  | Present or Absent/250 ml               |
|     |                            | Yeast and Mould                               | IS 5403: 1999 (RA 2013)                                     | Present or Absent/250 ml               |
|     |                            | Shigella spp                                  | IS 5887 Part 7 -1999 (RA 2013)                              | Present or Absent/250 ml               |
|     |                            | Vibrio cholerae                               | IS 5887 Part 5 -1976 (RA 2013)                              | Present or Absent/250 ml               |
|     |                            | Vibrio parahaemolyticus                       | IS 5887 Part 5 -1976 (RA 2013)                              | Present or Absent/250 ml               |
|     |                            | Pseudomonas aeruginosa                        | IS 13428 Annex D 2005                                       | Present or Absent/250 ml               |
| 2.  | Swimming Pool Water:       | Standard Plate Count                          | IS 3328: 1993 (RA 2013) Annexure A                          | ≥1cfu/ml                               |
|     |                            | Coliforms                                     | IS 1622: 1981 (RA 2014)                                     | 2 MPN/100 ml to 1600 MPN/100ml         |
|     |                            | Coliforms Membrane filtration Method          | IS 1622: 1981 (RA 2014)                                     | Present or Absent/ml                   |
| 3.  | Processed water:           | Standard Plate Count                          | IS 1622: 1981 (RA 2014)                                     | ≥1 cfu/ml                              |
|     |                            | Coliforms                                     | IS 1622: 1981 (RA 2014)                                     | 2 MPN/100 ml to 1600 MPN/100ml         |
|     |                            | Pseudomonas aeruginosa                        | IS 13428 Annex D 2005                                       | Present or Absent/250 ml               |

Laboratory Standard<sup>s</sup> Environmental & Analytical Laboratories, K. J. Tower,  
Pathalam, Udyogamandal P. O., Ernakulam District, Kerala

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-5402

Page 11 of 27

Validity 14.10.2017 to 13.10.2019

Last Amended on 15.02.2019

| Sl.                            | Product / Material of Test   | Specific Test Performed                            | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection          |
|--------------------------------|--|--|---|---|
| <b><u>CHEMICAL TESTING</u></b> |  |  |   |   |
| I.                             | <b>ATMOSPHERIC POLLUTION</b>                                       |  |   |   |
| 1.                             | <b>Ambient Air Quality/Work Environment and Indoor Air Quality</b> | Suspended Particulate Matter                       | IS 5182 (Part 4):1999 (RA:2014)                             | 2.0 µg/m <sup>3</sup> to 1500 µg/m <sup>3</sup> |
|                                |  | Particulate Matter (size Less than 10µm) or PM10   | IS 5182(Part 23):2006 (RA:2012)                             | 5.0 µg/m <sup>3</sup> to 1000 µg/m <sup>3</sup> |
|                                |  | Particulate Matter (size Less than 2.5µm) or PM2.5 | EPA 40 CFR Part 50 Appendix-L                               | 2.0 µg/m <sup>3</sup> to 500 µg/m <sup>3</sup>  |
|                                |  | Sulphur Dioxide as SO <sub>2</sub>                 | IS 5182 (Part 2):2001 (RA:2012)                             | 2.0 µg/m <sup>3</sup> to 100 µg/m <sup>3</sup>  |
|                                |  | Nitrogen dioxide as NO <sub>2</sub>                | IS 5182(Part 6):2006 (RA:2012)                              | 2.0 µg/m <sup>3</sup> to 200 µg/m <sup>3</sup>  |
|                                |  | Ozone as (O <sub>3</sub> )                         | IS 5182(Part 9):1974 (RA:2014)                              | 5.0 µg/m <sup>3</sup> to 1000 µg/m <sup>3</sup> |
|                                |  | Ammonia as (NH <sub>3</sub> )                      | InHouse Method: SEAAL/SOP/18<br>Issue Date : 01/15.12.2017  | 20 µg/m <sup>3</sup> to 700 µg/m <sup>3</sup>   |
|                                |  | Hydrogen Sulphide                                  | IS 5182(Part 7):1973 (RA:2014)                              | 2.0 µg/m <sup>3</sup> to 100 µg/m <sup>3</sup>  |
|                                |  | Carbon Monoxide as CO                              | IS 5182(Part 10):1999 (RA:2014).(b) Indicator Tube Method.  | 1.15 mg/m <sup>3</sup> to 100 mg/m <sup>3</sup> |
|                                |  | Lead as Pb   | IS 5182(Part 22):2004 (RA:2014)                             | 0.01 µg/m <sup>3</sup> to 10 µg/m <sup>3</sup>  |
|                                |  | Nickel as Ni                                       | USEPA Compendium method IO-3.4 Jun-1999 & IO-3.2 Jun-1999   | 5.0 ng/m <sup>3</sup> to 100 ng/m <sup>3</sup>  |
|                                |  | Arsenic as As                                      | USEPA Compendium method IO-3.4 Jun-1999                     | 0.1 ng/m <sup>3</sup> to 10 ng/m <sup>3</sup>   |

Laboratory Standard<sup>s</sup> Environmental & Analytical Laboratories, K. J. Tower,  
Pathalam, Udyogamandal P. O., Ernakulam District, Kerala

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-5402

Page 12 of 27

Validity 14.10.2017 to 13.10.2019

Last Amended on 15.02.2019

| Sl. | Product / Material of Test                                       | Specific Test Performed                     | Test Method Specification against which tests are performed    | Range of Testing / Limits of Detection                  |
|-----|--|---|--|---|
|     |  | Benzene as (C <sub>6</sub> H <sub>6</sub> ) | IS 5182(Part 11):2006 (RA 2012)                                | 4.0 µg/m <sup>3</sup> to 100 µg/m <sup>3</sup>          |
|     |  | Benzo(α)Pyrene<br>Particulate Phase only    | IS 5182(Part 12):2004 (RA:2014)                                | 0.80 ng/m <sup>3</sup> to 500 ng/m <sup>3</sup>         |
| 2.  | Stack Emission/<br>Process/Vent<br>Emissions                     | Temperature                                 | IS 11255(Part 3):2008  | 30 °C to 650 °C   |
|     |  | Velocity                                    | IS 11255(Part 3):2008  | 1.5 m/s to 60 m/s                                       |
|     |  | Volume of Gas Discharged                    | IS 11255(Part 3):2008  | 100 Nm <sup>3</sup> /hr to 40,00000 Nm <sup>3</sup> /hr |
|     |  | Particulate Matter                          | IS 11255(Part 1):1985 (RA:2014)                                | 5.0 mg/Nm <sup>3</sup> to 1000 mg/Nm <sup>3</sup>       |
|     |  | Sulphur Dioxide as SO <sub>2</sub>          | IS 11255(Part 2):1985 (RA:2014)                                | 3.0 mg/Nm <sup>3</sup> to 1500 mg/Nm <sup>3</sup>       |
|     |  | Oxides of Nitrogen as NO <sub>x</sub>       | IS 11255(Part 7):2005 (RA:2012)                                | 2.0 mg/Nm <sup>3</sup> to 750 mg/Nm <sup>3</sup>        |
|     |  | Hydrogen Sulphide                           | IS 11255(Part 4):2006 (RA:2012)                                | 2.0 mg/m <sup>3</sup> to 100 mg/m <sup>3</sup>          |
|     |  | Ammonia                                     | IS 11255(Part 6):1999 (RA:2014)                                | 5.0 mg/m <sup>3</sup> to 200 mg/m <sup>3</sup>          |
|     |  | Carbon Monoxide as CO                       | IS 13270:1992:(RA:2014)-Orsat analysis                         | 0.2 % to 5 %  |
|     |  | Carbon Dioxide as CO <sub>2</sub>           | IS 13270:1992:(RA:2014)-Orsat analysis                         | 0.2 % to 10 %   |
|     |  | Oxygen as O <sub>2</sub>                    | IS 13270:1992:(RA:2014)-Orsat analysis                         | 0.2 % to 21 %   |
|     |  | 3.  | Noise Level Monitoring   | Leq, Lmax, Lmin   |
| 4.  | Illumination Monitoring  | Illumination                                | In House Method:<br>SEAAL/SOP/16<br>Issue Date : 01/03.04.2017 | 0 to 2,00,000 LUX                                       |
| II. | WATER  |   |  |   |
| 1.  | Drinking water/<br>Surface Water/<br>Ground Water/<br>Water from | Colour                                      | IS 3025(Part 4):1983 (RA:2012)                                 | 1 Hazen to 500 Hazen                                    |
|     |  | Odour                                       | IS 3025(Part 5):1983 (RA:2012)                                 | Qualitative (Objectionable/                             |

Laboratory Standard<sup>s</sup> Environmental & Analytical Laboratories, K. J. Tower,  
Pathalam, Udyogamandal P. O., Ernakulam District, Kerala

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-5402

Page 13 of 27

Validity 14.10.2017 to 13.10.2019

Last Amended on 15.02.2019

| Sl. | Product / Material of Test              | Specific Test Performed  | Test Method Specification against which tests are performed                          | Range of Testing / Limits of Detection |
|-----|---|--|--|--|
|     | Purifiers                               |  |  | Unobjectionable)                       |
|     |   | Turbidity  | IS 3025(Part 10):1984 (RA:2012)  | 0.1 NTU to 1000 NTU                    |
|     |   | pH   | IS 3025(Part 11):1983 (RA:2012)  | 1 Unit to 14 Unit                      |
|     |   | Conductivity   | IS 3025(Part 14):1984 (RA:2013)  | 10 µs/cm to 100000 µs/cm               |
|     |   | Taste (Drinking Water only)  | IS 3025(Part 8):1984 (RA:2012)   | Qualitative (Agreeable/Disagreeable)   |
|     |   | Total Dissolved Solids   | IS 3025(Part 16):1984 (RA:2012)  | 10 mg/L to 100000 mg/L                 |
|     |   | Total Solids   | IS 3025(Part 15):1984 (RA:2014)  | 1 mg/L to 100000 mg/L                  |
|     |   | Total Hardness as CaCO <sub>3</sub>  | IS 3025(Part 21): 2009(RA:2014)  | 1 mg/L to 2500 mg/L                    |
|     |   | Calcium as Ca  | IS 3025(Part 40):1991 (RA:2014)  | 1 mg/L to 1500 mg/L                    |
|     |   | Magnesium as Mg  | IS 3025(Part 46):1994 (RA:2014)  | 1 mg/L to 1500 mg/L                    |
|     |   | Total Alkalinity as CaCO <sub>3</sub>  | IS 3025(Part 23):1986 (RA:2014)  | 1 mg/L to 2500 mg/L                    |
|     |   | Acidity as CaCO <sub>3</sub>   | IS 3025(Part 22):1986 (RA:2014)<br>APHA (23rdEdition)<br>2310-B: 2017                | 1 mg/L to 5000 mg/L                    |
|     |   | Phenolphthalein Alkalinity as CaCO <sub>3</sub>  | IS 3025 (Part 23): 1986 (RA 2014)<br>APHA (23 <sup>rd</sup> Edition)<br>2320-B: 2017 | 1 mg/L to 500 mg/L                     |
|     | Carbonate Hardness as CaCO <sub>3</sub> | IS 3025(Part 21): 2009 (RA: 2014)<br>APHA (23 <sup>rd</sup> Edition)<br>2340-A, C & 2320 B: 2017 | 1 mg/L to 5000 mg/L  |  |

**Laboratory** Standard<sup>S</sup> Environmental & Analytical Laboratories, K. J. Tower,  
Pathalam, Udyogamandal P. O., Ernakulam District, Kerala

**Accreditation Standard** ISO/IEC 17025: 2005

**Certificate Number** TC-5402

**Page 14 of 27**

**Validity** 14.10.2017 to 13.10.2019

**Last Amended on** 15.02.2019

| Sl. | Product / Material of Test | Specific Test Performed                      | Test Method Specification against which tests are performed  | Range of Testing / Limits of Detection |
|-----|----------------------------|--|--|--|
|     |                            | Non- Carbonate Hardness as CaCO <sub>3</sub> | IS 3025 (Part 21): 2009 (RA: 2014)<br>APHA (23 <sup>rd</sup> Edition)<br>2340-A, C & 2320 B: 2017      | 1 mg/L to 5000 mg/L                    |
|     |                            | Chloride as Cl <sup>-</sup>                  | IS 3025(Part 32):1988 (RA:2014)  | 1 mg/L to 2500 mg/L                    |
|     |                            | Residual Chlorine                            | IS 3025(Part 26):1986 (RA:2014)<br>APHA (23 <sup>rd</sup> Edition)<br>4500-Cl B: 2017                  | 1 mg/L to 10 mg/L                      |
|     |                            | Nitrate as NO <sub>3</sub>                   | APHA (23 <sup>rd</sup> Edition)<br>4500-NO <sub>3</sub> B: 2017  | 1 mg/L to 100 mg/L                     |
|     |                            | Nitrite as NO <sub>2</sub>                   | IS 3025(Part 34):1988 (RA:2014)<br>APHA (23 <sup>rd</sup> Edition)<br>4500-NO <sub>2</sub> B: 2017     | 0.02 mg/L to 10 mg/L                   |
|     |                            | Sulphate as SO <sub>4</sub>                  | IS 3025(Part 24):1986 (RA:2014)  | 1 mg/L to 500 mg/L                     |
|     |                            | Iron as Fe                                   | IS 3025(Part 53):2003 (RA:2014)  | 0.1 mg/L to 50 mg/L                    |
|     |                            | Fluoride as F                                | IS 3025(Part 60):2008 (RA: 2013)<br>APHA (23 <sup>rd</sup> Edition)<br>4500-F-B, D: 2017               | 0.1 mg/L to 20 mg/L                    |
|     |                            | Silica as SiO <sub>2</sub>                   | IS 3025(Part 35):1988 (RA:2014)<br>APHA (23 <sup>rd</sup> Edition)<br>4500-SiO <sub>2</sub> C, D: 2017 | 0.1 mg/L to 100 mg/L                   |
|     |                            | Dissolved Phosphate as P                     | IS 3025(Part 31):1988 (RA:2014)<br>APHA (23 <sup>rd</sup> Edition)<br>4500-P B,D: 2017                 | 0.1 mg/L to 100 mg/L                   |
|     |                            | Total Phosphate as P                         | IS 3025(Part 31):1988 (RA:2014)<br>APHA (23 <sup>rd</sup> Edition)                                     | 0.1 mg/L to 100 mg/L                   |

Laboratory Standard<sup>s</sup> Environmental & Analytical Laboratories, K. J. Tower,  
Pathalam, Udyogamandal P. O., Ernakulam District, Kerala

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-5402

Page 15 of 27

Validity 14.10.2017 to 13.10.2019

Last Amended on 15.02.2019

| Sl. | Product / Material of Test | Specific Test Performed                                | Test Method Specification against which tests are performed   | Range of Testing / Limits of Detection |
|-----|----------------------------|--|---|--|
|     |                            |  | 4500-P B,D: 2017  |  |
|     |                            | Hexavalent Chromium as Cr <sup>6+</sup>                | APHA (23 <sup>rd</sup> Edition) 3500<br>Cr B: 2017<br>IS 3025(Part 52):2003<br>(RA:2014)  | 0.2 mg/L to 100 mg/L                   |
|     |                            | Phenolic Compounds as C <sub>6</sub> H <sub>5</sub> OH | IS 3025(Part 43):1992<br>(RA:2014)<br>APHA (23 <sup>rd</sup> Edition) 5530-<br>B,C,D: 2017  | 0.01mg/L to100 mg/L                    |
|     |                            | Lead as Pb   | IS 3025(Part 47):1994<br>(RA:2014)<br>APHA (23 <sup>rd</sup> Edition)<br>3111-B: 2017   | 0.2 mg/L to 100 mg/L                   |
|     |                            | Arsenic as As  | IS 3025(Part 37):1988<br>(RA:2014)<br>APHA (23 <sup>rd</sup> Edition) 3114-C:<br>2017 APHA (23 <sup>rd</sup> Edition)<br>3120-B: 2017 | 0.002 mg/L to 10 mg/L                  |
|     |                            | Nickel as Ni   | IS 3025(Part 54):2003<br>(RA:2014)<br>APHA (23 <sup>rd</sup> Edition)<br>3111-B: 2017   | 0.1 mg/L to 100 mg/L                   |
|     |                            | Mercury as Hg  | IS 3025(Part 48):1994<br>(RA:2014)<br>APHA (23 <sup>rd</sup> Edition)<br>3112-B: 2017   | 0.002 mg/L to 10 mg/L                  |
|     |                            | Aluminum as Al   | IS 3025(Part 55):2003<br>(RA:2014)<br>APHA (23 <sup>rd</sup> Edition)<br>3111-D: 2017   | 0.2 mg/L to 100 mg/L                   |
|     |                            | Manganese as Mn  | IS 3025(Part 59):2006<br>(RA:2012)<br>APHA (23 <sup>rd</sup> Edition)<br>3111-B: 2017   | 0.05 mg/L to 100 mg/L                  |

Laboratory Standard<sup>S</sup> Environmental & Analytical Laboratories, K. J. Tower,  
Pathalam, Udyogamandal P. O., Ernakulam District, Kerala

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-5402

Page 16 of 27

Validity 14.10.2017 to 13.10.2019

Last Amended on 15.02.2019

| Sl. | Product / Material of Test     | Specific Test Performed     | Test Method Specification against which tests are performed                                       | Range of Testing / Limits of Detection |
|-----|--------------------------------|-----------------------------|---|--|
|     |                                | Copper as Cu                | IS 3025(Part 42):1992 (RA:2014)<br>APHA (23 <sup>rd</sup> Edition)<br>3111-B: 2017                | 0.05 mg/L to 100mg/L                   |
|     |                                | Cadmium as Cd               | IS 3025(Part 41):1992 (RA:2014)<br>APHA (23 <sup>rd</sup> Edition)<br>3111-B: 2017                | 0.03 mg/L to 100 mg/L                  |
|     |                                | Total Chromium as Cr        | IS 3025(Part 52):2003 (RA:2014)<br>APHA (23 <sup>rd</sup> Edition)<br>3111-B: 2017                | 0.40 mg/L to 100 mg/L                  |
| 2.  | Water for Construction Purpose | pH                          | IS 3025(Part 11):1983 (RA:2012)<br>APHA (23 <sup>rd</sup> Edition)<br>4500-H <sup>+</sup> B: 2017 | 1 to 14                                |
|     |                                | Organic Solids              | IS 3025(Part 18):1984 (RA:2012)   | 1 mg/L to 10000 mg/L                   |
|     |                                | Inorganic Solids            | IS 3025(Part 18):1984 (RA:2012)   | 1 mg/L to 10000 mg/L                   |
|     |                                | Sulphate as SO <sub>4</sub> | IS 3025(Part 24):1986 (RA:2014)<br>APHA (23 <sup>rd</sup> Edition) 4500-SO <sub>4</sub> E: 2017   | 1 mg/L to 5000 mg/L                    |
|     |                                | Chloride as Cl              | IS 3025(Part 32):1988 (RA:2014)<br>APHA (23 <sup>rd</sup> Edition)<br>4500 Cl B: 2017             | 1 mg/L to 10000 mg/L                   |
|     |                                | Suspended Matter            | IS 3025(Part 17):1984 (RA:2012)<br>APHA (23 <sup>rd</sup> Edition)<br>2540-D: 2017                | 1 mg/L to 10000 mg/L                   |



Laboratory **Standard<sup>s</sup> Environmental & Analytical Laboratories, K. J. Tower, Pathalam, Udyogamandal P. O., Ernakulam District, Kerala**

Accreditation Standard **ISO/IEC 17025: 2005**

Certificate Number **TC-5402**

Page 17 of 27

Validity **14.10.2017 to 13.10.2019**

Last Amended on **15.02.2019**

| Sl. | Product / Material of Test | Specific Test Performed  | Test Method Specification against which tests are performed  | Range of Testing / Limits of Detection       |
|-----|----------------------------|--|--|--|
|     |                            | Water Neutralization To Neutralize 100ml Sample of Water, Using Phenolphthalein as An indicator, Using 0.02N NaOH          | IS 3025(Part 22):1986 (RA:2014)  | 0.1 ml to 50 ml                              |
|     |                            | Water Neutralization To Neutralize 100ml Sample of Water, Using Mixed indicator Using 0.02N H <sub>2</sub> SO <sub>4</sub> | IS 3025(Part 23):1986 (RA:2014)  | 0.1 ml to 50 ml                              |
| 3.  | Swimming Pool Water        | pH   | IS 3025(Part 11):1983 (RA:2012)<br>APHA (23 <sup>rd</sup> Edition)<br>4500-H <sup>+</sup> B: 2017  | 1 to 14                                      |
|     |                            | Colour   | IS 3025(Part 4):1983 (RA:2012)   | 1 Hazen to 500 Hazen                         |
|     |                            | Odour  | IS 3025(Part 5):1983 (RA:2012)   | Qualitative (Objectionable/ Unobjectionable) |
|     |                            | Turbidity  | IS 3025(Part 10):1984 (RA:2012)  | 0.1 NTU to 1000 NTU                          |
|     |                            | Taste  | IS 3025(Part 8):1984 (RA:2012)   | Qualitative (Agreeable/ Disagreeable)        |
|     |                            | Total Dissolved Solids   | IS 3025(Part 16):1984 (RA:2012)  | 1.0 mg/L to 100000 mg/L                      |
|     |                            | Total Alkalinity as CaCO <sub>3</sub>  | IS 3025(Part 23):1986 (RA:2014)  | 1 mg/L to 2500 mg/L                          |
|     |                            | Chloride as Cl   | IS 3025(Part 32):1988 (RA:2014)<br>APHA (23 <sup>rd</sup> Edition)<br>4500 Cl <sup>-</sup> B: 2017 | 1 mg/L to 10000 mg/L                         |

Laboratory Standard<sup>S</sup> Environmental & Analytical Laboratories, K. J. Tower,  
Pathalam, Udyogamandal P. O., Ernakulam District, Kerala

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-5402

Page 18 of 27

Validity 14.10.2017 to 13.10.2019

Last Amended on 15.02.2019

| Sl. | Product / Material of Test | Specific Test Performed                        | Test Method Specification against which tests are performed  | Range of Testing / Limits of Detection |
|-----|----------------------------|--|--|--|
|     |                            | Residual Chlorine                              | IS 3025(Part 26):1986 (RA:2014)<br>APHA (23 <sup>rd</sup> Edition)<br>4500-Cl B: 2017                  | 1 mg/L to 10 mg/L                      |
|     |                            | Oxygen Observed in 4hrs @ 27°C                 | IS 3025(Part 63):2007 (RA: 2013)   | 0.05 mg/L to 100 mg/L                  |
|     |                            | Iron as Fe                                     | IS 3025(Part 53):2003 (RA:2014)  | 0.1 mg/L to 50 mg/L                    |
|     |                            | Lead as Pb                                     | IS 3025(Part 47):1994 (RA:2014)<br>APHA (23 <sup>rd</sup> Edition)<br>3111-B: 2017                     | 0.2 mg/L to 100 mg/L                   |
|     |                            | Aluminum as Al                                 | IS 3025(Part 55):2003 (RA:2014)<br>APHA (23 <sup>rd</sup> Edition)<br>3111-D: 2017                     | 0.2 mg/L to 100 mg/L                   |
| 4.  | Reagent Grade Water        | Specific Conductivity                          | IS 3025(Part 14):1984 (RA: 2013)<br>APHA (23 <sup>rd</sup> Edition)<br>2510-B: 2017                    | 5 µmohs/cm to 10000 µmohs/cm           |
|     |                            | pH   | IS 3025(Part 11):1983 (RA:2012)<br>APHA (23 <sup>rd</sup> Edition)<br>4500-H <sup>+</sup> B: 2017      | 1 to 14                                |
|     |                            | Total Solids Or Non Volatile Residue at 105° C | IS 3025(Part 15):1984 (RA 2014)<br>APHA (23 <sup>rd</sup> Edition)<br>2540-B: 2017                     | 1 mg/L to 100 mg/L                     |
|     |                            | Silica as SiO <sub>2</sub>                     | IS 3025(Part 35):1988 (RA:2014)<br>APHA (23 <sup>rd</sup> Edition)<br>4500-SiO <sub>2</sub> C, D: 2017 | 0.01 mg/L to 5 mg/L                    |
|     |                            | Colour Retention of KMnO <sub>4</sub> at 27° C | IS 1070:1992 (RA:2013)<br>Annexure A   | 10 min to 60 min                       |

Laboratory Standard<sup>s</sup> Environmental & Analytical Laboratories, K. J. Tower,  
Pathalam, Udyogamandal P. O., Ernakulam District, Kerala

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-5402

Page 19 of 27

Validity 14.10.2017 to 13.10.2019

Last Amended on 15.02.2019

| Sl.  | Product / Material of Test             | Specific Test Performed      | Test Method Specification against which tests are performed                        | Range of Testing / Limits of Detection |
|------|--|------------------------------|--|--|
| III. | <b>POLLUTION AND ENVIRONMENT</b>       |                              |  |  |
| 1.   | <b>Waste Water (Effluents/ Sewage)</b> | Colour                       | IS 3025(Part 4):1983 (RA:2012)   | 1 Hazen to 500 Hazen                   |
|      |  | pH                           | IS 3025(Part 11):1983 (RA:2012)  | 1 to 14                                |
|      |  | Conductivity                 | IS 3025(Part 14):1984 (RA: 2013)   | 10 µs/cm to 100000 µs/cm               |
|      |  | Temperature                  | IS 3025(Part 9):1984 (RA:2006)<br>APHA (23 <sup>rd</sup> Edition)<br>2550-B:2017   | 20 °C to 45 °C                         |
|      |  | Total Solids                 | IS 3025(Part 15):1984 (RA:2014)  | 10 mg/L to 50000 mg/L                  |
|      |  | Total Dissolved Solids       | IS 3025(Part 16):1984 (RA:2012)  | 10 mg/L to 50000 mg/L                  |
|      |  | Total Suspended Solids       | IS 3025(Part 17):1984 (RA:2012)  | 2 mg/L to 50000 mg/L                   |
|      |  | Oil & Grease                 | IS 3025(Part 39):1991 (RA:2014)  | 5 mg/L to 500 mg/L                     |
|      |  | Fixed Solids                 | IS 3025(Part 18):1984 (RA:2012)<br>APHA (23 <sup>rd</sup> Edition)<br>2540-E: 2017 | 1 mg/L to 10000 mg/L                   |
|      |  | Volatile Solids              | IS 3025(Part 18):1984 (RA:2012)<br>APHA (23 <sup>rd</sup> Edition)<br>2540-E: 2017 | 1 mg/L to 10000 mg/L                   |
|      |  | Acidity as CaCO <sub>3</sub> | IS 3025(Part 22):1986 (RA:2014)<br>APHA (23 <sup>rd</sup> Edition)<br>2310-B: 2017 | 1 mg/L to 5000 mg/L                    |

**Laboratory** Standard<sup>S</sup> Environmental & Analytical Laboratories, K. J. Tower,  
Pathalam, Udyogamandal P. O., Ernakulam District, Kerala

**Accreditation Standard** ISO/IEC 17025: 2005

**Certificate Number** TC-5402

**Page 20 of 27**

**Validity** 14.10.2017 to 13.10.2019

**Last Amended on** 15.02.2019

| Sl. | Product / Material of Test | Specific Test Performed                         | Test Method Specification against which tests are performed                                   | Range of Testing / Limits of Detection |
|-----|----------------------------|---|---|--|
|     |                            | Phenolphthalein Alkalinity as CaCO <sub>3</sub> | IS 3025(Part 23):1986 (RA:2014)<br>APHA (23 <sup>rd</sup> Edition) 2320-B: 2017               | 1 mg/L to 500 mg/L                     |
|     |                            | Total Alkalinity as CaCO <sub>3</sub>           | IS 3025(Part 23):1986 (RA:2014)<br>APHA (23 <sup>rd</sup> Edition) 2320-B: 2017               | 1 mg/L to 5000 mg/L                    |
|     |                            | Total Hardness as CaCO <sub>3</sub>             | IS 3025 (Part 21): 2009 (RA: 2014)<br>APHA (23 <sup>rd</sup> Edition) 2340-C: 2017            | 1 mg/L to 10000 mg/L                   |
|     |                            | Carbonate Hardness as CaCO <sub>3</sub>         | IS 3025(Part 21):2009 (RA:2014)<br>APHA (23 <sup>rd</sup> Edition) 2340-A, C & 2320 B: 2017   | 1 mg/L to 5000 mg/L                    |
|     |                            | Non- Carbonate Hardness as CaCO <sub>3</sub>    | IS 3025 (Part 21): 2009 (RA:2014)<br>APHA (23 <sup>rd</sup> Edition) 2340-A, C & 2320 B: 2017 | 1 mg/L to 5000 mg/L                    |
|     |                            | Calcium as Ca                                   | IS 3025(Part 40):1991 (RA:2014)   | 1 mg/L to 1500 mg/L                    |
|     |                            | Magnesium as Mg                                 | IS 3025(Part 46):1994 (RA:2014)   | 1 mg/L to 1500 mg/L                    |
|     |                            | Residual Chlorine                               | IS 3025(Part 26):1986 (RA:2014)<br>APHA (23 <sup>rd</sup> Edition) 4500-CI B: 2017            | 1 mg/L to 10 mg/L                      |
|     |                            | Chloride as Cl                                  | IS 3025(Part 32):1988 (RA:2014)   | 1 mg/L to 100000 mg/L                  |
|     |                            | Chemical Oxygen Demand (COD)                    | IS 3025(Part 58):2006 (RA:2012)   | 10 mg/L to 200000 mg/L                 |
|     |                            | Biochemical Oxygen Demand for 3 days @ 27°C     | IS 3025(Part 44):1993 (RA:2014)   | 2 mg/L to 100000 mg/L                  |

**Laboratory** Standard<sup>S</sup> Environmental & Analytical Laboratories, K. J. Tower,  
Pathalam, Udyogamandal P. O., Ernakulam District, Kerala

**Accreditation Standard** ISO/IEC 17025: 2005

**Certificate Number** TC-5402

**Page 21 of 27**

**Validity** 14.10.2017 to 13.10.2019

**Last Amended on** 15.02.2019

| Sl. | Product / Material of Test | Specific Test Performed                  | Test Method Specification against which tests are performed  | Range of Testing / Limits of Detection |
|-----|----------------------------|--|--|--|
|     |                            | Dissolved Oxygen                         | IS 3025(Part 38):1989 (RA:2014)<br>APHA (23 <sup>rd</sup> Edition)<br>4500-O-B, C: 2017                | 0.2 mg/L to 8 mg/L                     |
|     |                            | Ammonical Nitrogen as NH <sub>3</sub> -N | IS 3025(Part 34):1988 (RA:2014)<br>APHA (23 <sup>rd</sup> Edition)<br>4500-NH <sub>3</sub> B,C: 2017   | 1 mg/L to 500 mg/L                     |
|     |                            | Free Ammonia as NH <sub>3</sub>          | IS 3025(Part 34):1988 (RA:2014)<br>APHA (23 <sup>rd</sup> Edition)<br>NH <sub>3</sub> B,C: 2017        | 0.01 mg/L to 20 mg/L                   |
|     |                            | Nitrate as NO <sub>3</sub>               | APHA (23 <sup>rd</sup> Edition)<br>4500-NO3 B: 2017  | 1 mg/L to 100 mg/L                     |
|     |                            | Total Kjeldhal Nitrogen                  | IS 3025(Part 34):1988 (RA:2014)<br>APHA (23 <sup>rd</sup> Edition)<br>4500-Norg B: 2017                | 1 mg/L to 100mg/L                      |
|     |                            | Nitrite as NO <sub>2</sub>               | IS 3025(Part 34):1988 (RA:2014)<br>APHA (23 <sup>rd</sup> Edition)<br>4500-NO <sub>2</sub> B: 2017     | 0.02 mg/L to 10 mg/L                   |
|     |                            | Sulphate as SO <sub>4</sub>              | IS 3025(Part 24):1986 (RA:2014)  | 1 mg/L to 5000 mg/L                    |
|     |                            | Iron as Fe                               | IS 3025(Part 53):2003 (RA:2014)  | 0.1 mg/L to 100 mg/L                   |
|     |                            | Fluoride as F                            | IS 3025(Part 60):2008 (RA: 2013)<br>APHA (22 <sup>nd</sup> Edition)<br>4500-F-B, D: 2012               | 0.1 mg/L to 20 mg/L                    |
|     |                            | Silica as SiO <sub>2</sub>               | IS 3025(Part 35):1988 (RA:2014)<br>APHA (23 <sup>rd</sup> Edition)<br>4500-SiO <sub>2</sub> C, D: 2017 | 0.1 mg/L to 100 mg/L                   |

**Laboratory** Standard<sup>S</sup> Environmental & Analytical Laboratories, K. J. Tower,  
Pathalam, Udyogamandal P. O., Ernakulam District, Kerala

**Accreditation Standard** ISO/IEC 17025: 2005

**Certificate Number** TC-5402

**Page 22 of 27**

**Validity** 14.10.2017 to 13.10.2019

**Last Amended on** 15.02.2019

| Sl. | Product / Material of Test | Specific Test Performed                                | Test Method Specification against which tests are performed  | Range of Testing / Limits of Detection |
|-----|----------------------------|--|--|--|
|     |                            | Dissolved Phosphate as P                               | IS 3025(Part 31):1988 (RA:2014)<br>APHA (23 <sup>rd</sup> Edition)<br>4500-P B,D: 2017   | 0.1 mg/L to 100 mg/L                   |
|     |                            | Total Phosphate as P                                   | IS 3025(Part 31):1988 (RA:2014)<br>APHA (23 <sup>rd</sup> Edition)<br>4500-P B,D: 2017   | 0.1 mg/L to 100 mg/L                   |
|     |                            | Sulphide as S  | IS 3025(Part 29):1986 (RA:2014)<br>APHA (23 <sup>rd</sup> Edition)<br>4500-S F: 2017   | 1 mg/L to 100 mg/L                     |
|     |                            | Hexavalent Chromium as Cr <sup>6+</sup>                | IS 3025(Part 52):2003 (RA:2014)<br>APHA (23 <sup>rd</sup> Edition)<br>3500 Cr B: 2017  | 1.0 mg/L to 100 mg/L                   |
|     |                            | Phenolic Compounds as C <sub>6</sub> H <sub>5</sub> OH | IS 3025(Part 43):1992 (RA:2014)<br>APHA (23 <sup>rd</sup> Edition)<br>5530-B,C,D: 2017   | 0.01 mg/L to 100 mg/L                  |
|     |                            | Lead as Pb   | IS 3025(Part 47):1994 (RA:2014)<br>APHA (23 <sup>rd</sup> Edition)<br>3111-B: 2017   | 0.2 mg/L to 100 mg/L                   |
|     |                            | Arsenic as As  | IS 3025(Part 37):1988 (RA:2014)<br>APHA (23 <sup>rd</sup> Edition)<br>3114-C: 2017<br>APHA (23 <sup>rd</sup> Edition)<br>3120-B:2017 | 0.002 mg/L to 10 mg/L                  |
|     |                            | Nickel as Ni   | IS 3025(Part 54):2003 (RA:2014)<br>APHA (23 <sup>rd</sup> Edition)<br>3111-B: 2017   | 0.1 mg/L to 100 mg/L                   |

Laboratory Standard<sup>s</sup> Environmental & Analytical Laboratories, K. J. Tower,  
Pathalam, Udyogamandal P. O., Ernakulam District, Kerala

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-5402

Page 23 of 27

Validity 14.10.2017 to 13.10.2019

Last Amended on 15.02.2019

| Sl. | Product / Material of Test            | Specific Test Performed      | Test Method Specification against which tests are performed                        | Range of Testing / Limits of Detection |
|-----|---------------------------------------|------------------------------|--|--|
|     |                                       | Mercury as Hg                | IS 3025(Part 48):1994 (RA:2014)<br>APHA (23 <sup>rd</sup> Edition)<br>3112-B: 2017 | 0.002 mg/L to 10 mg/L                  |
|     |                                       | Aluminium as Al              | IS 3025(Part 55):2003 (RA:2014)  | 0.5 mg/L to 100 mg/L                   |
|     |                                       | Manganese as Mn              | APHA (23 <sup>rd</sup> Edition)<br>3111-B: 2017                                    | 0.05 mg/L to 100 mg/L                  |
|     |                                       | Copper as Cu                 | IS 3025(Part 42):1992 (RA:2014)<br>APHA (23 <sup>rd</sup> Edition)<br>3111-B: 2017 | 0.05 mg/L to 100 mg/L                  |
|     |                                       | Cadmium as Cd                | IS 3025(Part 41):1992 (RA:2014)<br>APHA (23 <sup>rd</sup> Edition)<br>3120-B: 2017 | 0.03 mg/L to 100 mg/L                  |
|     |                                       | Total Chromium as Cr         | IS 3025(Part 52):2003 (RA:2014)<br>APHA (23 <sup>rd</sup> Edition)<br>3111-B: 2017 | 0.40 mg/L to 100 mg/L                  |
| 2.  | Soil/Sediment/Sludge/Solid/Semi-Solid | pH                           | IS 10158:1982(RA:2009)   | 1 to 14                                |
|     |                                       | Conductivity                 | IS 14767:2000(RA:2016)   | 1 mS/cm to 200 mS/cm                   |
|     |                                       | Moisture                     | IS 2720(Part 2):1973 (RA:2015)   | 0.1 to 50 %                            |
|     |                                       | Organic Matter               | IS 2720(Part 22):1972 (RA:2015)  | 0.1% to 50 %                           |
|     |                                       | Total Kjeldahl Nitrogen as N | IS 14684:1999(RA:2014)   | 0.05 % to 10 %                         |
|     |                                       | Total Phosphorus as P        | IS 10158:1982(RA:2009)   | 10 mg/kg to 1000 mg/kg                 |
|     |                                       | Lead as Pb                   | EPA 3050 B Dec-1996,<br>EPA 7000B Feb-2007   | 5 mg/kg to 1000 mg/kg                  |
|     |                                       | Nickel as Ni                 | EPA 3050 B Dec-1996,<br>EPA 7000B Feb-2007   | 2.5 mg/kg to 1000 mg/kg                |

Laboratory Standard<sup>s</sup> Environmental & Analytical Laboratories, K. J. Tower,  
Pathalam, Udyogamandal P. O., Ernakulam District, Kerala

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-5402

Page 24 of 27

Validity 14.10.2017 to 13.10.2019

Last Amended on 15.02.2019

| Sl.        | Product / Material of Test   | Specific Test Performed  | Test Method Specification against which tests are performed                                 | Range of Testing / Limits of Detection |
|------------|--|--------------------------|---|--|
|            |  | Manganese as Mn          | EPA 3050 B Dec-1996,<br>EPA 7000B Feb-2007  | 1.5 mg/kg to 1000 mg/kg                |
|            |  | Copper as Cu             | EPA 3050 B Dec-1996,<br>EPA 7000B Feb-2007  | 1.5 mg/kg to 1000 mg/kg                |
|            |  | Cadmium as Cd            | EPA 3050 B Dec-1996,<br>EPA 7000B Feb-2007  | 1.0 mg/kg to 100 mg/kg                 |
| <b>IV.</b> | <b>FOOD AND AGRICULTURAL PRODUCTS</b>  |                          |   |  |
| <b>1.</b>  | <b>Dairy &amp; Dairy Products (Raw &amp; Processed Milk, Curd, Paneer, Cheese, Dairy Based confectioneries Evaporated /Condensed Butter, Ice cream and other dairy products, Infant milk food)</b> | Moisture                 | FSSAI Manual-Milk and Milk Product-2016, 10.2, pp 86-87                                     | 0.5 95 g/100g to 95 g/100g             |
|            |  | Total ash                | IS: 1165: 2002 (RA:2013)/<br>FSSAI Manual-Milk and Milk Product-2016, 10.7 pp 90-91         | 0.2 g/100g to 10 g/100g                |
|            |  | Ash insoluble in Dil.HCl | FSSAI Manual-Milk and Milk Product-2016, 10.8 pp 91-92                                      | 0.1 g/100g to 5 g/100g                 |
|            |  | Protein                  | IS 1479(Part 2): 1961 (RA:2013)<br>FSSAI Manual-Milk and Milk Product-2016, 19.1 pp 166-172 | 0.5 g/100g to 80 g/100g                |
|            |  | Fat                      | IS: 11721:2013<br>FSSAI Manual-Milk and Milk Product-2016,10.3 p88                          | 0.5 g/100g to 100 g/100g               |
|            |  | Total Solids             | FSSAI Manual-Milk and Milk Product-2016, 1.3.3 pp36-37                                      | 5.0 g/100g to 100 g/100g               |
|            |  | Solid Not Fat            | FSSAI Manual-Milk and Milk Product-2016, 15.2 p 138   | 5.0 g/100g to 100 g/100g               |
|            |  | Titration acidity        | IS: 1165: 2002<br>FSSAI Manual-Milk and Milk Product-2016, 10.4 pp 88-89                    | 0.5 g/100g to 40 g/100g                |
|            |  | pH                       | IS 3507: 1966 (RA:2013)   | 1 to 14                                |
| <b>2.</b>  | <b>Fruit and vegetable products (Fresh and</b>   | Moisture                 | FSSAI Manual-Fruit and Vegetable Product-2016, 4.1 pp 34-35                                 | 0.5 g/100g to 95 g/100g                |



Laboratory Standard<sup>s</sup> Environmental & Analytical Laboratories, K. J. Tower,  
Pathalam, Udyogamandal P. O., Ernakulam District, Kerala

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-5402

Page 25 of 27

Validity 14.10.2017 to 13.10.2019

Last Amended on 15.02.2019

| Sl. | Product / Material of Test  | Specific Test Performed  | Test Method Specification against which tests are performed  | Range of Testing / Limits of Detection |
|-----|---|--------------------------|--|--|
|     | thermally processed fruit and vegetable products, canned fruit, fruit concentrate, pulps, Beverages, sauces, beverages, jam, jelly, Pickels | Total Ash                | FSSAI Manual-Fruit and Vegetable Product-2016, 11.3 pp 41-42   | 0.5 g/100g to 15 g/100g                |
|     |   | Ash insoluble in Dil.HCl | FSSAI Manual-Fruit and Vegetable Product-2016, 5.3 pp 35-36  | 0.1 g/100g to 5 g/100g                 |
|     |   | Acidity as acetic acid   | IS: 2860:1964 (RA: 2008)<br>FSSAI Manual-Fruit and Vegetable Product-2016 2.4, pp 12-14              | 0.1 g/100g to 5 g/100g                 |
|     |   | Protein                  | FSSAI Manual-Fruit and Vegetable Product-2016.   | 0.5 g/100g to 20 g/100g                |
| 3.  | Meat and meat products & Fish & Fish products   | Moisture                 | FSSAI Manual-Meat & Meat and Fish & Fish Product-2016, 2.2 p 59                                      | 0.5 g/100g to 70 g/100g                |
|     |   | Protein                  | IS 5960(Part1):1996 (RA:2009)<br>FSSAI Manual-Meat & Meat and Fish & Fish Product-2016, 2.2 pp 38-39 | 0.5 g/100g to 85 g/100g                |
|     |   | Total Fat                | FSSAI Manual-Meat & Meat and Fish & Fish Product-2016, 2.1 p 38                                      | 0.5 g/100g to 65 g/100g                |
| 4.  | Nut and Nut products (Ground nut kernel, Pistacho, Almond , cashew kernel. Walnut, dry fruits and dates)                                    | Moisture                 | IS 4684:1975 (RA:2010)   | 1 g/100g to 25 g/100g                  |
|     |   | Total Ash                | IS 4684:1975 (RA:2010)   | 0.1 g/100g to 15 g/100g                |
|     |   | Total Fat                | IS 4684:1975 (RA:2010)   | 1 g/100g to 65 g/100g                  |
|     |   | Acid insoluble ash       | IS 4684:1975 (RA:2010)   | 0.01 g/100g to 2.5 g/100g              |
|     |   | Protein                  | IS 4684:1975 (RA:2010)   | 0.2 g/100g to 75 g/100g                |

Laboratory **Standard<sup>s</sup> Environmental & Analytical Laboratories, K. J. Tower, Pathalam, Udyogamandal P. O., Ernakulam District, Kerala**

Accreditation Standard **ISO/IEC 17025: 2005**

Certificate Number **TC-5402**

**Page 26 of 27**

Validity **14.10.2017 to 13.10.2019**

**Last Amended on 15.02.2019**

| Sl. | Product / Material of Test   | Specific Test Performed  | Test Method Specification against which tests are performed                    | Range of Testing / Limits of Detection |
|-----|--|--------------------------|--|--|
| 5.  | <b>Cereal &amp; Pulses(Atta, maida, Suji, Rawa, Barley, Whaat, maize, Jawar, Lentils, Urd, Moong, Channa, Rice, Oats, Beans, Corn Products, Custard, Macaroni)</b>   | Moisture                 | IS:7874(Part 1):1975 (RA:2014)   | 1 g/100g to 20 g/100g                  |
|     |  | Acid insoluble ash       | IS:7874(Part 1):1975 (RA:2014)   | 0.05 g/100g to 10 g/100g               |
|     |  | Total ash                | IS:7874(Part 1):1975 (RA:2014)   | 0.5 g/100g to 10 g/100g                |
|     |  | Protein                  | IS:7874(Part 1):1975 (RA:2014)   | 0.2 g/100g to 90 g/100g                |
|     |  | Fat                      | IS:7874(Part 1):1975 (RA:2014)   | 0.5 g/100g to 20 g/100g                |
| 6.  | <b>Spices and Condiments (Caraway, Cardamom, Whole Chilli, Capsicum, Cinnamon, Mace, Cassia, Coriander, Pepper Nutmeg, Mustard, (black &amp; white) , Poppy, Turmeric, curry powder, Mixed masala, aniseed and ajowan)</b> | Moisture                 | IS: 1797:1985 (RA: 2013) FSSAI Manual-Spices and Condiments-2016, 3.0 pp 2-5   | 1.0 g/100g to 50 g/100g                |
|     |  | Total ash                | IS: 1797:1985 (RA: 2013) FSSAI Manual-Spices and Condiments-2016, 4.0 pp 12-13 | 0.5 g/100g to 20 g/100g                |
|     |  | Ash Insoluble in Dil.HCl | IS: 1797:1985 (RA: 2013) FSSAI Manual-Spices and Condiments-2016, 5.0 p 14     | 0.1 g/100g to 5 g/100g                 |
| 7.  | <b>Oils And Fats (Including Ground nut/ Sesame/ Linseed oil/Mahua Rape-seed/ Coconut/ Corn/ Rice bran/ Sunflower / Mustard oil/Soya bean Oil/</b>  | Moisture                 | IS: 548(Part 1):1964 (RA:2015) FSSAI Manual-Oils and Fats-2016, 3.1, pp 5-6    | 0.01 g/100g to 5 g/100g                |
|     |  | Peroxide Value           | IS: 548(Part 1):1964 (RA:2015)   | 1 meq/Kg to 100 meq/Kg                 |
|     |  | Specific gravity         | IS: 548(Part 1):1964 (RA:2015)   | 0.5 to 1.5                             |
|     |  | Iodine Value             | IS: 548(Part 1):1964 (RA:2015)   | 5 to 250                               |

**Laboratory** Standard<sup>s</sup> Environmental & Analytical Laboratories, K. J. Tower,  
Pathalam, Udyogamandal P. O., Ernakulam District, Kerala

**Accreditation Standard** ISO/IEC 17025: 2005

**Certificate Number** TC-5402

**Page 27 of 27**

**Validity** 14.10.2017 to 13.10.2019

**Last Amended on** 15.02.2019

| Sl. | Product / Material of Test                           | Specific Test Performed | Test Method Specification against which tests are performed                      | Range of Testing / Limits of Detection |
|-----|--|-------------------------|--|--|
|     | Ghee/Fish oil/Palmolein/<br>Palm kernel//Poppy seed) |                         | FSSAI Manual-Oils and Fats-2016, 12.0 pp 26-30                                   |  |
|     |  | Saponification Value    | IS: 548(Part 1):1964 (RA:2015)<br>FSSAI Manual-Oils and Fats-2016, 9.0, pp 18-20 | 50 to 400                              |
|     |  | Acid Value              | IS: 548(Part 1):1964 (RA:2015)<br>FSSAI Manual-Oils and Fats-2016, 1.0, pp 23-25 | 0.50 to 100                            |