



## TECHNICAL DATA SHEET

TDS-ASD-632 | Rev. 1.0  
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# Litmus Indicator, Pure

Catalog No. ASD-632 | CAS 1393-92-6 | Colour Index CI 1242

**For Laboratory Use Only — Not for Human or Veterinary Use**

## 1. Product Identification

|                          |   |
|--------------------------|---|
| <b>Product Name</b>      | Litmus Indicator, Pure  |
| <b>Catalog Number</b>    | ASD-632   |
| <b>CAS Number</b>        | 1393-92-6   |
| <b>Colour Index</b>      | CI 1242   |
| <b>Alternative Names</b> | Lichen Blue; Lacmus   |
| <b>Grade</b>             | Laboratory Reagent / Indicator Grade                                      |
| <b>Origin</b>            | Natural — extracted from lichens (Roccella tinctoria and related species) |
| <b>Supplier</b>          | AuSaMicS Pty Ltd  |
| <b>Address</b>           | 31 Longview CT, Thomastown VIC 3074, Australia                            |
| <b>ABN</b>               | 56 676 640 467  |
| <b>Phone</b>             | +61 412 520 598   |
| <b>Email</b>             | support@ausamics.com  |
| <b>Website</b>           | www.ausamics.com.au   |

## 2. Physical & Chemical Properties

|                             |   |
|-----------------------------|---|
| <b>Appearance</b>           | Dark blue to dark purple free-flowing powder  |
| <b>Odour</b>                | Odourless to faintly earthy                   |
| <b>Solubility</b>           | Soluble in water; slightly soluble in ethanol |
| <b>pH (1% aq. solution)</b> | ~7.0 (neutral; purple colour)                 |



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|                            |  |
|----------------------------|--|
| <b>Loss on Drying</b>      | < 7.0% (110 °C, 2 h)                                     |
| <b>Ash Content</b>         | ~22% (inorganic mineral residue)                         |
| <b>pH Transition Range</b> | pH 5 (Red) → pH 8 (Blue)                                 |
| <b>Colour Intensity</b>    | $A_{600} \geq 0.15$ (0.1% aqueous solution)              |
| <b>Storage Temperature</b> | < 25 °C, cool and dry; tightly sealed container          |
| <b>Shelf Life</b>          | 3 years from manufacture date when stored as recommended |

### 3. Mechanism of Action

Litmus undergoes a reversible colour change driven by protonation and deprotonation of its chromophoric constituents, principally 7-hydroxyphenoxazone derivatives. In acidic conditions (pH < 5), the protonated form predominates, producing a red colour. At neutral pH (~7), a purple equilibrium mixture is observed. In alkaline conditions (pH > 8), the deprotonated form predominates, producing a blue colour. This transition is fully reversible upon pH adjustment.

|                         |   |
|-------------------------|---|
| <b>Target</b>           | Proton ( $H^+$ ) activity in aqueous solution                 |
| <b>Transition Range</b> | pH 5 (red) → pH 7 (purple) → pH 8 (blue)                      |
| <b>Reversibility</b>    | Fully reversible — no degradation upon pH cycling             |
| <b>Mechanism</b>        | Protonation/deprotonation of 7-hydroxyphenoxazone chromophore |

### 4. Research & Industrial Applications

| Application Area        | Details  |
|-------------------------|--|
| Acid-Base Testing       | Standard qualitative indicator; teaching pH concepts in educational settings     |
| Indicator Solutions     | Neutral litmus solution (purple) — turns red in acid, blue in alkali             |
| Litmus Paper Production | Raw material for producing Red, Blue, and Neutral pH indicator strips            |
| Litmus Milk Media       | pH and redox indicator for bacterial differentiation (e.g. lactose fermentation) |
| Microbiological Media   | Component in selective and differential bacteriological media formulations       |

### 5. Quality Specifications



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| Test             | Method                                      | Specification       |
|------------------|---|---------------------|
| pH of Solution   | Potentiometry (1% aq., 20 °C)               | 7.0 ± 0.5           |
| Transition Range | Buffer series titration                     | pH 5 to pH 8        |
| Loss on Drying   | Gravimetric (110 °C, 2 h)                   | < 7.0%              |
| Ash Content      | Gravimetric (550 °C, 4 h)                   | 18 – 26%            |
| Colour Intensity | UV-Vis 600 nm (0.1% solution)               | $A_{600} \geq 0.15$ |
| Solubility       | Dissolution (1 g / 100 mL H <sub>2</sub> O) | Soluble             |

### 6. Storage & Handling

|                          |  |
|--------------------------|--|
| <b>Storage</b>           | Store in a tightly closed container at < 25 °C. Protect from moisture and direct sunlight.             |
| <b>PPE Required</b>      | Nitrile gloves, safety glasses, laboratory coat. Avoid inhalation of dust.                             |
| <b>Incompatibilities</b> | Strong oxidising agents; bleaching agents; concentrated acids and alkalis.                             |
| <b>Disposal</b>          | Dilute small quantities and dispose via drain (check local regulations).<br>Bulk: licensed contractor. |

### 7. Regulatory Information

|                           |   |
|---------------------------|---|
| <b>SUSMP Schedule</b>     | Not scheduled — not a controlled substance                                  |
| <b>AICS Status</b>        | Listed on Australian Inventory of Chemical Substances (AICS)                |
| <b>WHS Classification</b> | Not classified as hazardous under Safe Work Australia Model WHS Regulations |
| <b>GHS</b>                | Not classified as hazardous under GHS                                       |
| <b>Transport</b>          | Not classified as Dangerous Goods (ADG, IATA, IMDG)                         |

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