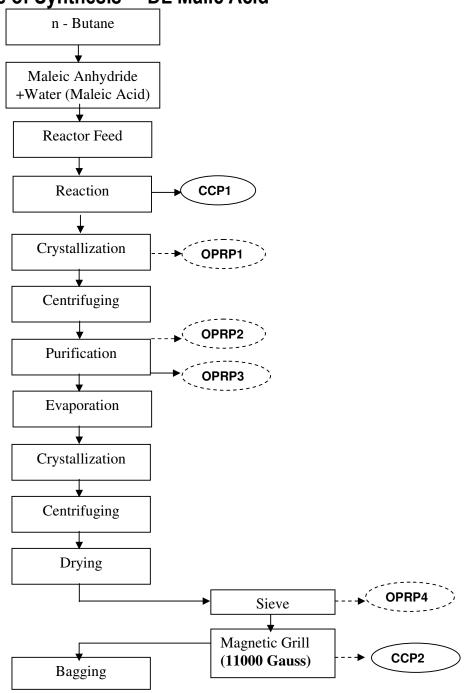
(AN ISO 9001, 14001, 45001, 50001 & FSSC 22000 CERTIFIED COMPANY) CIN: L24100MH1972PLC016149 25-A, SIPCOT INDUSTRIAL COMPLEX RANIPET 632 403, TAMILNADU, INDIA PHONE: +91 - 4172 - 244441, 2, 6,

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Date: 01 January 2023

## Brief Manufacturing Process / Process Flow Diagram / Route of Synthesis – DL Malic Acid



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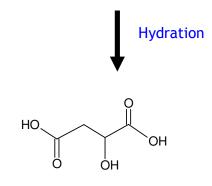
## **Brief Manufacturing Process:**

DL Malic acid is manufactured by the hydration of Maleic acid.

## **Reaction Scheme:**

$$\begin{array}{c} O \\ O \\ O \\ \end{array} \begin{array}{c} + \text{ H}_2\text{O} \\ \end{array} \begin{array}{c} \text{COOH} \\ \text{HOOC} \\ \end{array}$$

$$\begin{array}{c} \text{Maleic Anhydride} \\ \end{array} \begin{array}{c} \text{DM Water} \\ \end{array} \begin{array}{c} \text{Maleic Acid} \\ \end{array}$$



DL Malic Acid

**Note:** No Reagent/Solvent is used in the process except Dematerialized water No Metal is used in the Manufacturing Process

The Purishe.

Signature:

Name: K. Punidha

Designation: Head - Quality Assurance

Company Seal:



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