Based on the provided information, here are the specific unit operations and their associated operating conditions for the production of Ambroxol:

1. **Solid-State Reaction (SSR Reaction):**

- **Unit Operation**: Solid-state reaction.

- **Operating Conditions**:

- Temperature: Typically conducted at elevated temperatures suitable for solid-state reactions.

- Pressure: Atmospheric pressure.

- Mixing Time: As per reaction kinetics.

- Residence Time: As per reaction kinetics.

- Catalysts: Not specified.

- **Input**:

- 2-Amino-3,5-dibromobenzaldehyde

- Trans-4-Aminocyclohexanol

- Toluene

- **By-Product**: None specified.

2. **Centrifuge (Toluene MLR)**:

- **Unit Operation**: Centrifugation.

- **Operating Conditions**:

- Rotation Speed: Sufficient to separate the desired product from the toluene mixture.

- Time: As required for complete separation.

- **Input**: Toluene mixture.

- **By**-**Product**: Toluene sold to an authorized party.

3. **Sodium Borohydride and Water (Ambroxol stage-I)**:

- **Unit Operation:** Reaction with sodium borohydride and water.

- **Operating Conditions**:

- Temperature: Reaction temperature suitable for the specific chemistry involved.

- Pressure: Atmospheric pressure.

- Reaction Time: As per reaction kinetics.

- **Input**:

- Sodium borohydride

- Water

- Intermediate compounds

- **By-Product**: Waste water sent to Effluent Treatment Plant (ETP).

4. **Methanol and Charcoal (GLR):**

- **Unit Operation**: Reaction with methanol and charcoal.

- **Operating Conditions**:

- Temperature: Reaction temperature suitable for the specific chemistry involved.

- Pressure: Atmospheric pressure.

- Reaction Time: As per reaction kinetics.

- **Input**:

- Methanol

- Charcoal

- Intermediate compounds

- **By-Product**: Spent carbon (filtered charcoal).

5. **Concentration (Conc. Hel.):**

- **Unit Operation**: Concentration.

- **Operating Conditions**:

- Temperature: Controlled temperature to evaporate solvent (if any) from the solution.

- Pressure: Atmospheric pressure.

- Evaporation Rate: Controlled as per concentration requirements.

- **Input**: Ambroxol HCl solution.

- **By**-**Product**: None specified.

6. **Drying**:

- **Unit Operation**: Drying.

- **Operating Conditions**:

- Temperature: Controlled temperature suitable for drying the product.

- Pressure: Atmospheric pressure.

- Drying Time: As per drying kinetics.

- **Input**: Ambroxol HCl solution.

- **By-Product**: Ambroxol HCl (final product).