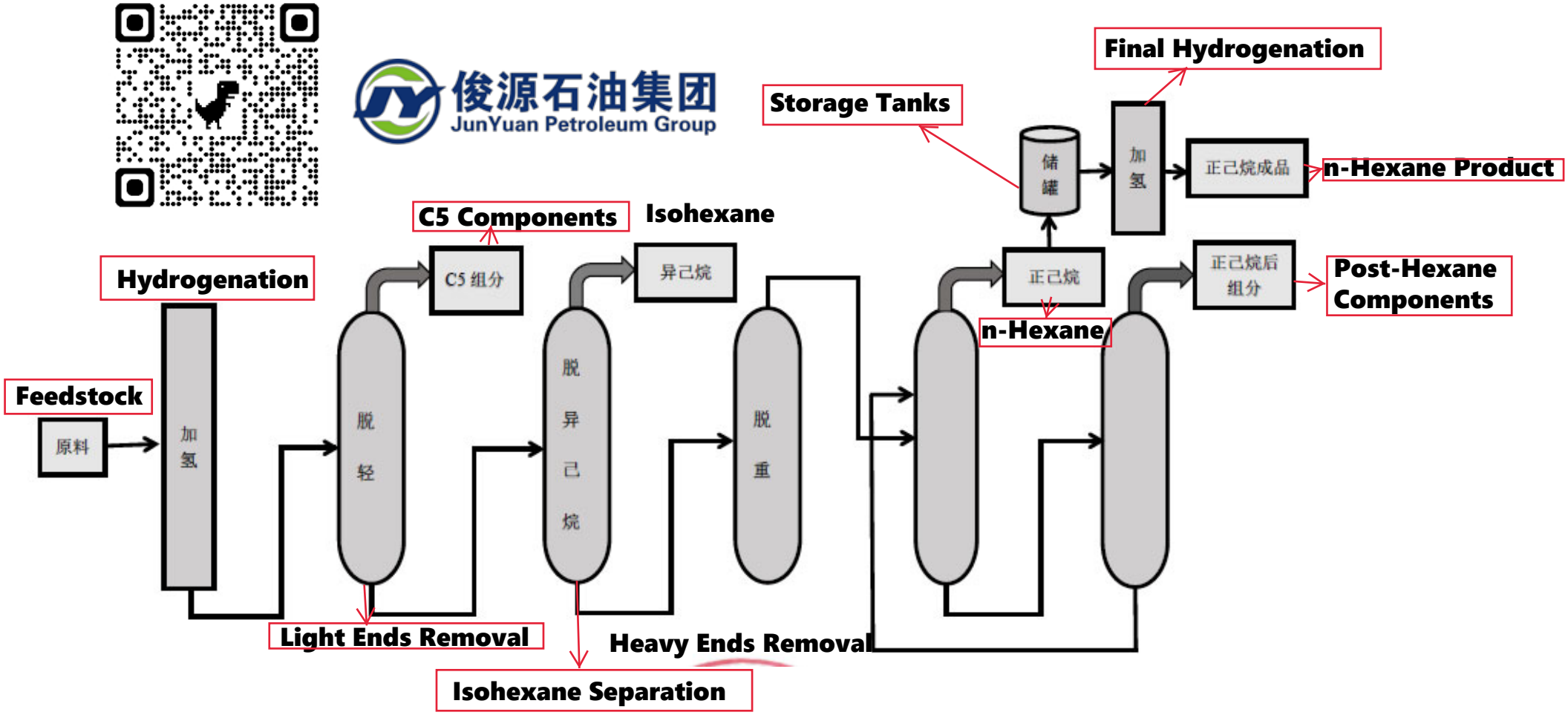

Process Flow Diagram Explanation for n-Hexane Production

The provided flowchart outlines the production process of **n-Hexane**, a key hydrocarbon solvent. Below is an English explanation of each step:

1. **Feedstock (原料)**
   - The process begins with raw hydrocarbon feedstock, typically derived from petroleum refining or natural gas processing.
2. **Hydrogenation (加氢)**
   - The feedstock undergoes **hydrogenation** to saturate unsaturated hydrocarbons (e.g., alkenes) and remove impurities like sulfur.
3. **Light Ends Removal (脱轻)**

- Lighter hydrocarbons (e.g., C4-C5) are separated through distillation or stripping to isolate the desired C6 fraction.

4. **C5 Components (C5组分)**
   - The removed **C5 fraction** (e.g., pentanes) is either further processed or sent for other uses.
5. **Isohexane Separation (异己烷 & 脱异己烷)**
   - The C6 stream contains **isohexane (branched C6 isomers)**, which is separated (脱异己烷) to improve n-Hexane purity.
6. **Heavy Ends Removal (脱重)**
   - Heavier hydrocarbons (C7+) are removed via distillation to prevent contamination.
7. **Storage (储罐)**
   - The purified n-Hexane is temporarily stored before final processing or distribution.
8. **Final Hydrogenation (加氢)**
   - An optional secondary hydrogenation ensures complete saturation and purity.
9. **n-Hexane Product (正己烷成品)**
   - The final **n-Hexane** product meets industry specifications for solvents or chemical synthesis.
10. **Post-Hexane Components (正己烷后组分)**
    - Residual streams (e.g., remaining isomers or heavies) may be recycled or repurposed.

Key Notes:

- The process emphasizes **separation (distillation) and purification (hydrogenation)** to achieve high-purity n-Hexane.
- Branched isomers (e.g., isohexane) are removed to meet linear alkane requirements.