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A graph theory-based methodology for vulnerability assessment of supply chains using the life cycle inventory database

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Highlights:

- We develop a methodology for vulnerability assessment of supply chains.
- Raw material-to-product links and overall chain are modeled by a directed graph.
- We use a life cycle inventory database as a data source for supply chain analysis.
- Vulnerability indicators are determined on the basis of market concentration.
- We identify bottleneck raw materials in supply chains of Japanese synthetic resins.

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