**Perovskite-type crystal**

* A ceramic crystal known as a high-temperature superconductor.

~ Schematic diagram ~

- **Platinum (Pt)**
  - Super Intelligent Catalyst
  - Oxidation
  - Reduction
- **Rhodium (Rh)**
  - Oxidation
  - Reduction
- **Palladium (Pd)**
  - Utilised in Intelligent Catalyst
  - Oxidation
  - Reduction

* A site: Lanthanum
* B site: Iron
* B site: Palladium
* O: Oxygen (a valence of -2)

**Catalyst’s purifying performance vs. travel distance**

Lifetime of a vehicle

**Comparison of precious metal conditions in vehicle lifetime**

- **Super Intelligent Catalyst**
  - Atomic-level compound
  - Segregation of metal nano-particles
  - Restored to atomic level
  - Self-regeneration
- **Conventional Catalyst**
  - Catalytic precious metal
  - Conventional ceramic
  - Enlargement of precious metal
  - Further enlargement and deterioration

Perovskite-type ceramic

<table>
<thead>
<tr>
<th>Lifetime of a vehicle distance)</th>
<th>Oxidation ambience (initial condition)</th>
<th>Reduction ambience</th>
<th>Acidic ambience</th>
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<tbody>
<tr>
<td>Good</td>
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