

Background

Thermosetting resins

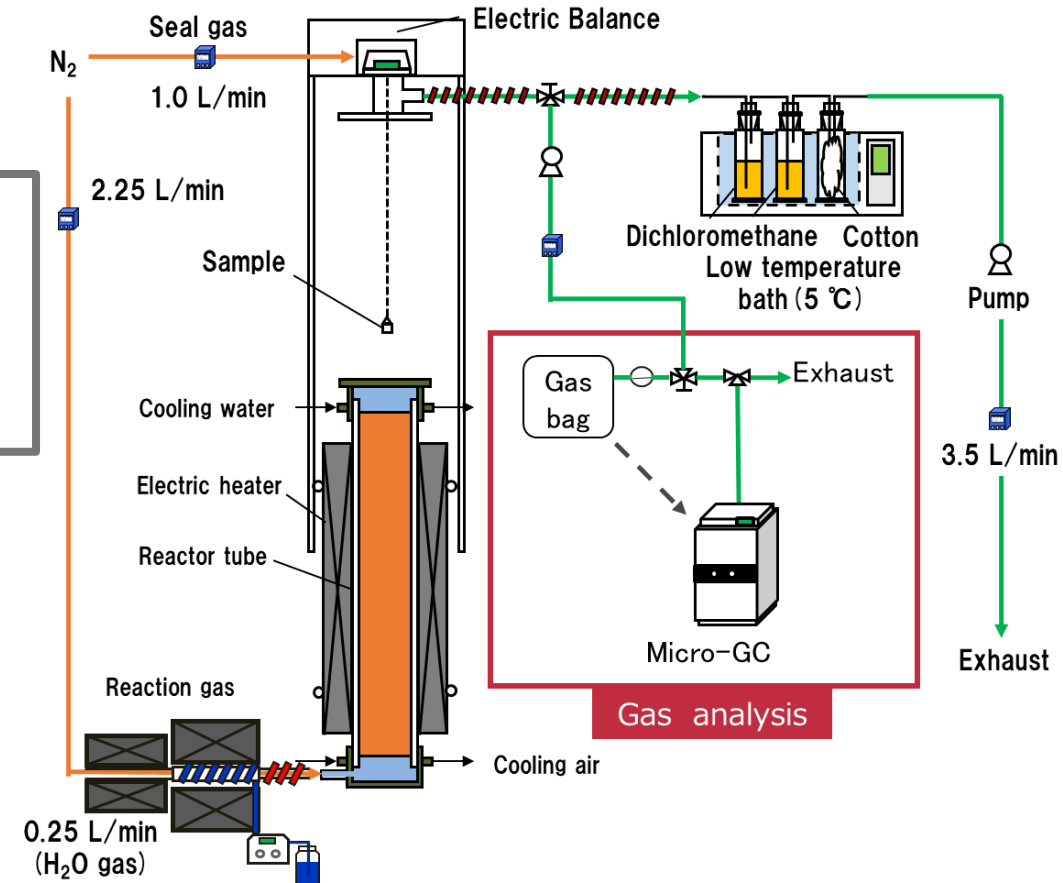
Cross-linked by heating and cured at about 120-300°C

Focus on rubber residues from the manufacturing process

Lower heating value

	Coal	Oil	Rubber
LHV (MJ/kg)	24.7※	39.1※	33.9

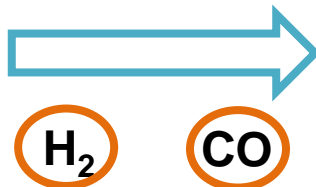
✓ High energy density → Efficient use is important



Use of Rubber Residue

Issue : Small waste volume

Gasification



Chemical Use

Synthesis of organic compounds by C1 chemistry from H₂ and CO produced by gasification

Purpose and Contents

Purpose

- Elucidation of steam gasification behavior of natural rubber
- Elucidation of formation behavior of tar and soot by steam gasification

Contents

Steam gasification experiment using vertical batch furnace

Reaction Process

- ① Pyrolysis (volatile only)
- ② Steam gasification - char (fixed carbon only)
- ③ Steam gasification - overall (volatile + fixed carbon)

Measurements

1. Sample mass change
2. Product gas yield analysis
3. Product tar and soot mass measurement