

Study on the chemical treatment method of used sodium(Na)

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In Korea Atomic Energy Research Institute (KAERI), various experiments using sodium (Na), a coolant for SFR, have been conducted since 2013 in accordance with legal procedures. Sodium is highly chemically active and there is a possibility that the product accompanying the chemical reaction may ignite or explode, so it is essential to study how to treat the sodium used in the experiment.

Treatment of used sodium is divided into physical treatment and chemical treatment, and the latter is performed by the following methods

1. Water(vapor) treatment method
2. Alcohol treatment method
3. Ammonia treatment method
4. Combustion treatment method
5. CO₂ gas treatment method
6. Na-NaOH conversion treatment method

In this paper, the applicability of the treatment method under study at KAERI and its results are analyzed, and the experimental equipment for Na-NaOH conversion treatment is described.