

Detection Method for Toxicity of REESS Leakage Products

China
2019.06

Research Contents of Toxic Smoke

(1) Analysis of Toxic Smoke Components

- Mechanism of toxic smoke generation
- Different Cathode/Anode material
- Different temperature

(2) Test and Evaluation of Toxic Smoke

- Detection Method of L1
- Detection Method of L2
- Quantitative Evaluation of L3

(3) Toxic Smoke Suppression Method

- Emergency Treatment of Toxic Smoke Leakage
- Design of Reducing Toxic Smoke Generation
- Design of Toxicity Reduction

Research progress

- **China is carrying out the research on Analysis of Toxic Smoke Components.**
- The testing capability for cells has been completed and China is carrying out the research work. Results will be shown in the next meeting.
- The reaction tank for pack level testing is under construction and expected to be completed by the end of the year.

Research progress

□ Laboratory requirements

■ Monitoring facilities

- Environmental monitoring equipment
- Video monitoring equipment
- Laboratory display equipment
- Data storage device

■ Ventilation

■ Fire procedure and equipment

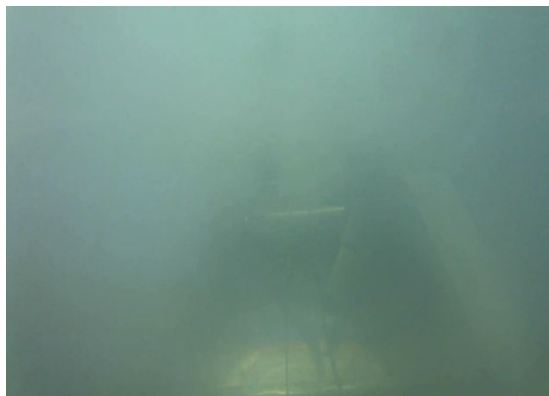
- Put out a fire
- Quarantine
- Cooling

■ Individual protective equipment



□ Scope of instruments and equipments

- Battery chargers and dischargers
- Video recorder
- Combustion chamber
- Electric heating chamber
- Gases analyzer
- GC-Mass
- CO detector
- HF detector
- Composite gas detector
- Solid smoke detector



□ Trigger method

■ Flame trigger

- Place the cell with good charging state in combustion chamber, fixed, and ignited to trigger the thermal runaway.
- Position of the cell in contact with flame: front end of soft-pack battery, sealing position of the 18650 battery.

■ Electric heating trigger

- Place the cell with good charging state in combustion chamber, fixed, and use electric heating to trigger the thermal runaway.
- Thermal runaway trigger reference conditions
 - Programmed heating conditions
 - heating rate: 3°C-10°C/min
 - Heating plate to 150°C-180 °C



Thanks for your attention!