

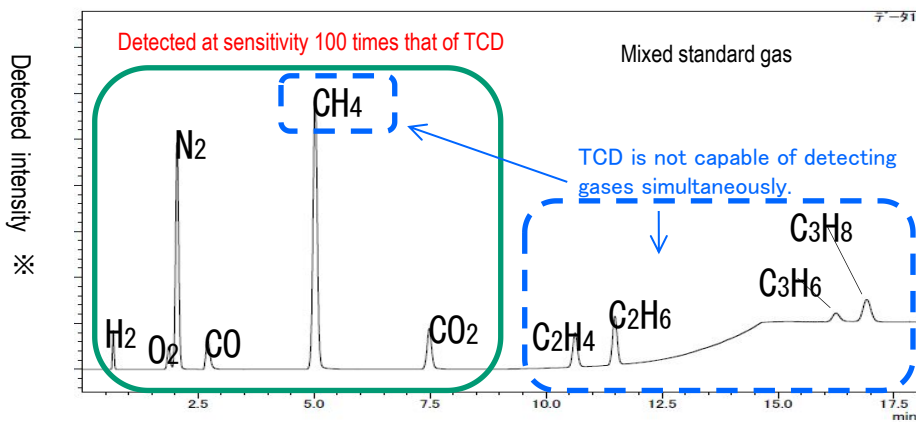
## Simultaneous Analysis of Gas Generated in Lithium Ion Batteries - GC-BID -

### Summary

The barrier discharge ionization detector (GC-BID) is capable of detecting inorganic gases such as H<sub>2</sub>, CO, and CO<sub>2</sub> and organic gases such as ethane simultaneously and with high sensitivity. We conducted an analysis of trace gas generated in a lithium ion battery that poses a problem of a trace amount of generated gas.

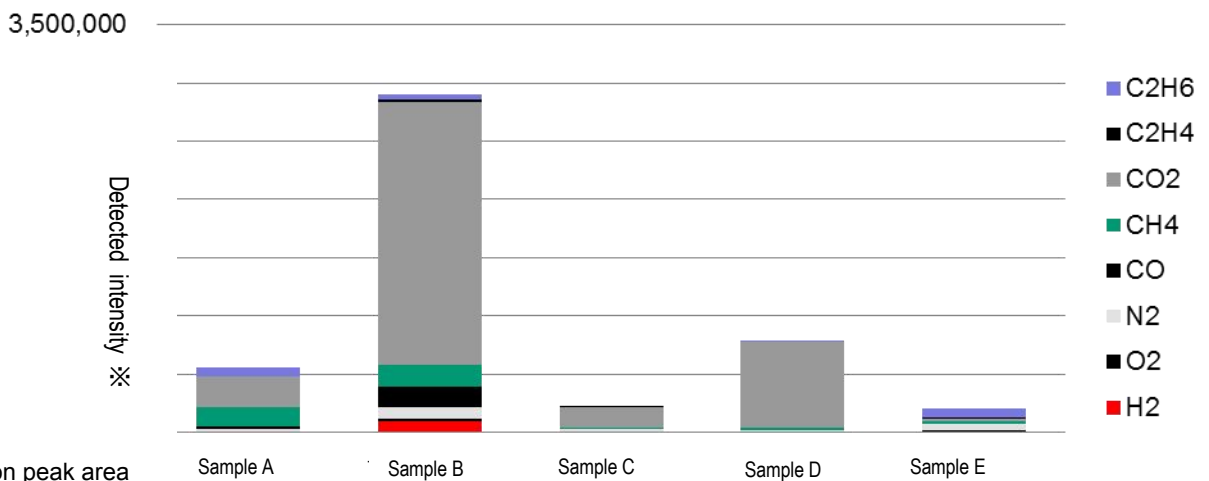
### Example of GC-BID gas chromatogram

- It is possible to detect inorganic gases such as H<sub>2</sub>, CO and CO<sub>2</sub> at a sensitivity 100 times as high as that of GC-TCD.
- It is possible to measure inorganic gases such as CH<sub>4</sub> and C<sub>2</sub>H<sub>4</sub> simultaneously.
- It is possible to detect organic gases having not more than 3 carbon atoms.



### Example of measurement: Analysis of gas generated in the acceleration testing of a lithium ion battery

Comparison of areas of samples



※ Detection peak area

- It was found that the types and amount of the gases generated varied according to the difference in the composition of the electrolyte.

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