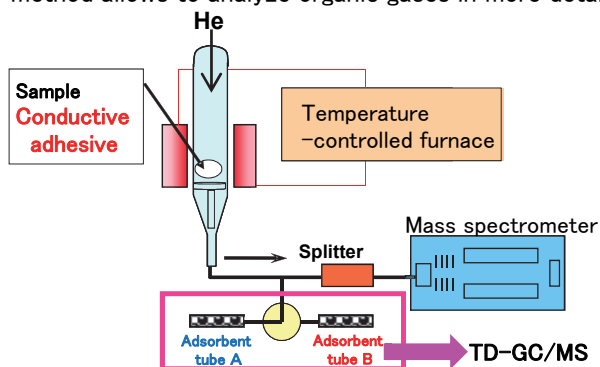


Evolved gas analysis for an adhesive in the curing process

The problem in curing process (e.g. contamination in apparatus, bubbles) can be attributed to the evolved gases from an adhesive. Temperature Programmed Desorption – Mass Spectrometer (TPD-MS) method is applied for the evolved gas analysis (EGA) from an adhesive in curing process.

EGA of a adhesive in curing process

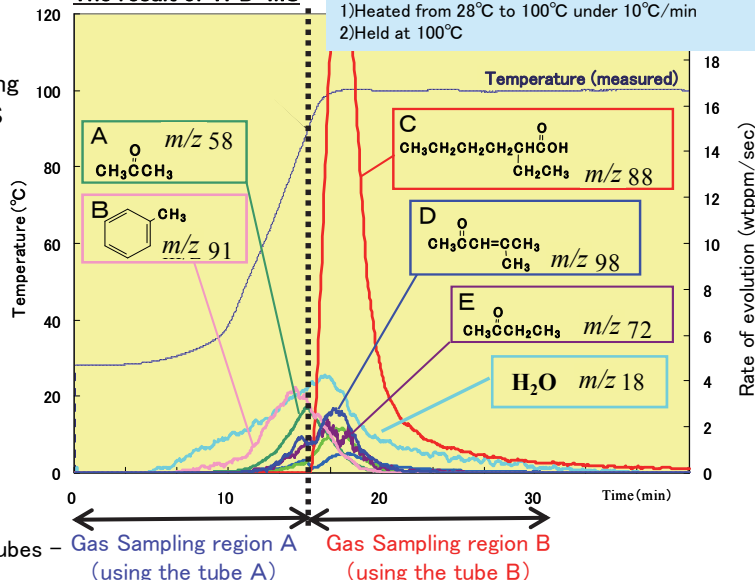
The TPD-MS is used to determine the amount of gas desorbed from the heated sample as a function of heating time or temperature. Thermal Desorption (TD) – GC/MS method allows to analyze organic gases in more detail.



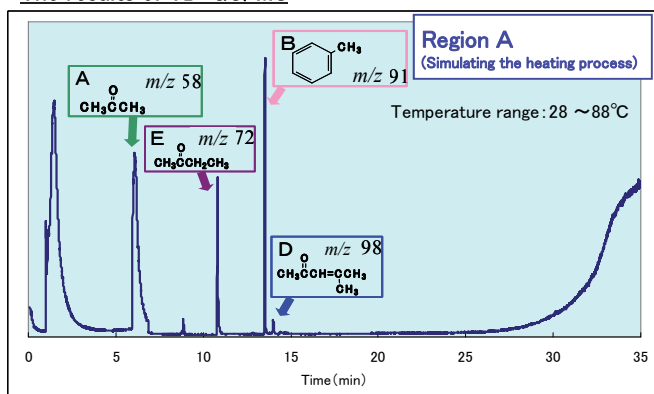
– Schematic diagram of TPD-MS connected with adsorbent tubes – Gas Sampling region A (using the tube A) Gas Sampling region B (using the tube B)

The result of TPD-MS

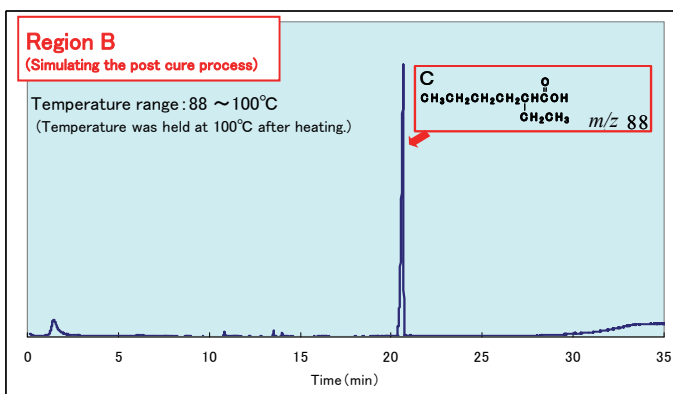
【Temperature program simulating the curing process】
1) Heated from 28°C to 100°C under 10°C/min
2) Held at 100°C



The results of TD-GC/MS



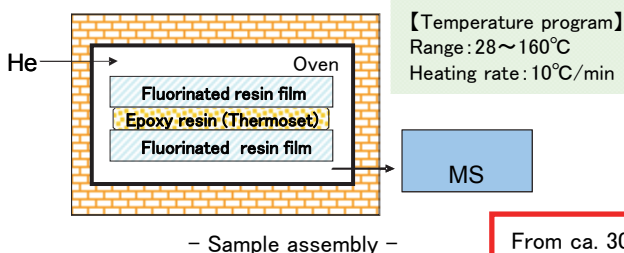
In the region A, volatilization of solvents is observed mainly.



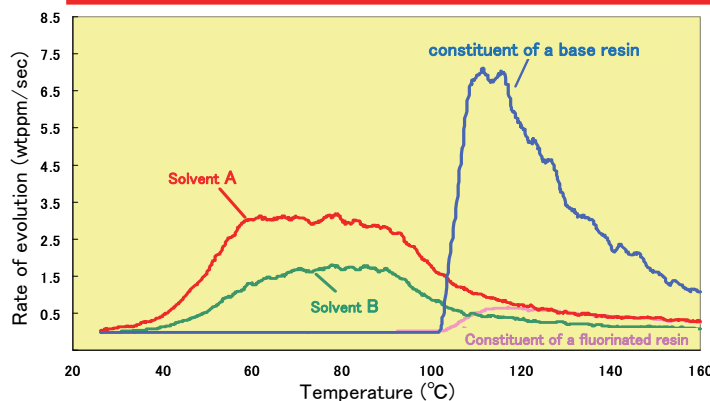
In the region B, evolution of the constituent from a base resin is observed.

EGA in the laminating process

EGA using TPD-MS can simulate the process of laminating the fluorinated resin films.



– Sample assembly –



From ca. 30°C, volatilization of solvents is observed. At higher than ca. 100°C, evolution of constituent of a fluorinated resin as well as a base resin is observed simultaneously.