

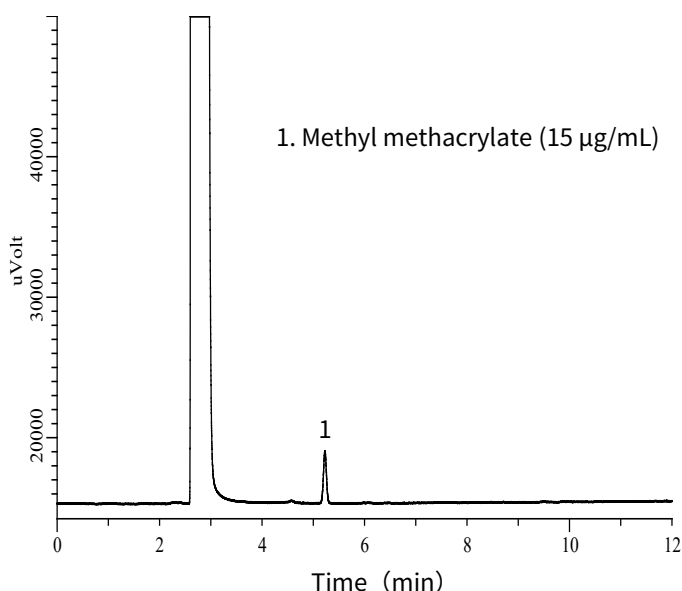
# Analysis of Methyl Methacrylate in Plastic Products

Methyl methacrylate is a monomer of polymethyl methacrylate. Polymethyl methacrylate is used in tableware and cooking utensils because it is highly transparent, light, acid and alkali resistant.

Unreacted monomers may remain in the material during polymethacrylic acid synthesis, the accepted concentration of eluted methyl methacrylate in the dissolution test is defined as 15 µg/mL or less in the sanitary test.

In this application, an aqueous ethanol solution was used to extract a commercially available plastic methacrylic resin container and measured. A standard additive was also measured.

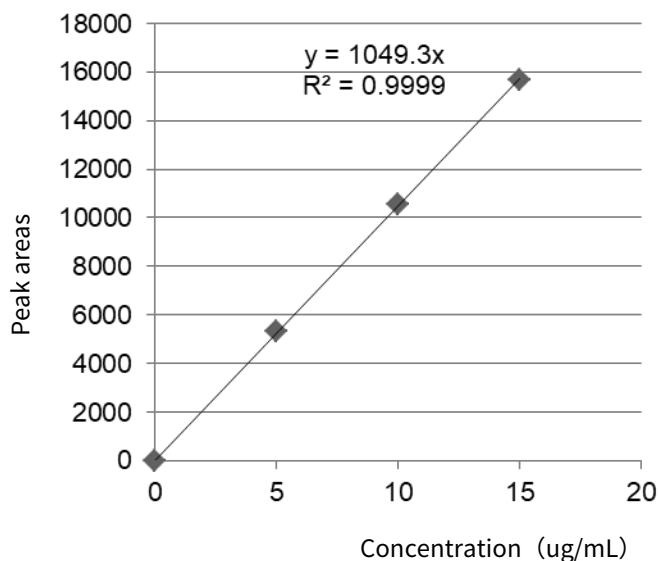
## Example: measurement of standard



### GC Conditions

<b>System</b>	: GC - FID
<b>Column</b>	: InertCap 1 0.32 mm I.D. x 30 m df = 5.00 µm
<b>Col.Temp.</b>	: 120 °C (1 min hold) - 5 °C/min - 170 °C (1 min hold)
<b>Carrier Gas</b>	: He 65 kPa
<b>Injection</b>	: Split 1:10 Vent flow 14 mL/min 200 °C
<b>Detection</b>	: FID 200 °C
<b>Sample Size</b>	: 15 µg/mL in 20 % Ethanol solution 1 µL

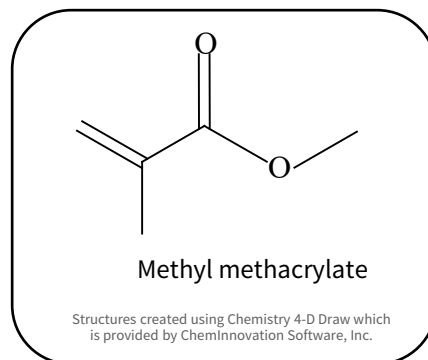
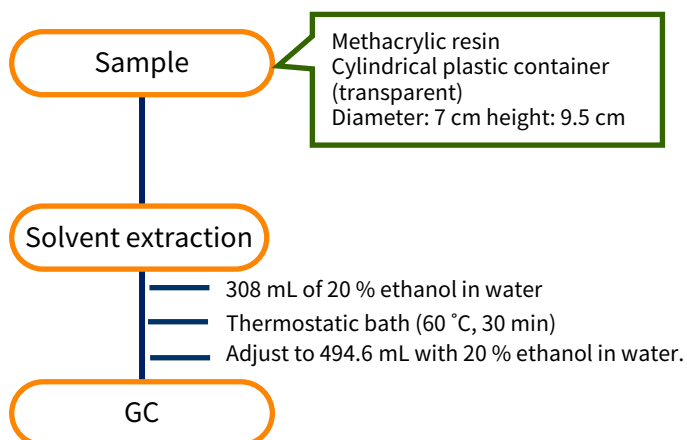
## Calibration curve



### <Results of repeated measurements>

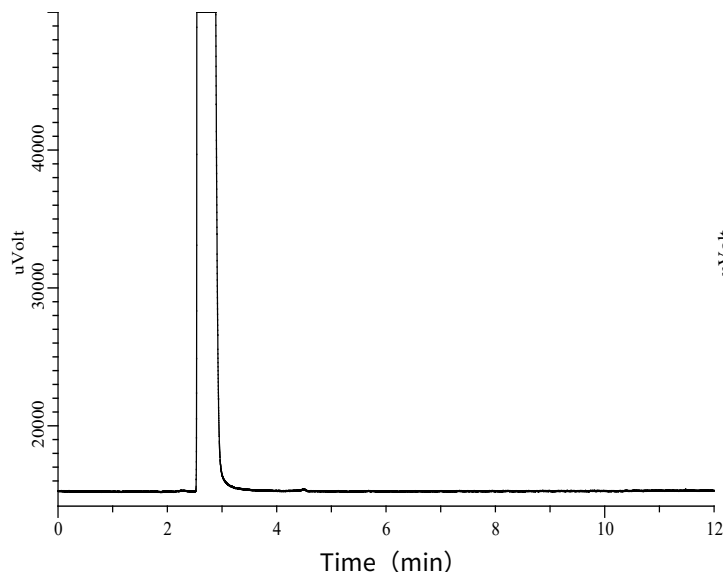
	5 µg/mL	10 µg/mL	15 µg/mL
1	5359	11075	15892
2	5569	10717	15541
3	5232	10234	16190
4	5178	10454	15637
5	5050	10641	15364
6	5446	10105	15519
Mean	5306	10538	15691
SD	189	352	300
RSD (%)	3.57	3.34	1.91

## Preliminary processing procedure

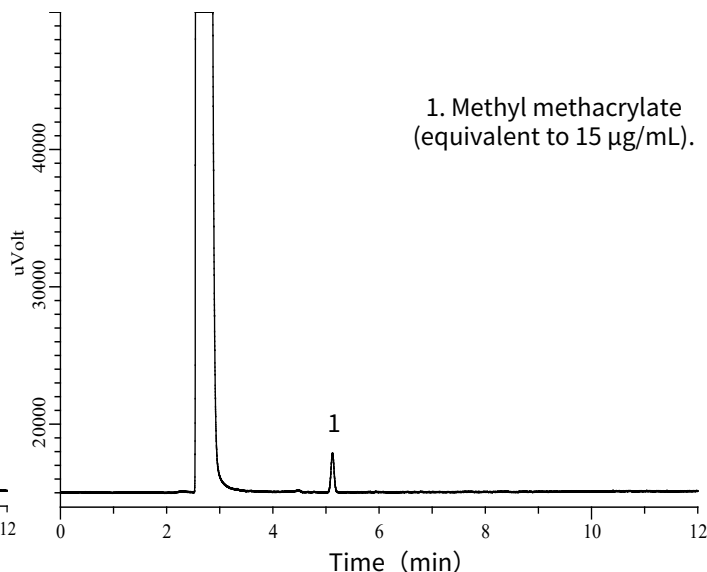


## Example: Measurement of sample

Extract



Extract + Methyl methacrylate solution



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