

VOC testing about Product Testing

- Building materials: Small-sized (20L) chamber (JIS A1901, etc.)
- Automobile parts: Sampling bag method
- PC: Small-sized (1m³) chamber method
(VOC guideline on PC: Japan Electronics and Information Technology Industries Association, JEITA)

● Sampling Method

Heating chamber (for electronic parts, etc)



20L chamber (for building materials, etc.)



Sampling bag (for automobile parts)



1m³ chamber (for PC, etc.)

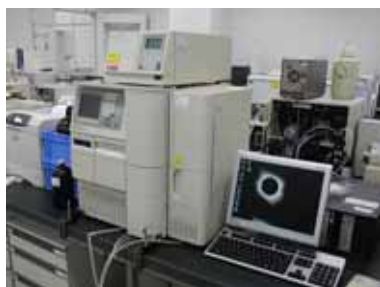


● Quantitative Analysis



Aldehydes are measured with HPLC and VOCs are with highly vaunted thermal desorption-GC/MS system.

HPLC



Thermal desorption-GC/MS



● Major Materials to be Measured

Building material: Plywood, panel, MDF, carpet, glue, paint, polycarbonate, etc.

Electric/electronic parts: Hard disk, printed circuit board, silicon wafer, etc.

Automobile parts: Interior materials, glue, adhesive tape, resin parts, leather, etc.

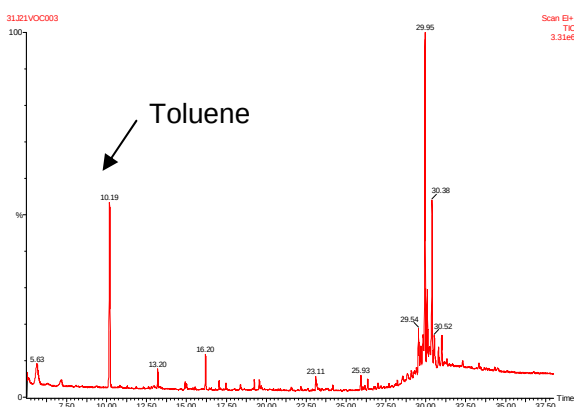
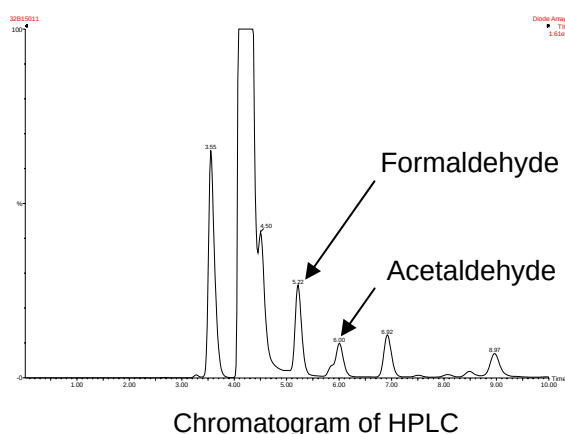
PC/business equipment: Desktop/note book PC, printer, etc.

Subject substances (typical) and guideline for concentration in room

Subject substances	Guideline values of conc. In room
Formaldehyde	100 $\mu\text{g}/\text{m}^3$ (0.08ppm)
Acetaldehyde	48 $\mu\text{g}/\text{m}^3$ (0.03ppm)
Toluene	260 $\mu\text{g}/\text{m}^3$ (0.07ppm)
Xylene	870 $\mu\text{g}/\text{m}^3$ (0.20ppm)
Paradichlorobenzene	240 $\mu\text{g}/\text{m}^3$ (0.04ppm)
Ethyl benzene	3800 $\mu\text{g}/\text{m}^3$ (0.88ppm)
Styrene	220 $\mu\text{g}/\text{m}^3$ (0.05ppm)
Tetradecane	330 $\mu\text{g}/\text{m}^3$ (0.04ppm)
Dibutyl phthalate	220 $\mu\text{g}/\text{m}^3$ (0.02ppm)
Bis-(2-ethylhexyl)phthalate	120 $\mu\text{g}/\text{m}^3$ (7.6ppb)
Chlorpyrifos	1 $\mu\text{g}/\text{m}^3$ (0.07ppb)
DIAZINON	0.29 $\mu\text{g}/\text{m}^3$ (0.023ppb)
FENOBUCARB	33 $\mu\text{g}/\text{m}^3$ (3.8ppb)

Notes: Above are guidelines for concentration in room air defined by Ministry of Health, Labor and Welfare and different from emission from materials in reference values and units.

Analysis of VOC generated from polymer



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