

# Ta(OEt)<sub>5</sub>

Tantalum pentaethoxide

|                             |                                                                                                          |                |        |
|-----------------------------|----------------------------------------------------------------------------------------------------------|----------------|--------|
| Chemical formula            | Ta(OC <sub>2</sub> H <sub>5</sub> ) <sub>5</sub>                                                         |                |        |
| CAS No.                     | [6074-84-6]                                                                                              | Formula weight | 406.25 |
| Physical form               | Colorless liquid                                                                                         | Melting point  | 21°C   |
| Density                     | 1.56g/cm <sup>3</sup>                                                                                    |                |        |
| Degree of association       | 2.20 (in benzene solution)                                                                               |                |        |
| Viscosity                   | 14.7cSt/30°C 3.60cSt/100°C 1.55cSt/160°C                                                                 |                |        |
| Solubility (at25°C)         | 1600g/1□EtOH , 750g/1□THF<br>miscible with toluene and hexane                                            |                |        |
| Typical impurities (ppm)    | Na <1 K <1 Mg <1 Ca <1 Cr <1 Fe <1 Cu <1 Ni <1                                                           |                |        |
| air sensitive               |                                                                                                          |                |        |
| Vapor pressure (as dimer)   | measured by gas saturation method<br>(temperature : 100~160°C)<br>118°C/0.1Torr                          |                |        |
| Clausius-Clapeyron equation | $\log_{10}P = - \frac{4505}{T} + 10.52$ <p style="text-align: center;"><i>P</i>:Torr      <i>T</i>:K</p> |                |        |
| Heat of vaporization        | 20.6kcal/2mol                                                                                            |                |        |
| Heat of fusion              | 7.69kcal/mol                                                                                             |                |        |

Temperature(°C)

160 140 120 100

Log<sub>10</sub>P

| Temperature (°C) | Log <sub>10</sub> P |
|------------------|---------------------|
| 155              | 0.2                 |
| 145              | -0.2                |
| 135              | -0.6                |
| 125              | -1.0                |
| 115              | -1.4                |
| 105              | -1.8                |

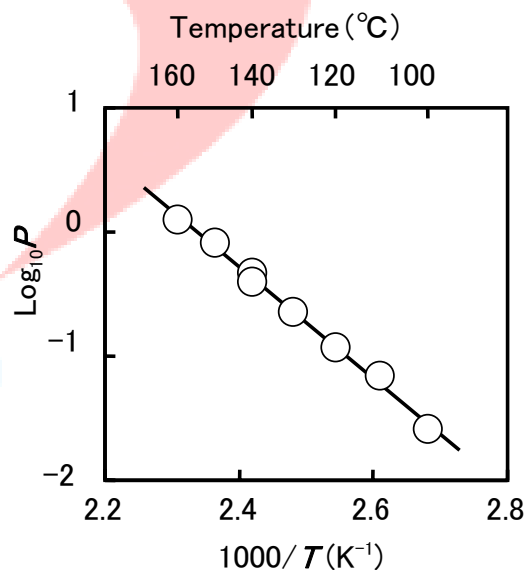


Fig. Clausius-Clapeyron plots for Ta(OEt)<sub>5</sub>

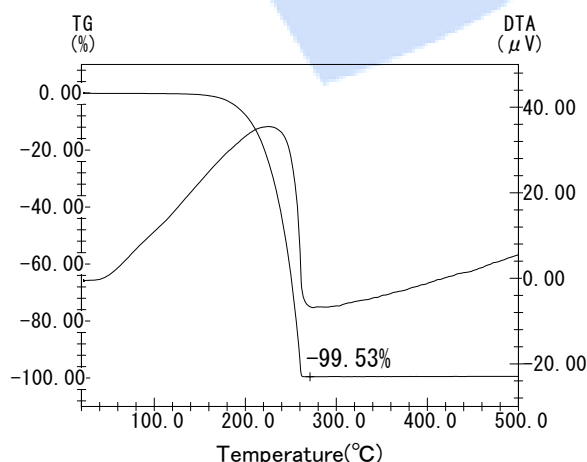


Fig. TG-DTA of Ta(OEt)<sub>5</sub> (1atm , in Ar)