

Temperature: 250°C Precursor: Co-reactant: O<sub>3</sub> Substrates: Si, SiO<sub>2</sub> a) 2.5 2.0 Y intensity (kcps) 1.5 1.0 0.5 Si SiO<sub>2</sub> 0.0 20 40 60 80 100 YAA-6 supply time (sec.)

**ALD Conditions** 



Figure 1: TG-DTA (10 torr) of Yttrium aminoalkoxides

Figure 2: a) XRF intensity of YAA-6 supply time, b) XSEM of  $Y_2O_3$  films

Table 1: Basic properties of various Yttrium aminoalkoxides

Code name	Y(dmamp) <sub>3</sub>	YAA-4	YAA-5	YAA-6	YAA-8	YAA-10
Structure	(o), N<)3	ON N	ON Et	$\left(\begin{matrix} O \\ \text{tBu} \end{matrix}\right)^{N} \left(\begin{matrix} O \\ \end{matrix}\right)_{3}$	$\left(\begin{array}{c} O \\ Pr \end{array}\right)^{N} $	o N<
Melting point	Viscose liquid	Viscose liquid	Viscose liquid	120°C	High viscose liquid	Viscose liquid
TG50% (10 torr)	245°C	264°C	284°C	<b>219</b> ℃	254°C	274°C
TG50% (760 torr)	334°C	355°C	N/A (dec.)	<b>293</b> ℃	328°C	348°C
Vapor pressure* @1.0torr	234°C	253°C	N/A	<b>196</b> ℃	228°C	247°C
DSC (onset)	371°C	294°C	331°C	335°C	319°C	331°C

Table 2: Basic properties of various rare earth aminoalkoxides

Code name	YAA-6	DAA-6	EAA-6	TAA-6	BAA-6	LAA-6
Structure	(tBu N<) <sub>3</sub>	Dy N< State of N=	( N ) ( N ) ( N )	(tBu )3	(tBu N<)3	Lu O N<
Melting point	120°C	N/A	168°C	223°C	56°C	96°C
TG50% (10 torr)	219°C	206°C	206°C	198°C	193°C	202°C
TG50% (760 torr)	293°C	294°C	288°C	279°C	275°C	382°C
Vapor pressure* @1.0torr	196°C	197°C	191°C	183°C	180°C	186°C
DSC (onset)	335°C	335°C	326°C	319°C	324°C	277°C

<sup>\*</sup> Calculation

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