Benzylperoxide $(C_6H_5CO)_2O_2$ BPO
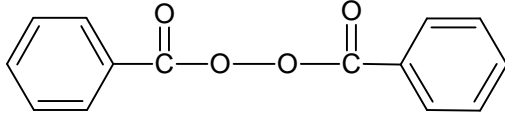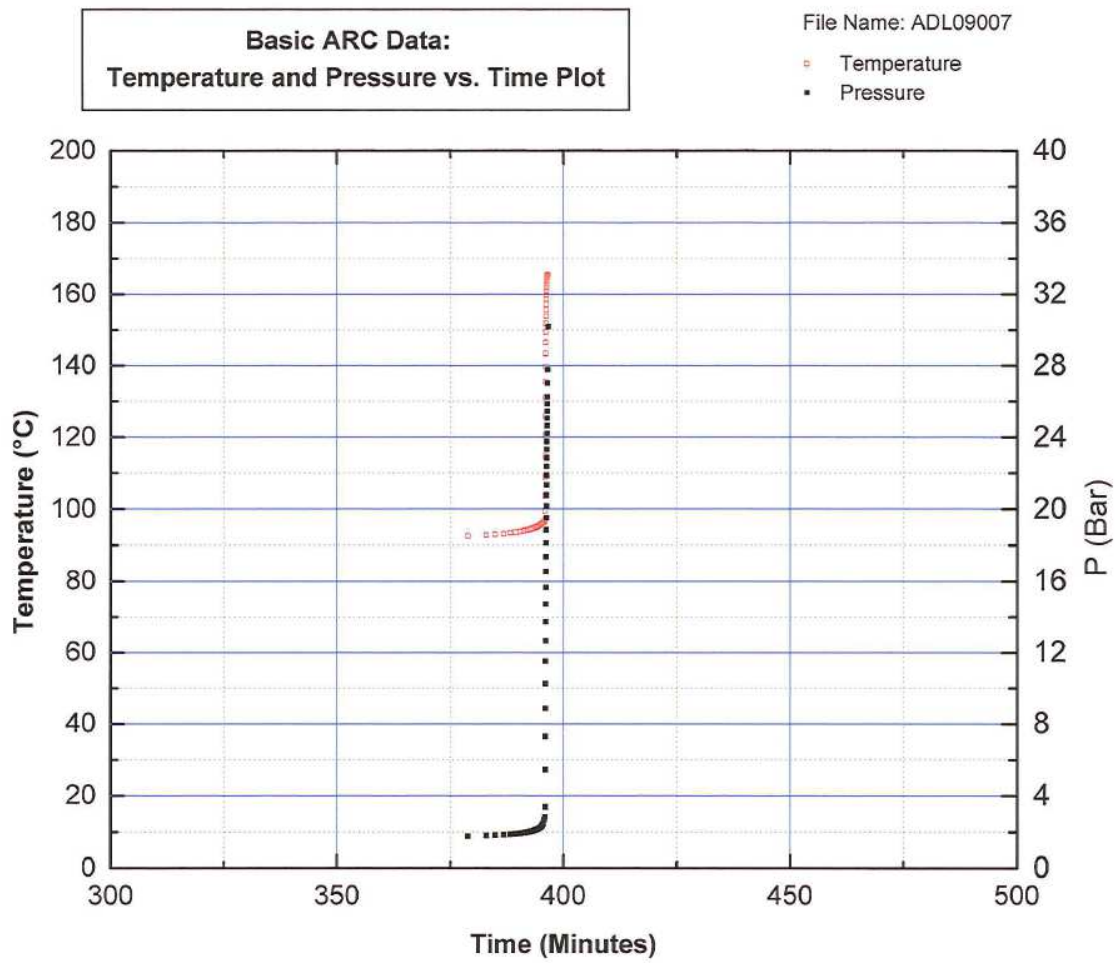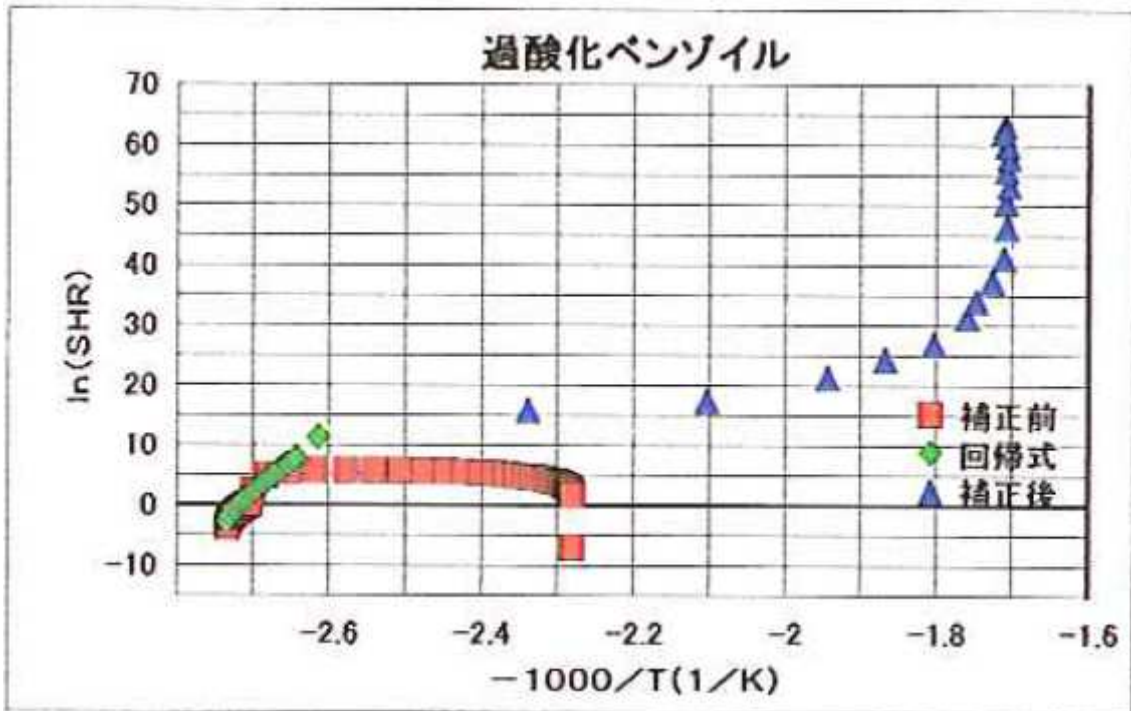

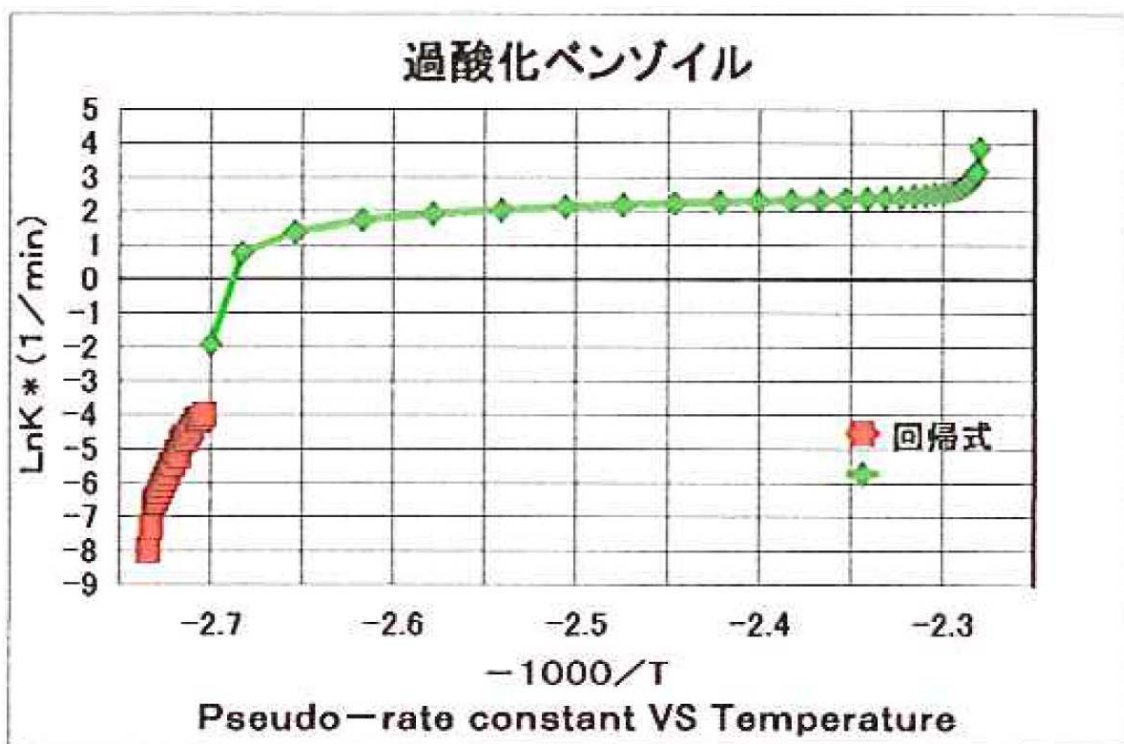ARC device: ARC2000 (Arthur D. Little Inc.)

Date: 2009/1

Operator: KJ

Time vs. Temperature and Pressure

Temperature vs. Self heating rate

TMR vs. Temperature

過酸化ベンゾイル

LnK * (1/min) vs −1000/T

回帰式

Pseudo−rate constant VS Temperature

Arrhenius equation (approximate calculation)

	Date	2009/1/10
Measuring conditions	ARC device	ARC2000 (Arthur D. Little Inc.)
	Operating Institute	KJ
	Operator	KJ
	Material of Bomb	Hastelloy C
	Weight of Bomb (g)	15.168
	Volume of Bomb (mL)	about 9
	Weight of sample (g)	1.543
	Weight of residue (g)	1.037
	Specific heat of Bomb ($J\ K^{-1}\ g^{-1}$)	0.419
	Specific heat of sample ($J\ K^{-1}\ g^{-1}$)	2.093
	ϕ facotr	2.97
	Start temperature (℃)	50
	End temperature (℃)	300
	Temperature increment (K)	2
	Waiting time (min)	5
	Searching time (min)	10

	Exothermic threshold (K min^{-1})	0.02
	Logging intervals (℃)	0.2
	Pressure limit (kPa)	17000
	Atmosphere	Air, atmospheric pressure
Results	T_o, Exothermic temperature (℃)	92.63
	Self heating rate at T_o (K min^{-1})	0.025
	Pressure at T_o (kPa)	180
	Temperature at maximum self heating rate (℃)	114.70
	Maximum self heating rate (K min^{-1})	347.59
	Pressure at maximum self heating rate (kPa)	1030
	Pressure rising rate at maximum self heating rate (kPa min^{-1})	8369
	Maximum pressure (kPa)	3020
	Maximum pressure rising rate (kPa min^{-1})	12533
	Temperature at maximum pressure rising rate (℃)	99.55
	Time to maximum rate (min)	17.16
	Maximum temperature (℃)	165.62
	Adiabatic temperature rise (℃)	72.99
	Activation energy (kJ mol^{-1})	948.3
	Heat of decomposition (J g^{-1})	452.2
Corrected results	T_{ARC}, Exothermic temperature (℃)	90.09
	Time of maximum rate at T_{ARC} (min)	51.87
	Self heating rate at T_{ARC} (K min^{-1})	0.02
	Maximum self heating rate (K min^{-1})	3.16×10^{27}
	Maximum temperature (℃)	313.84
	Adiabatic temperature rise (℃)	223.75
	Heat of decomposition (J g^{-1})	468.9