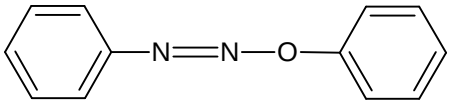
産業技術総合研究所　高エネルギー物質研究グループ
発熱分解エネルギー測定の標準化　　熱分析結果

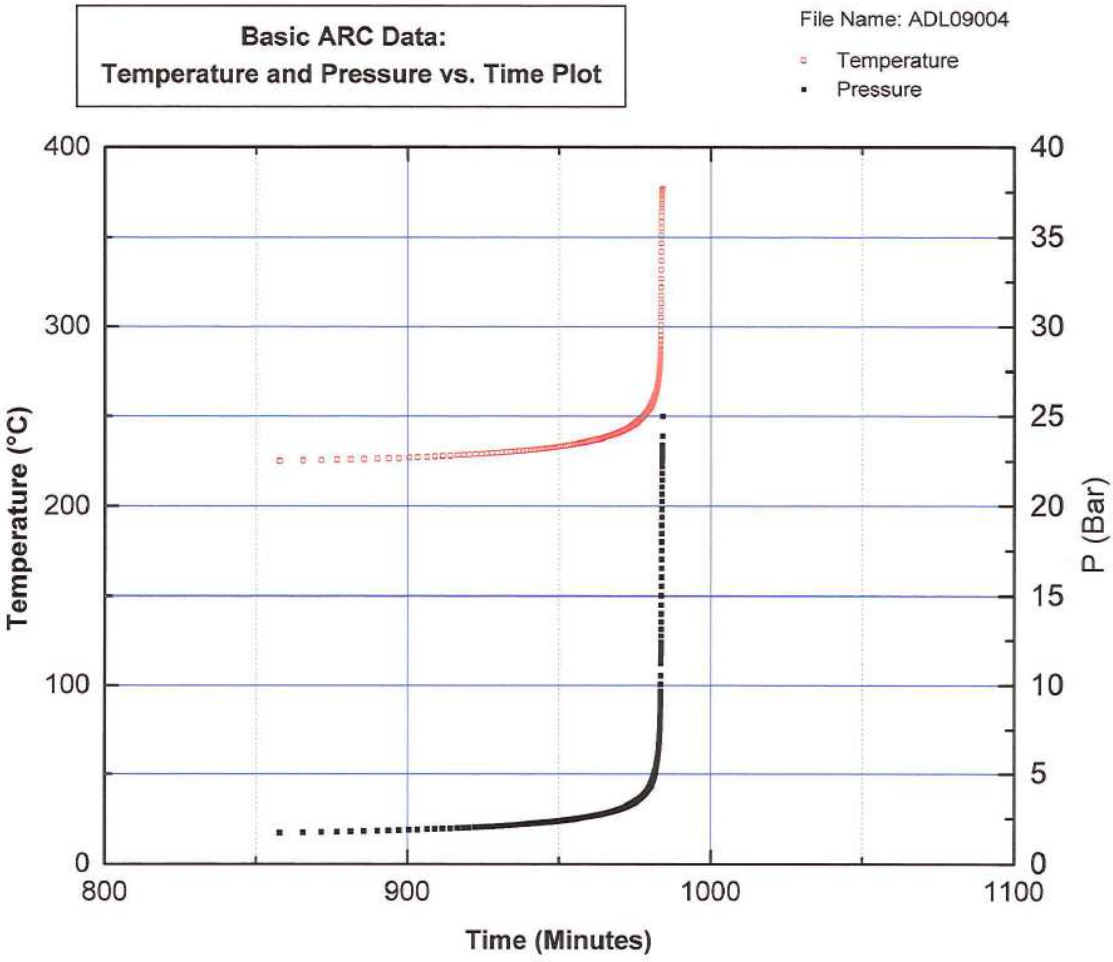
Azoxybenzene　　$C_6H_5N=NOC_6H_5$　　AzoxyB



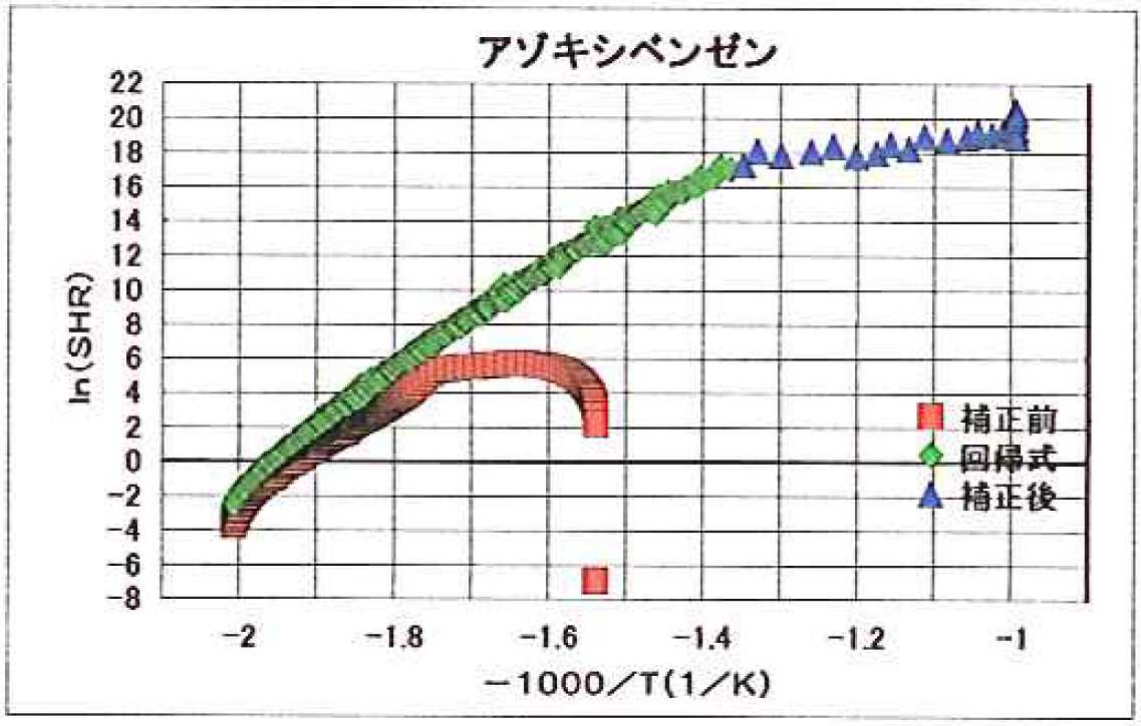
ARC device: ARC2000 (Arthur D. Little Inc.)

Date: 2009/1

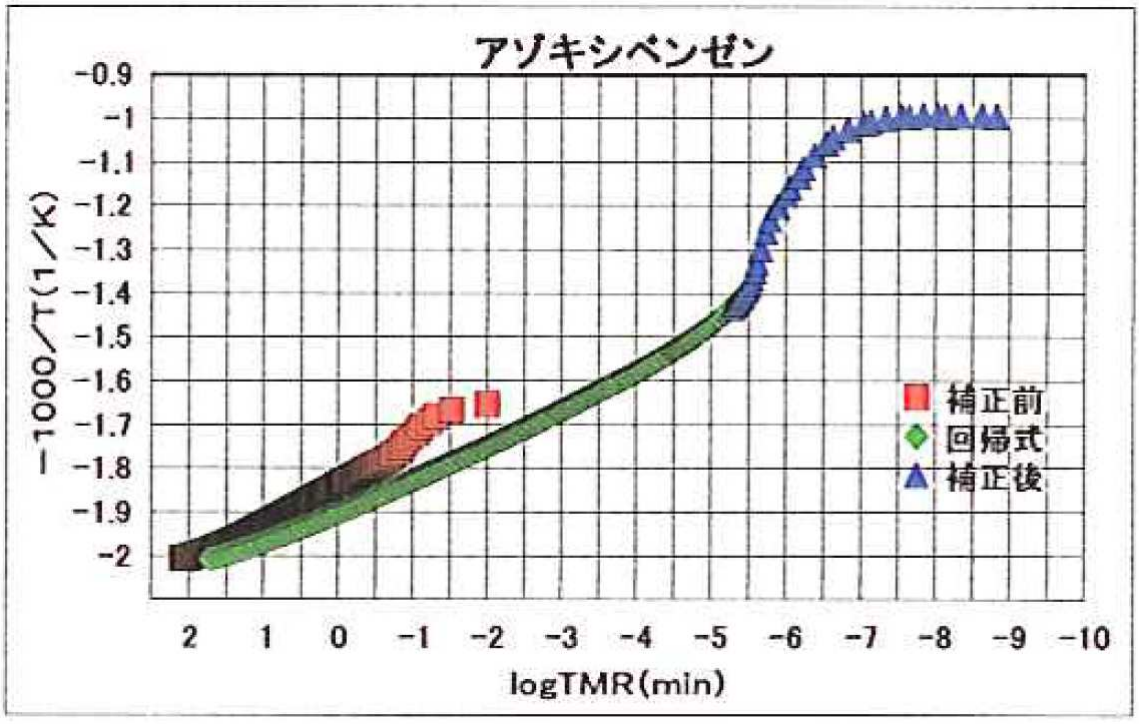
Operator: KJ



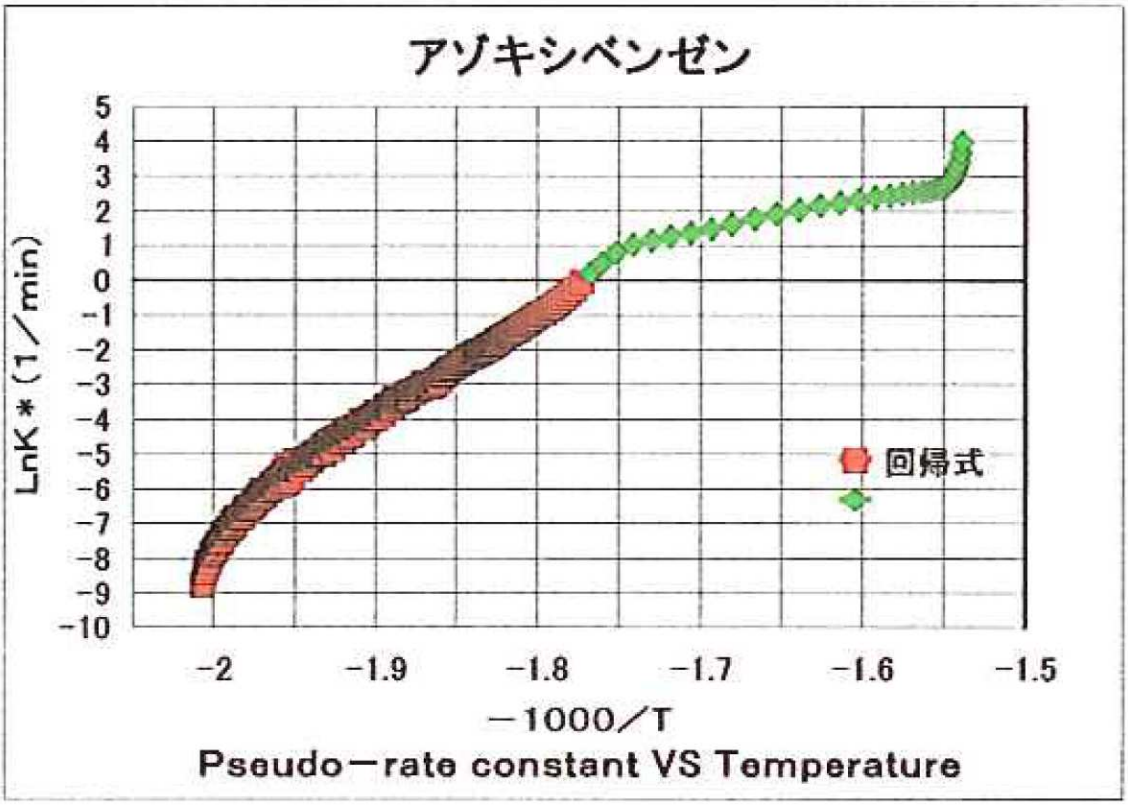
Time vs. Temperature and Pressure



Temperature vs. Self heating rate



TMR vs. Temperature



Arrhenius equation (approximate calculation)

	Date	2009/1/7
Measuring conditions	ARC device	ARC2000 (Arthur D. Little Inc.)
	Operating Institute	KJ
	Operator	KJ
	Material of Bomb	Hastelloy C
	Weight of Bomb (g)	15.105
	Volume of Bomb (mL)	about 9
	Weight of sample (g)	1.311
	Weight of residue (g)	1.193
	Specific heat of Bomb (J K^{-1} g^{-1})	0.419
	Specific heat of sample (J K^{-1} g^{-1})	2.093
	ϕ facotr	3.30
	Start temperature (℃)	50
	End temperature (℃)	450
	Temperature increment (K)	5
	Waiting time (min)	10

	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 (℃)	225.10
	Self heating rate at T_o (K min^{-1})	0.024
	Pressure at T_o (kPa)	170
	Temperature at maximum self heating rate (℃)	336.89
	Maximum self heating rate (K min^{-1})	307.92
	Pressure at maximum self heating rate (kPa)	1550
	Pressure rising rate at maximum self heating rate (kPa min^{-1})	3175
	Maximum pressure (kPa)	2500
	Maximum pressure rising rate (kPa min^{-1})	4247
	Temperature at maximum pressure rising rate (℃)	290.97
	Time to maximum rate (min)	125.89
	Maximum temperature (℃)	376.86
	Adiabatic temperature rise (℃)	151.76
	Activation energy (kJ mol^{-1})	268.0
	Heat of decomposition (J g^{-1})	1047
Corrected results	T_{ARC}, Exothermic temperature (℃)	202.87
	Time of maximum rate at T_{ARC} (min)	268.95
	Self heating rate at T_{ARC} (K min^{-1})	0.02
	Maximum self heating rate (K min^{-1})	8.21×10^{8}
	Maximum temperature (℃)	734.37
	Adiabatic temperature rise (℃)	531.50
	Heat of decomposition (J g^{-1})	1114