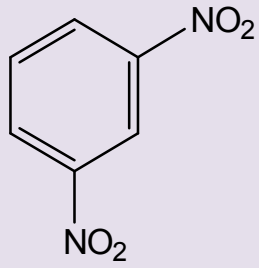
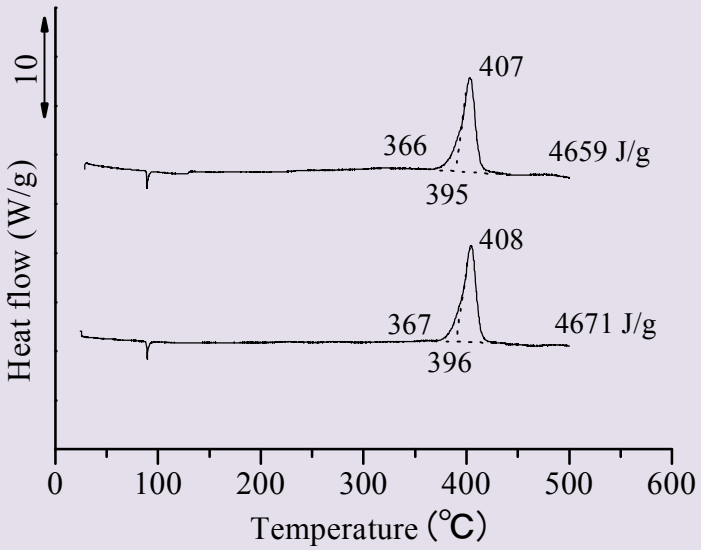
産業技術総合研究所　高エネルギー物質研究グループ
発熱分解エネルギー測定の標準化　　熱分析結果

m-dinitrobenzene	$C_6H_4(NO_2)_2$　DNB
	DSC divice : DSC8270B Rigaku Corp. dT/dt: 2 , 5, 10, 20 K/min Atmosphere: Air Vesel : pressure vessel (SUS) Rigaku Corp. Sample : Wako (> 99.0%)

a) 2 K/min

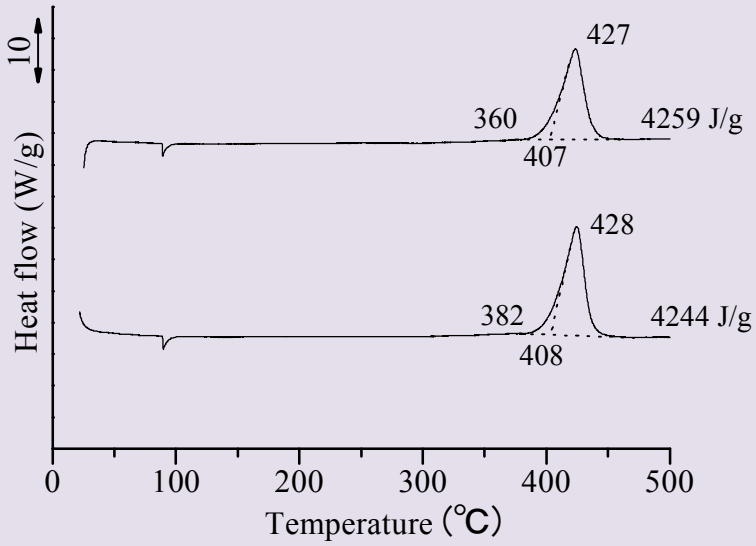
Wako：和光純薬工業株式会社



＜Average＞

T_a :	367	℃
T_o :	396	℃
T_{top} :	408	℃
Q_{DSC} :	4665	J/g

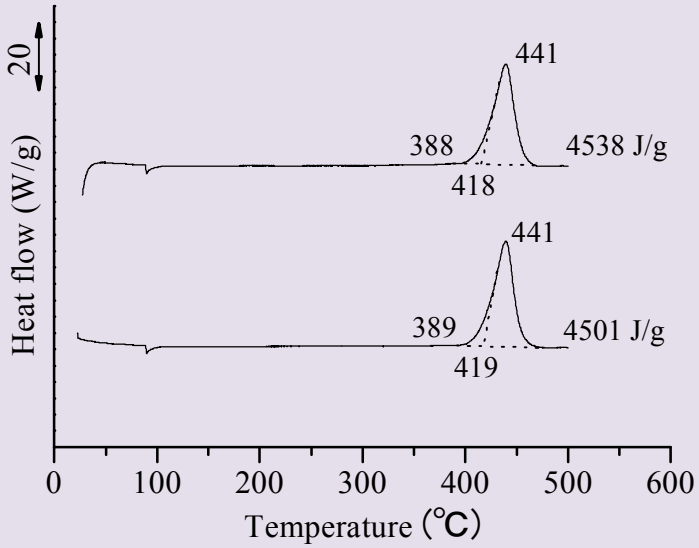
b) 5 K/min



＜Average＞

T_a :	371	℃
T_o :	408	℃
T_{top} :	428	℃
Q_{DSC} :	4252	J/g

c) 10 K/min



＜Average＞

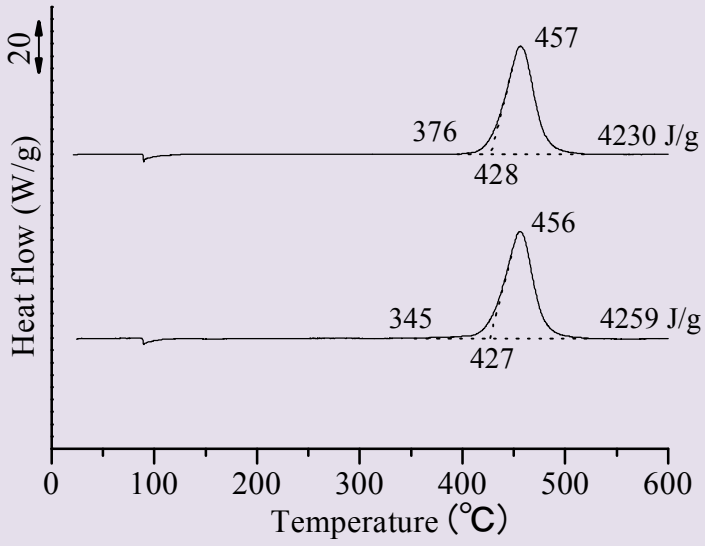
T_a : 389 ℃

T_o : 419 ℃

T_{top} : 441 ℃

Q_{DSC} : 4520 J/g

d) 20 K/min



＜Average＞

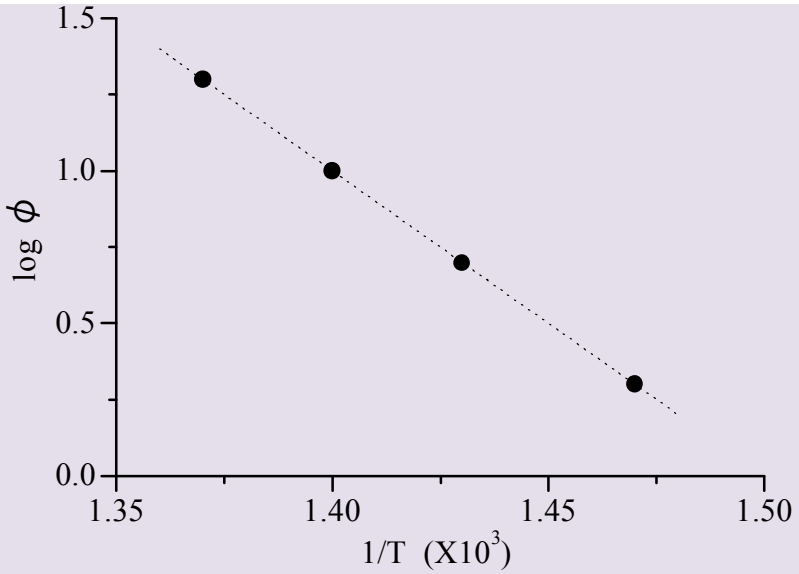
T_a : 361 ℃

T_o : 428 ℃

T_{top} : 457 ℃

Q_{DSC} : 4245 J/g

ASTM PLOT



ΔE : 187 kJ/mol

A : 1.24×10^{33}

r : -1

Table (ASTM)

Heat rate φ (K/min)	T_{peak} (℃)	Tm (K)	$1/Tm \cdot 10^3$	log φ
2	407	680	1.47	0.301
	408	681	1.47	0.301
5	427	700	1.43	0.699
	428	701	1.43	0.699
10	441	714	1.40	1.00
	441	714	1.40	1.00
20	457	730	1.37	1.30
	456	729	1.37	1.30