Curie Point Pyrolyzer JHP-5
Thermal decomposition of HDPE with different Py-temp

Using setup model of curie point pyrolyzer JHP-5 with different Py temperatures.

Pyrograms are from the topof F500 (500c), F590(590c), F670(670c), and F764(764c).

From the pyrogram of F500, each peak hights are only 15% of F590, F670 and F764, polyethlene were not thermally decomposed completely.

Also, as the Py temperature goes higher to F764, it detected more small molecules.

From this analysis, optimized Py temperature is at F590 (590c).

Analysis Condition

Sample	HDPE (High Density Polyethylene)	Amount: about 0.3 mg
JHP-5	Oven temperature	300℃
	Needle temperature	300℃
	Pyrofoil	F590
	Pyrolysis time	5 sec
GC-17A	Constant flow mode	
	Column flow rate	1.0 ml/min (He)
	Velocity	36.1 cm/sec
	Oven temperature	Initial: 40℃(3 min)
		Rate: 10℃/min
		Final: 320℃(69 min)
	Head pressure	Initial: 48.9 kpa (3 min)
		Rate: 3.8 kpa/min
		Final: 155.3 kpa (69 min)
	Analysis time	100 min
	Injector temperature	320℃
	Detector temperature	320℃
	Equivalent time	3 min
	Split ratio	1/100
	Total flow rate	103 ml/min
	Purge gas flow rate	5.0 ml/min (at 100 kpa)
QP-5000	Mass range	33-550
	EM gain	1.70 kv
	Solvent cut	0 min
	Scan time	0.2-100 min
Column	DB-5MS	Inside diameter: 0.25 mm
		Length: 30 m
		Film thickness: 0.25 um

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