

Hydrogen Pressure as a Key Parameter to Control the Quality of the Naphtha Produced in the Hydrocracking of an HDPE/VGO Blend

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A. HYDROCRACKING UNIT

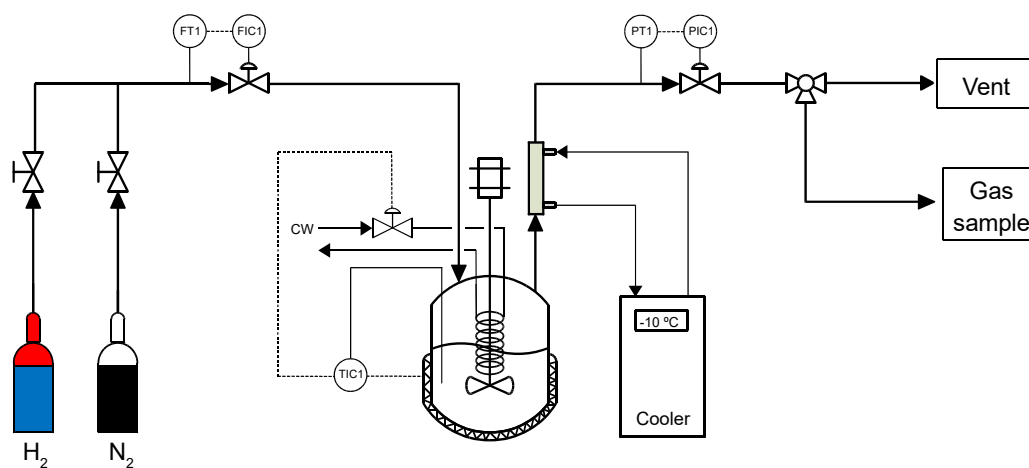
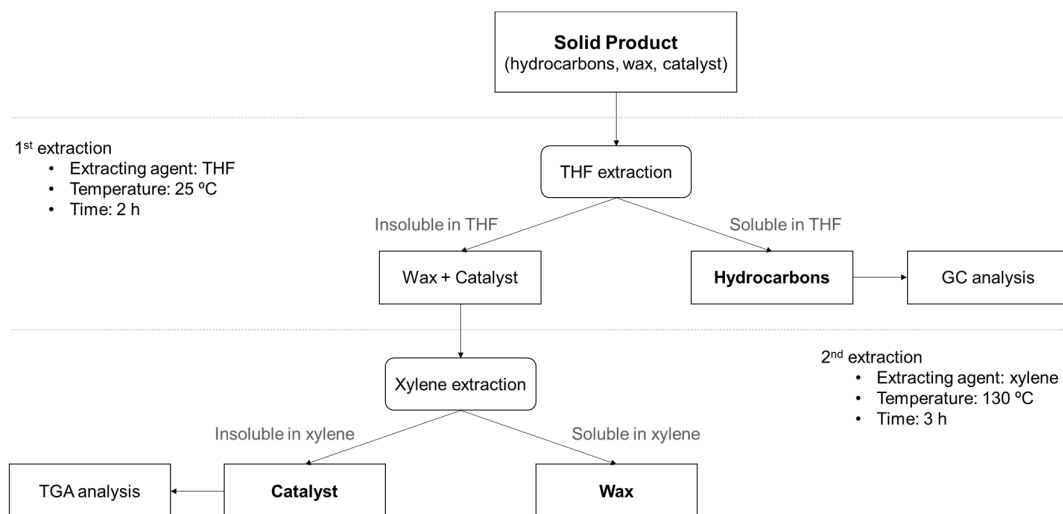


Figure S1. Schematic representation of the hydrocracking unit.

B. SOLVENT FRACTIONATION METHOD**Figure S2.** Solvent fractionation method followed.

C. CHARACTERIZATION OF THE FEEDS

Table S1. Properties of vacuum gas oil (VGO) and high-density polyethylene (HDPE).

Properties	VGO	HDPE
Physical properties		
Density at 15 °C (kg L ⁻¹)	0.89	0.94
Viscosity at 37.8 °C (cSt)	34.2	—
Average molecular weight (g mol ⁻¹)	377	46,200
Dispersity	—	2.89
Higher heating value (MJ kg ⁻¹)	45	43
Simulated distillation (°C)		
IBP-FBP	156-519	—
T ₅₀ -T ₉₅	415-491	—
Distillation fractions (wt%)		
Naphtha (< 216 °C)	0.17	—
LCO (215-350 °C)	4.48	—
HCO (> 350 °C)	95.4	—
Elemental analysis (wt%)		
C	87.3	85.7
H	12.5	14.3
N	—	—
S (ppm)	510	—
Composition (wt%)		
Paraffins	14.0	—
Naphthenes	35.3	—
Mono-aromatics	20.3	—
Di-aromatics	12.4	—
Poly-aromatics	15.7	—
Sulfur-containing compounds	2.3	—