

Figure S1. The DSC curve recorded for LNG at $\beta = 10\text{ }^{\circ}\text{C}\cdot\text{min}^{-1}$ on 30-300°C temperature range

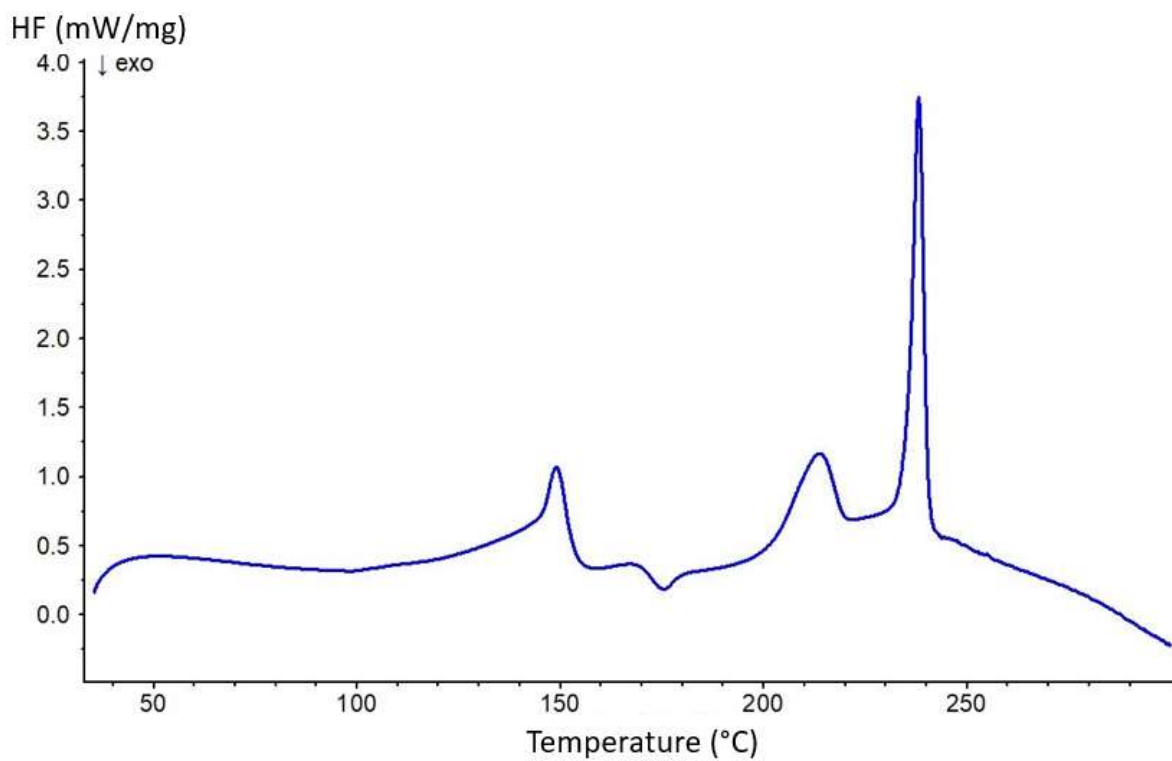


Figure S2. The DSC curve recorded for LNGMIX at $\beta = 10\text{ }^{\circ}\text{C}\cdot\text{min}^{-1}$ on 30-300 °C temperature range

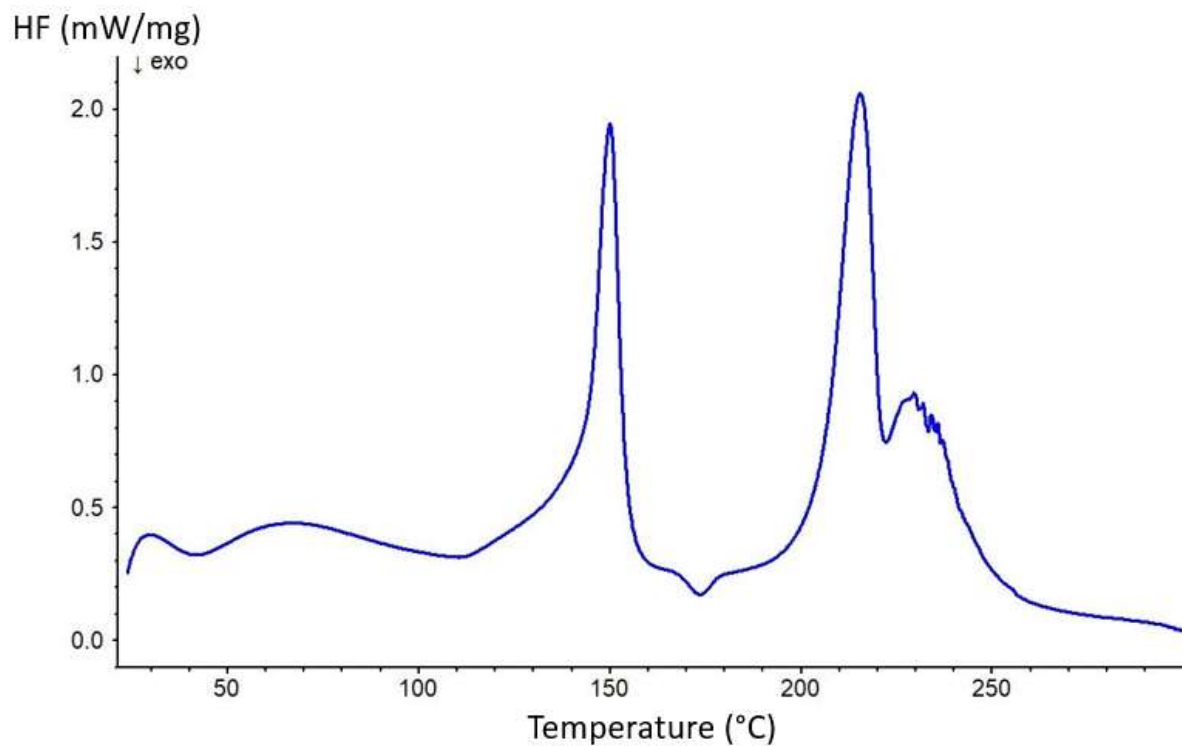


Figure S3. The DSC curve recorded for LNGTHAB at $\beta = 10\text{ }^{\circ}\text{C}\cdot\text{min}^{-1}$ on 30-300 $^{\circ}\text{C}$ temperature range

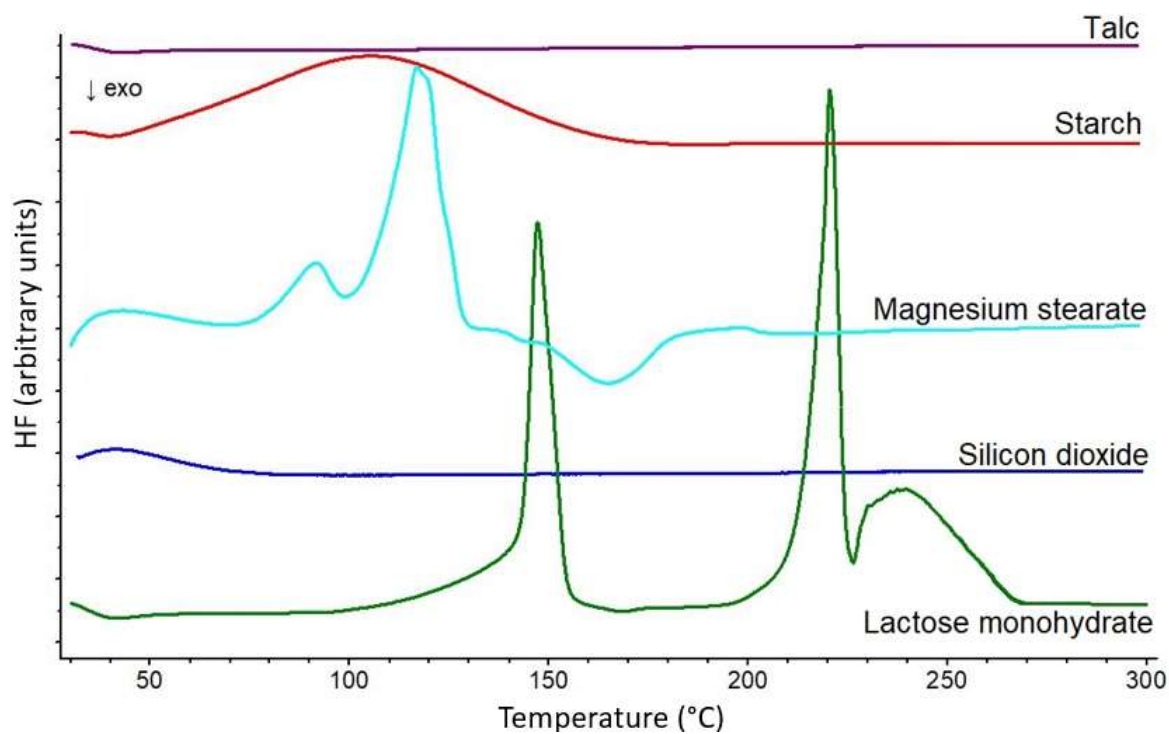


Figure S4. The DSC curve recorded for the excipients present in the pharmaceutical formulation in dynamic air atmosphere at $\beta = 10\text{ }^{\circ}\text{C}\cdot\text{min}^{-1}$.

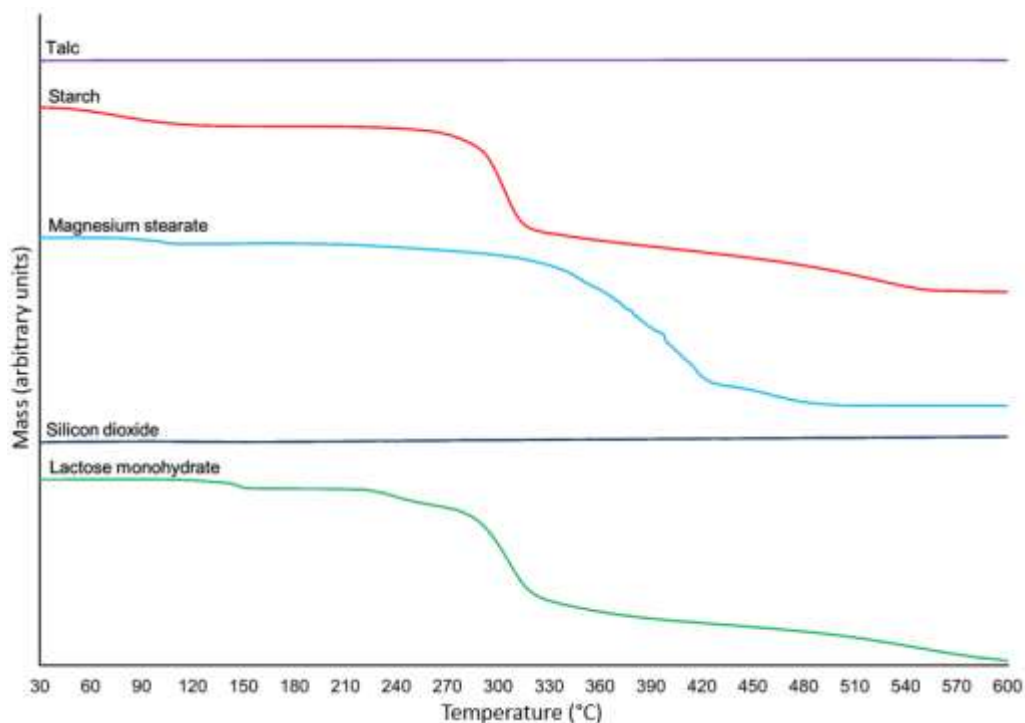


Figure S5. Thermoanalytical data (TG) recorded for the excipients present in the pharmaceutical formulation in dynamic air atmosphere at $\beta = 10\text{ }^{\circ}\text{C}\cdot\text{min}^{-1}$.

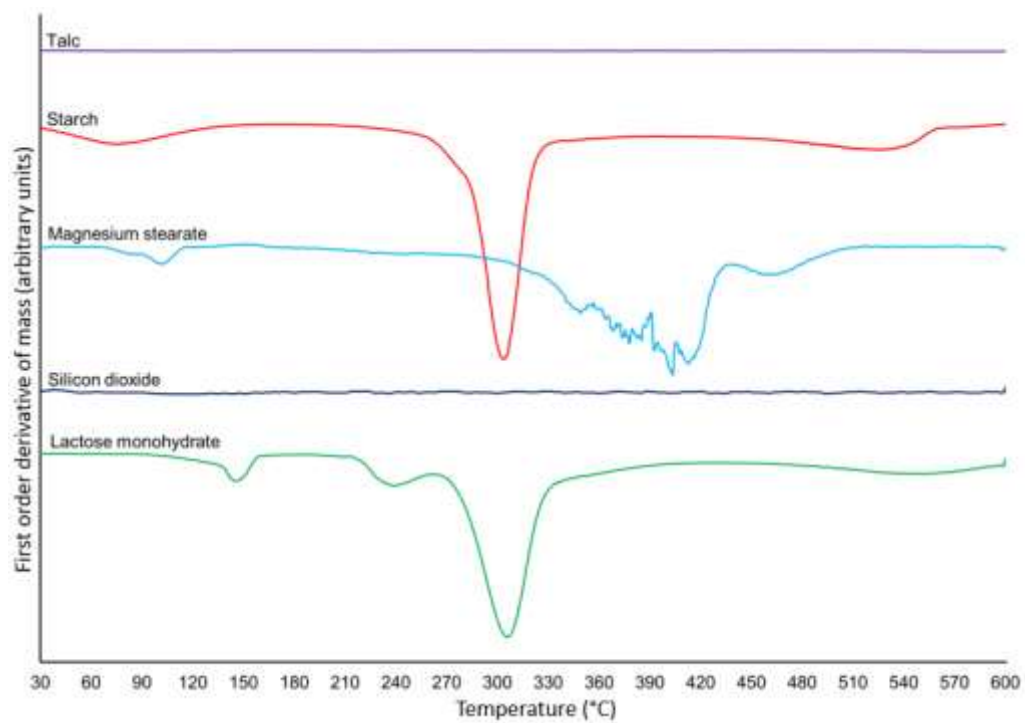
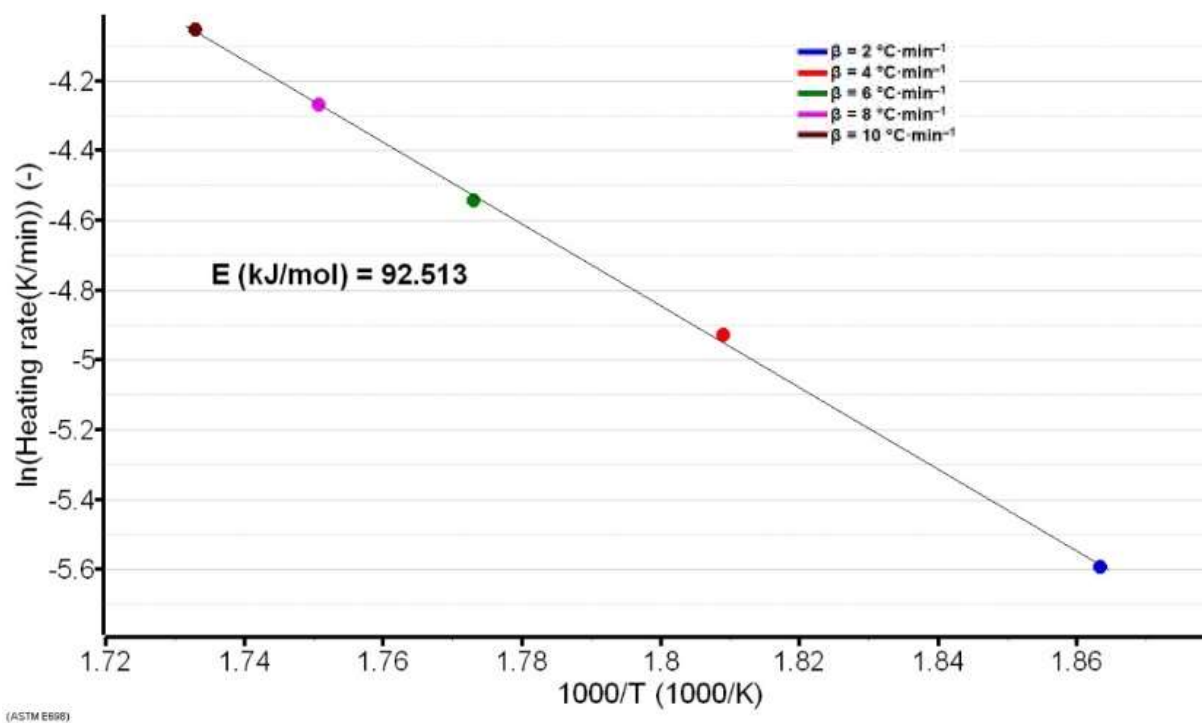
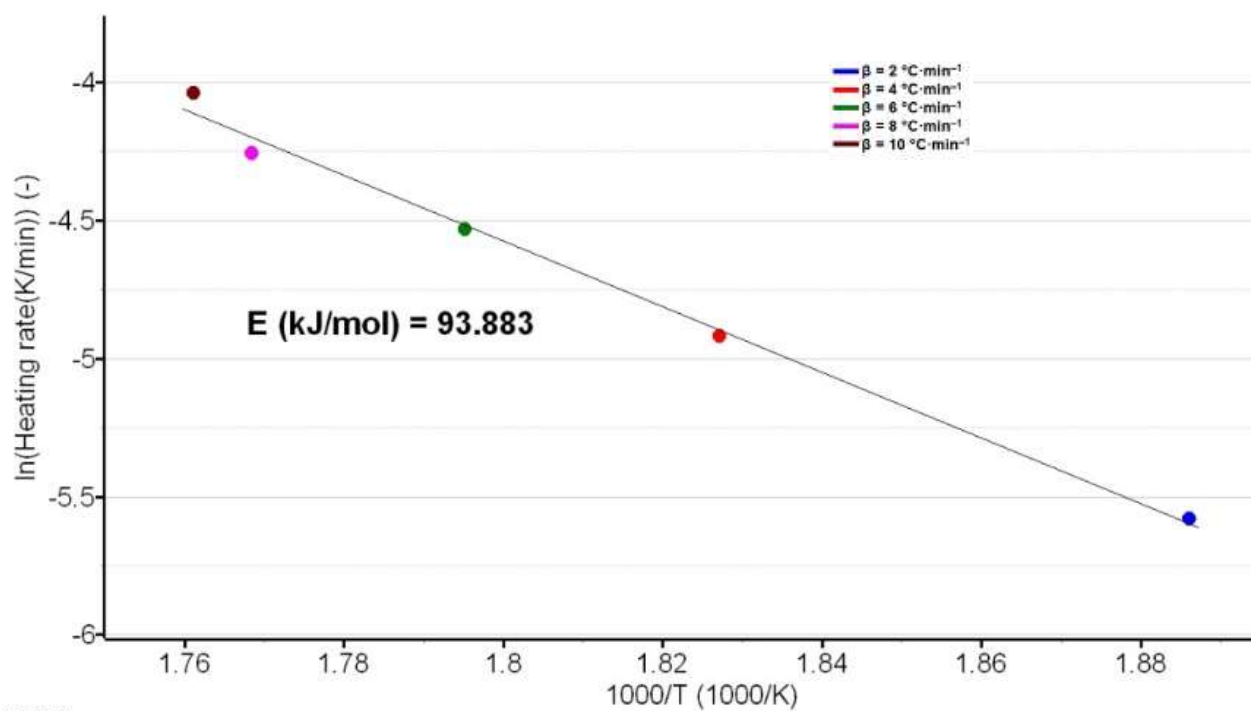


Figure S6. Thermoanalytical data (DTG) recorded for the excipients present in the pharmaceutical formulation in dynamic air atmosphere at $\beta = 10\text{ }^{\circ}\text{C}\cdot\text{min}^{-1}$.

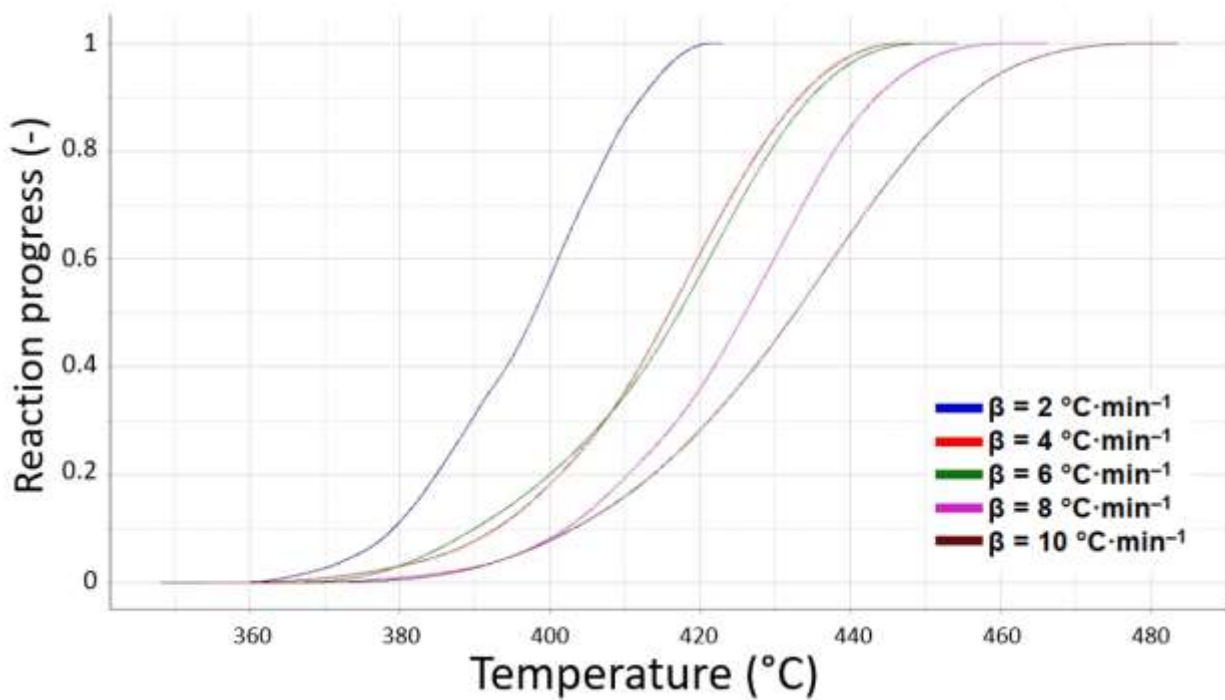


(a)

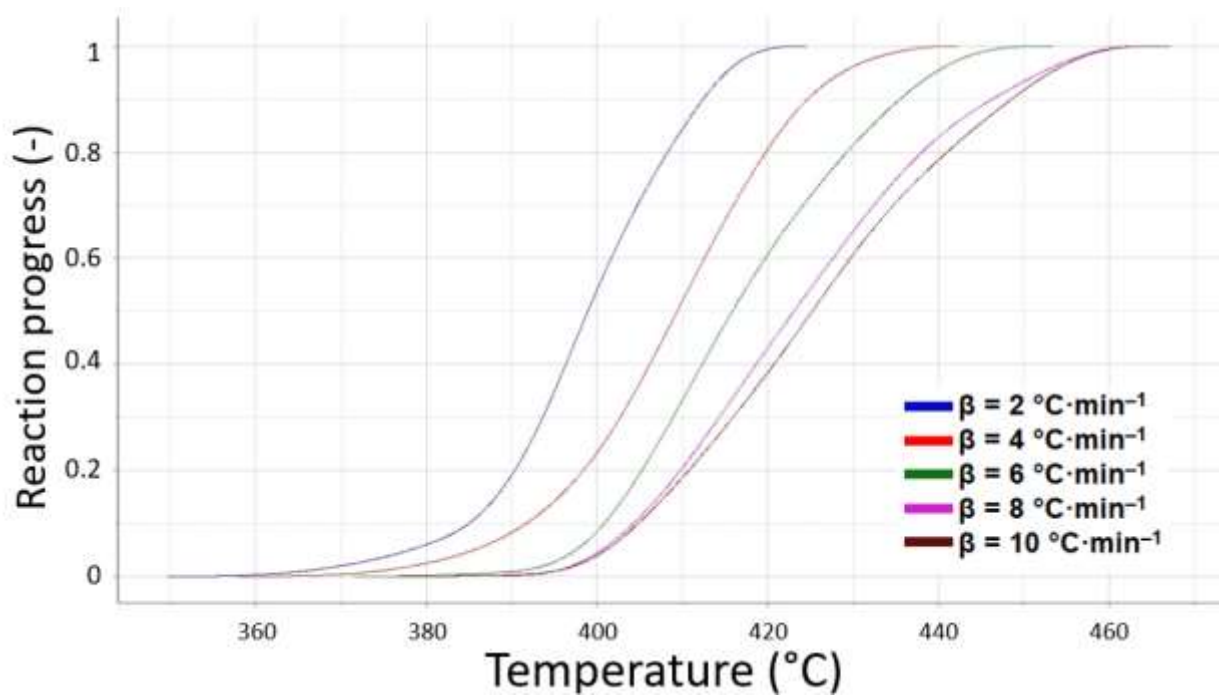


(b)

Figure S7. The plot according to the ASTM E698 kinetic method with the estimated activation energy of “process 1” for: (a) LNG and (b) LNGMIX

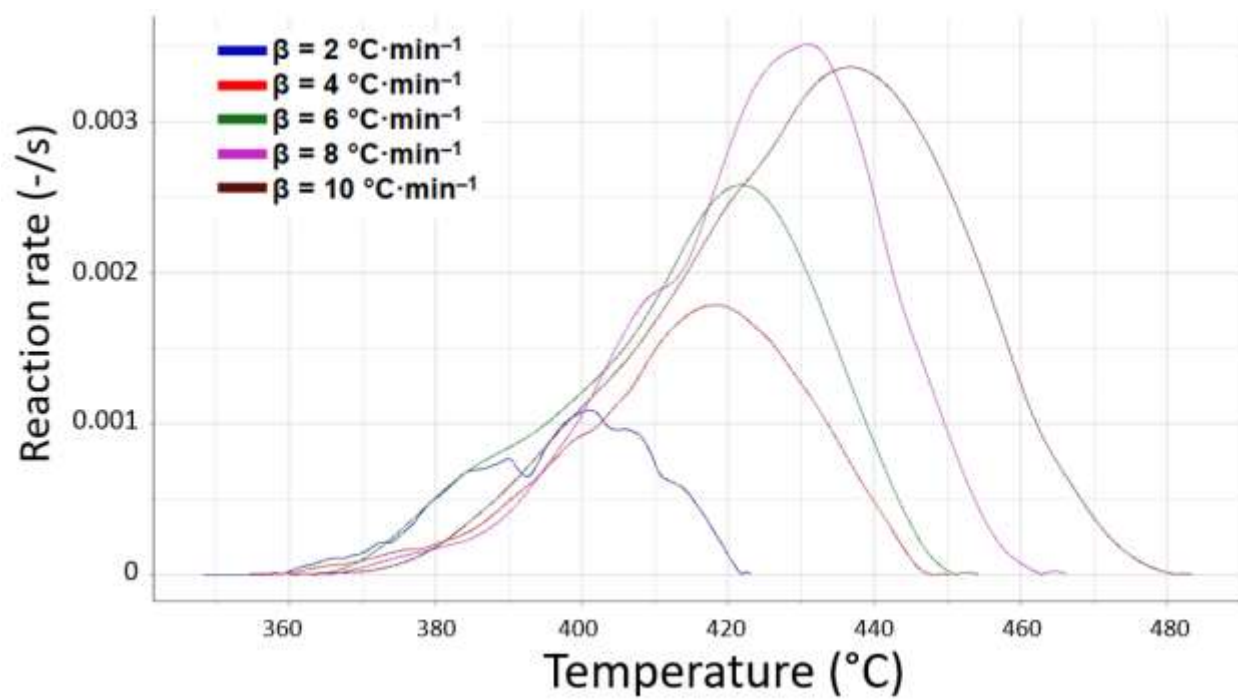


(a)

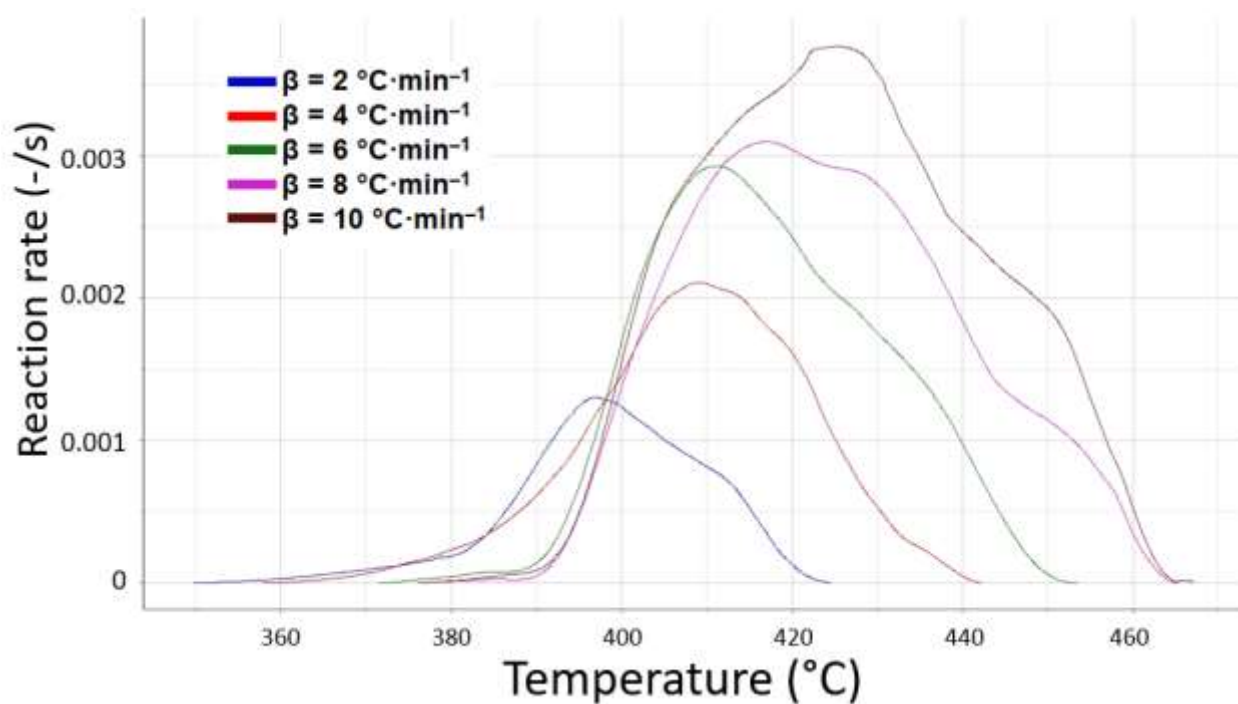


(b)

Figure S8. The reaction progress *vs.* temperature for “process 2” at selected heating rates for: (a) LNG and (b) LNGMIX

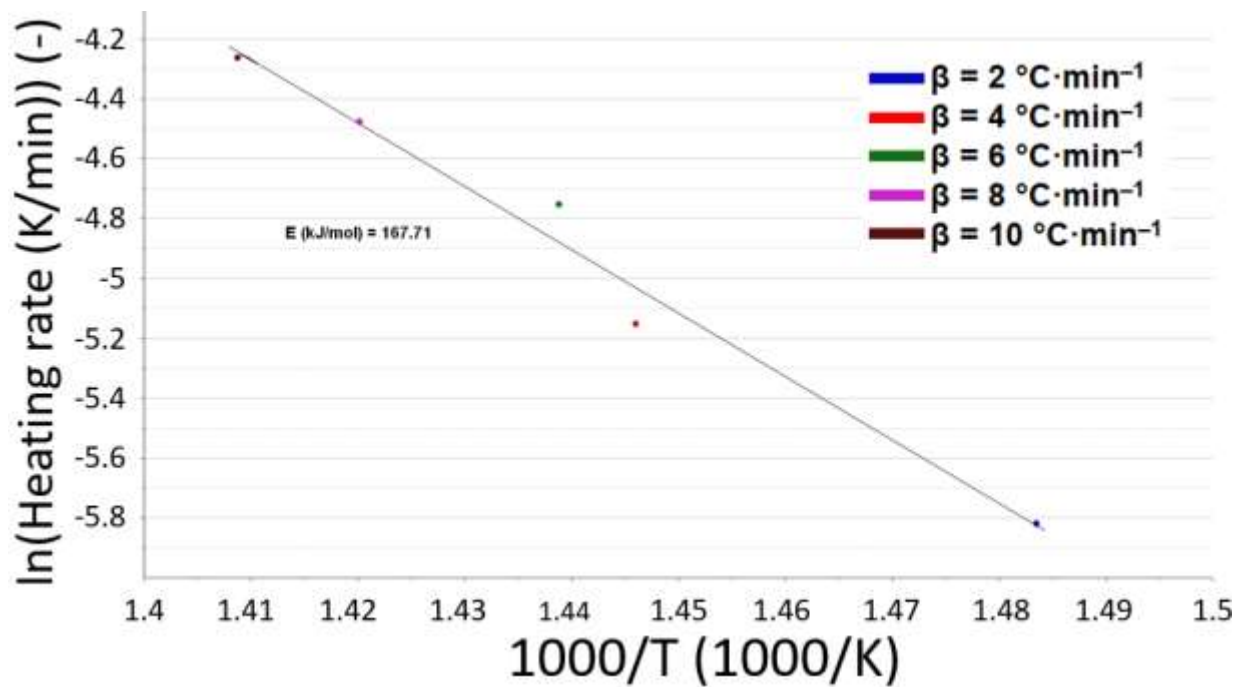


(a)

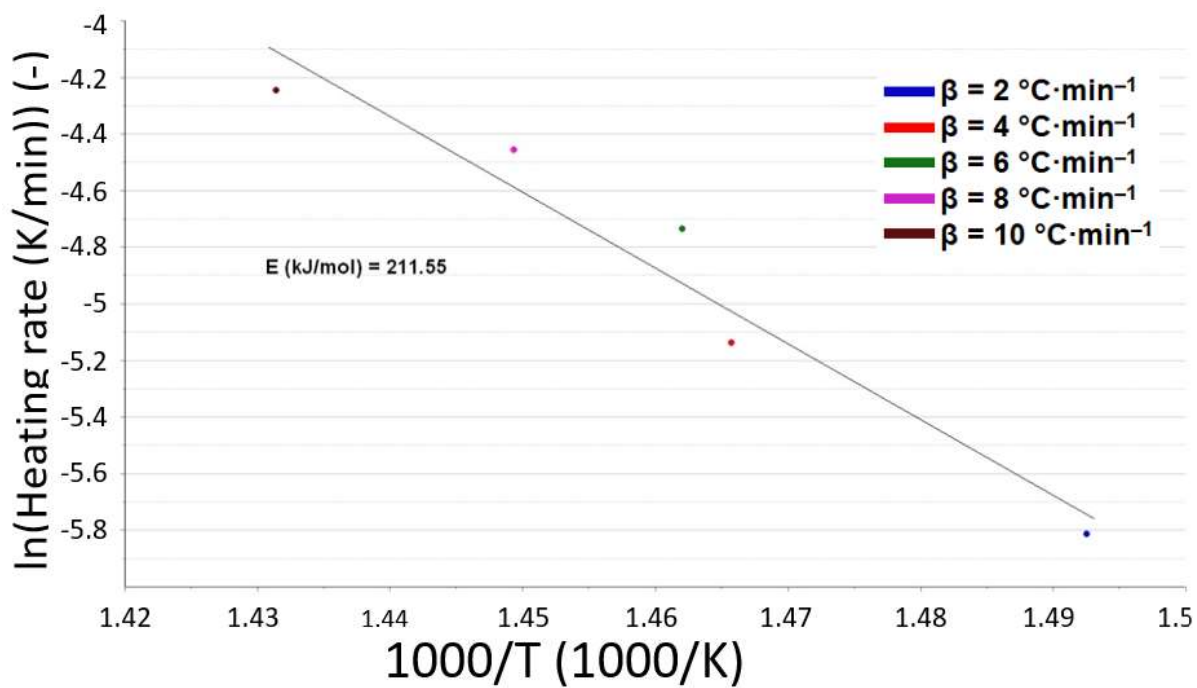


(b)

Figure S9. The reaction rate *vs.* temperature for “process 2” at selected heating rates for: (a) LNG and (b) LNGMIX

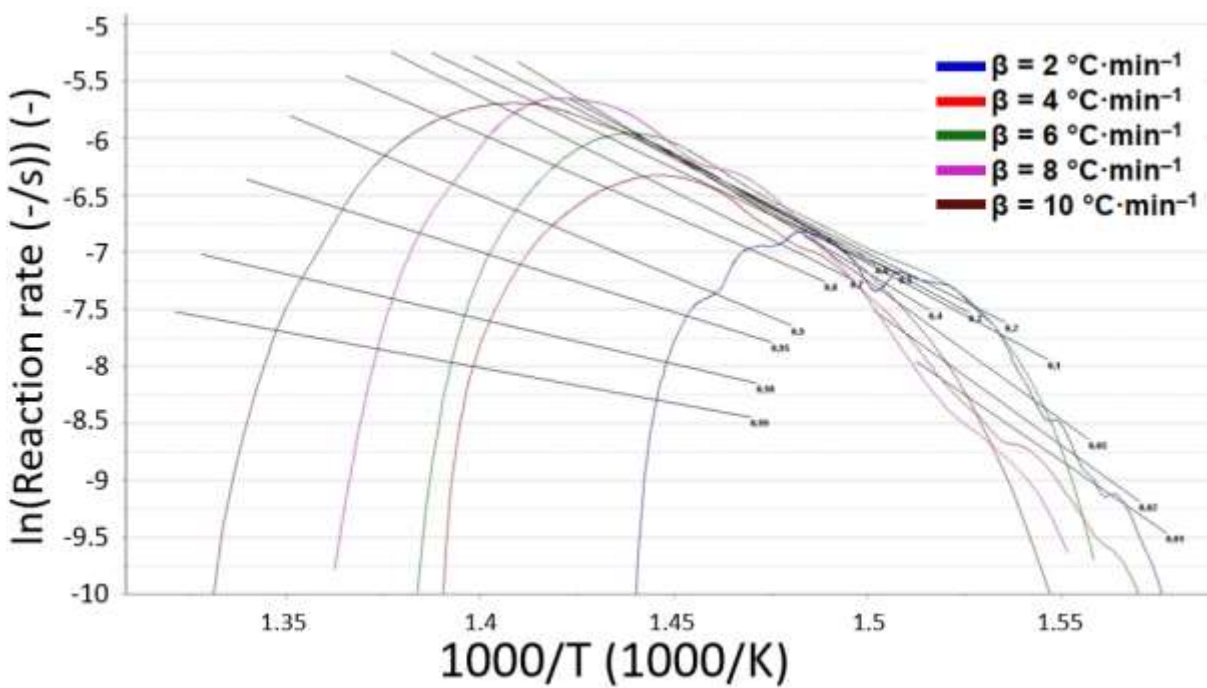


(a)

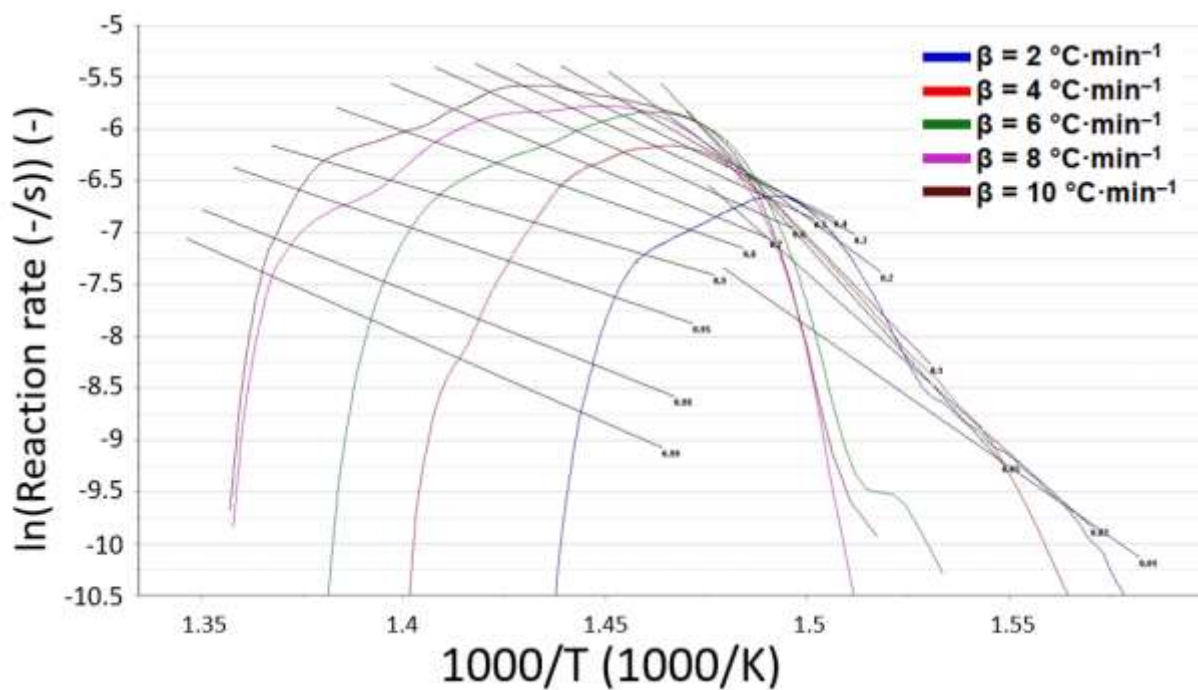


(b)

Figure S10. The plot according to the ASTM E698 kinetic method with the estimated activation energy of “process 2” for: (a) LNG and (b) LNGMIX

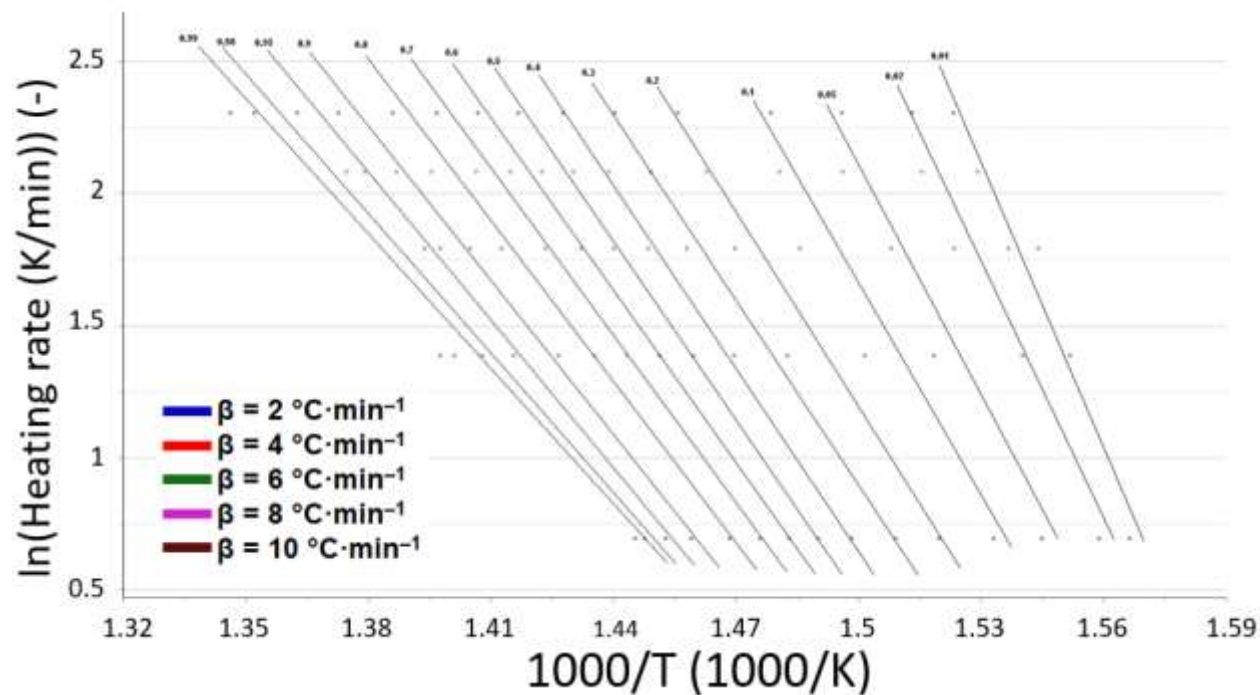


(a)

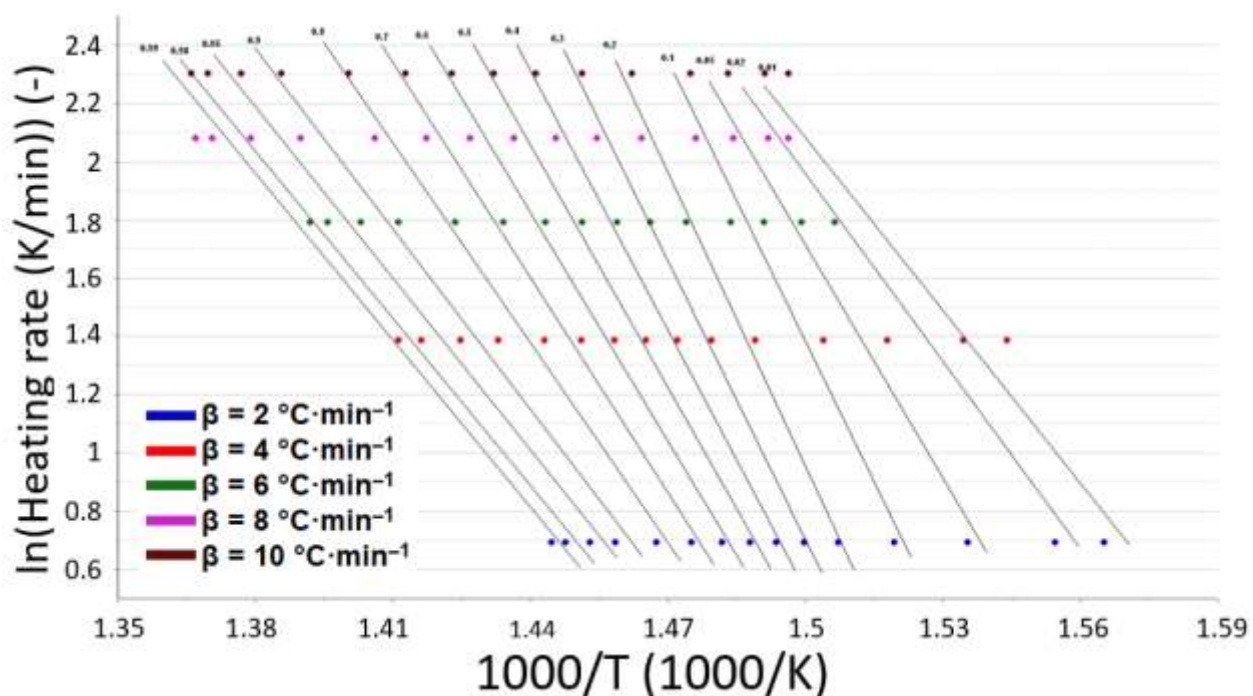


(b)

Figure S11. Linear plotting of FR differential isoconversional method of the analyzed “process 2” of decomposition for: (a) LNG and (b) LNGMIX



(a)



(b)

Figure S12. Linear plot of FWO integral isoconversional method of the analyzed "process 2" of decomposition process for: (a) LNG and (b) LNGMIX

Table S1. Variation of E_a vs. α for both samples LNG and LNGMIX for “process 2” using the FR and FWO isoconversional methods

| α | Variation of E_a (kJ·mol ⁻¹) vs. α for | | | |
|------------------------------------|---|-----------|------------|-----------|
| | LNG | | LNGMIX | |
| | FR | FWO | FR | FWO |
| 0.05 | 203.5 | 228.5 | 361.3 | 211.1 |
| 0.1 | 151.3 | 211.9 | 338.0 | 254.4 |
| 0.15 | 146.6 | 202.1 | 280.9 | 266.2 |
| 0.2 | 141.3 | 194.4 | 239.3 | 265.5 |
| 0.25 | 146.9 | 188.4 | 210.4 | 259.9 |
| 0.3 | 151.0 | 184.4 | 186.5 | 252.3 |
| 0.35 | 174.9 | 182.2 | 168.1 | 243.7 |
| 0.4 | 170.4 | 182.3 | 157.1 | 235.0 |
| 0.45 | 154.1 | 180.5 | 152.7 | 227.0 |
| 0.5 | 144.7 | 177.9 | 147.9 | 219.6 |
| 0.55 | 139.2 | 175.0 | 146.9 | 212.8 |
| 0.6 | 134.7 | 172.1 | 145.7 | 206.7 |
| 0.65 | 136.2 | 169.2 | 139.5 | 200.8 |
| 0.7 | 139.1 | 166.7 | 133.2 | 194.7 |
| 0.75 | 130.4 | 164.1 | 122.0 | 188.1 |
| 0.8 | 121.8 | 160.9 | 111.5 | 180.7 |
| 0.85 | 122.5 | 157.3 | 99.5 | 172.4 |
| 0.9 | 118.5 | 153.9 | 94.6 | 163.1 |
| 0.95 | 87.8 | 147.5 | 109.6 | 154.8 |
| \bar{E}_a / kJ·mol ⁻¹ | 142.9±5.6 | 178.9±4.7 | 176.0±17.7 | 216.2±8.1 |