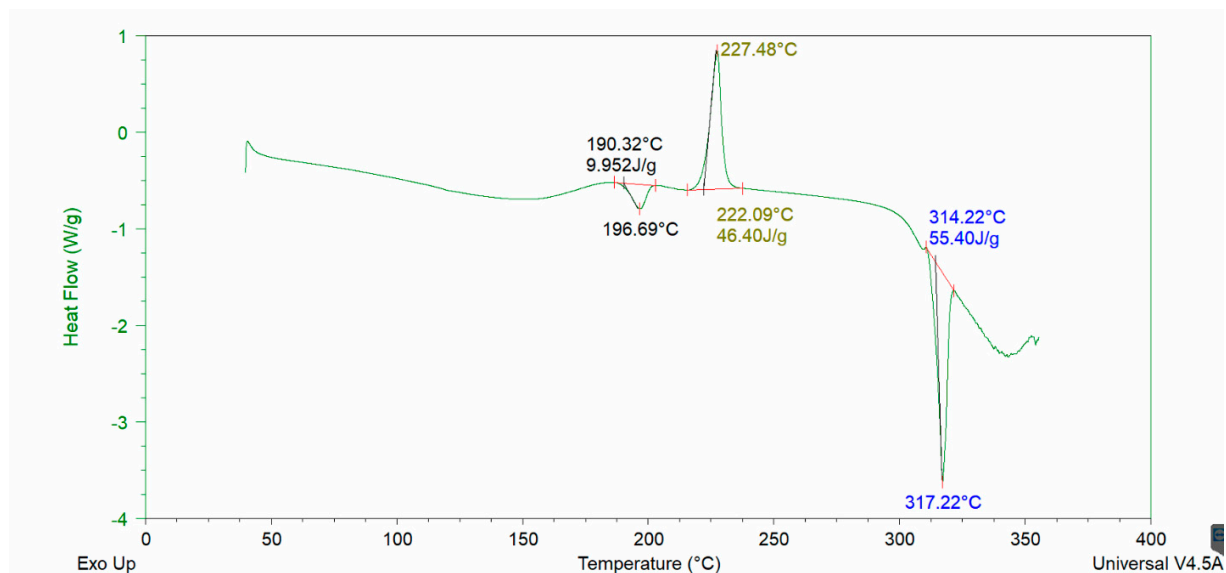
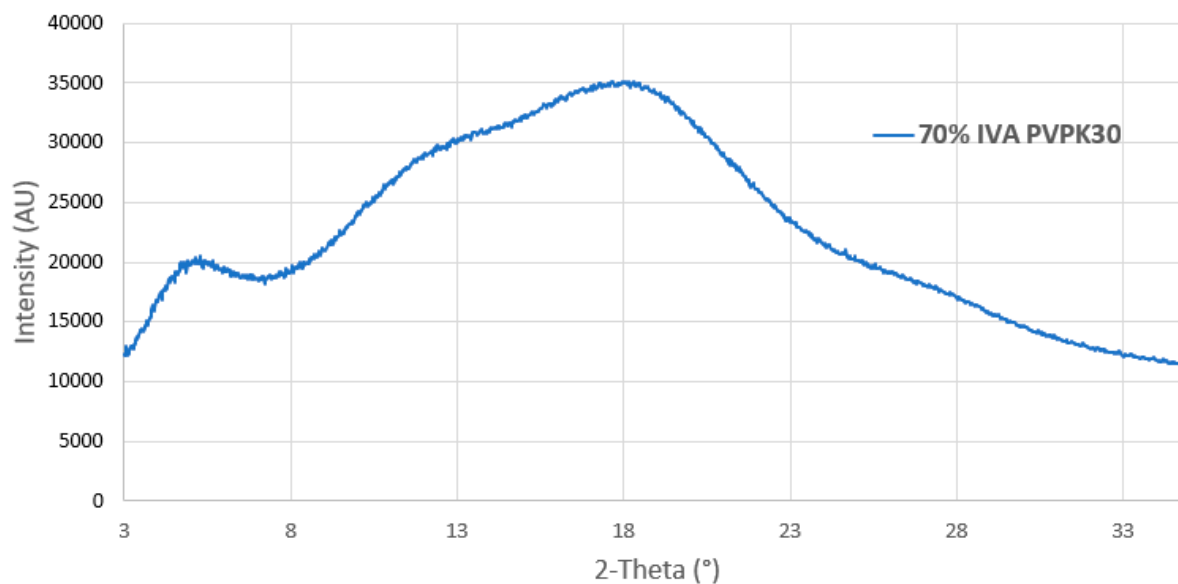
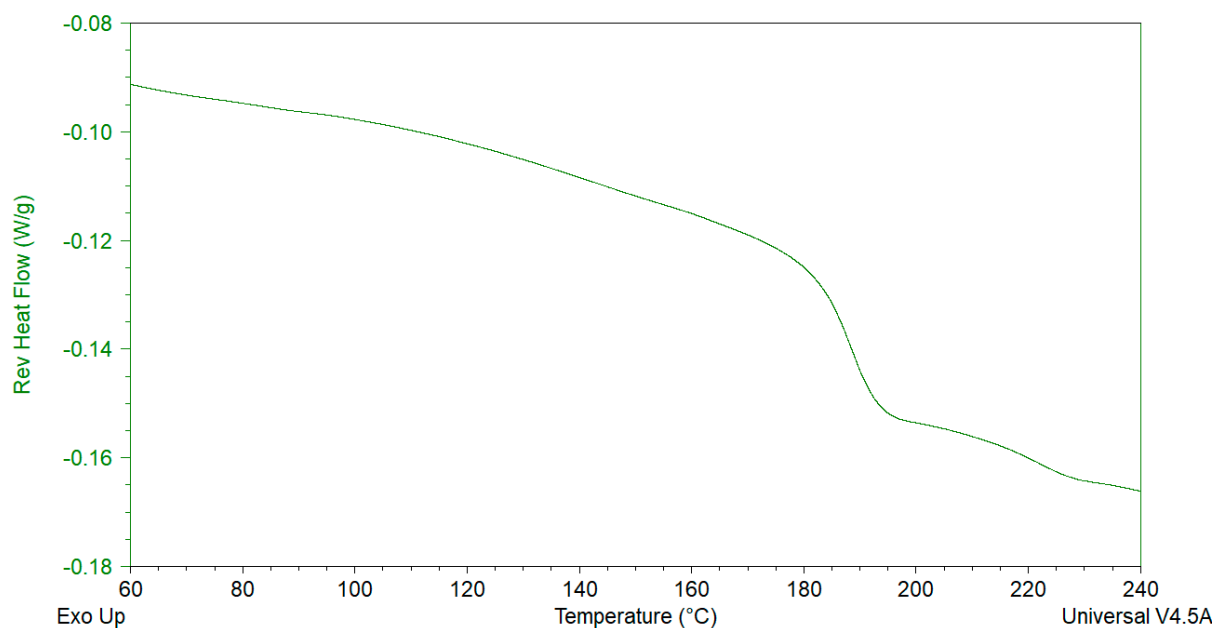


## 1. Supplemental Information

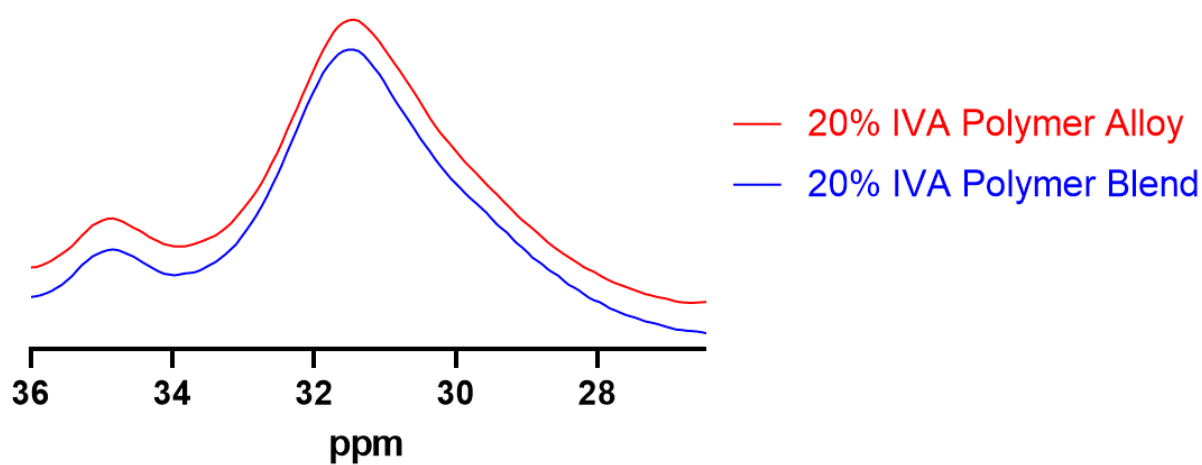


Supplemental Figure S1: mDSC of pure IVA showing two endothermic events: one event at 196.7 °C and one event associated with the melting of IVA at 317.2 °C, as well as one exothermic event at 227.5 °C that is potentially associated with a polymorph change.





Supplemental Figure S2. PXRD and mDSC of 70% IVA PVPK30 ASD prepared by KinetiSol using PVPK30 that had been pre-processed, milled, and sieved to have a particle size range of 500  $\mu\text{m}$  -1200  $\mu\text{m}$ .



Supplemental Figure S3:  $^{13}\text{C}$  ssNMR of 20% IVA polymer alloy and 20% IVA polymer blend ASDs. It should be noted that the peak at 31.44 ppm is comprised of overlapping carbons from PVP (backbone methylene carbon) and IVA (methyl carbons of tert-butyl groups). Units are arbitrary and spectra are overlaid for visual clarity.

Supplemental Table S1: Compositions of tablets containing 150 mg IVA used in dissolution studies.

ASD Drug Load	20% IVA	40% IVA	80% IVA
Percent w/w ASD	60%		
Mass of ASD per 150 mg dose	750 mg	375 mg	187.5 mg
Mass NaCl (10%)	125 mg	62.5 mg	31.25 mg
Mass Na <sub>2</sub> SO <sub>4</sub> (10%)	125 mg	62.5 mg	31.25 mg
Mass Microcrystalline Cellulose (10%)	125 mg	62.5 mg	31.25 mg
Mass croscarmellose	120 mg	60 mg	30 mg
Mass SLS	5 mg	2.5 mg	1 mg
Total tablet mass	1250 mg	625 mg	312.5 mg