

Data-Driven Modelling of a Pelleting Process and Prediction of Pellet Physical Properties SUPPLEMENTARY INFORMATION

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Appendix A

Table S1 Variables in the Compaction Simulator summary dataset (X1)

No.	Stage	Variable name
1	Filling	Die filling height (mm)
2	Pre-compression	Upper punch compression force (MPa)
3		Lower punch compression force (MPa)
4		Upper punch compression displacement (mm)
5		Lower punch compression displacement (mm)
6		Compression thickness (mm)
7		Corrected compression thickness (mm)
8		In-die recovery thickness (mm)
9		Compression radial pressure (MPa)
10		Residual die wall pressure (MPa)
11		Theoretical compression time (ms)
12		Real compression time (ms)
13		Real dwell-time (ms)
14		Theoretical dwell-time (ms)
15		Rearrangement Energy (J)
16		Compression Energy (J)
17		Flow Energy (J)
18		Elastic Energy (J)
19		Plastic Energy (J)
20	Relax	Theoretical relax time (ms)
21		Relax time (ms)
22	Main compression	Upper punch compression force (MPa)
23		Lower punch compression force (MPa)
24		Upper punch compression displacement (mm)
25		Lower punch compression displacement (mm)
26		Compression thickness (mm)
27		Corrected compression thickness (mm)
28		In-die recovery thickness (mm)
29		Compression radial pressure (MPa)

30		Residual die wall pressure (MPa)
31		Theoretical compression time (ms)
32		Real compression time (ms)
33		Real dwell-time (ms)
34		Theoretical dwell-time (ms)
35		Rearrangement Energy (J)
36		Compression Energy (J)
37		Flow Energy (J)
38		Elastic Energy (J)
39		Plastic Energy (J)
40	Ejection	Real relax time before ejection (ms)
41		Theoretical relax time before ejection (ms)
42		Ejection force (N)
43		Ejection time (ms)
44		Take-off maximum force (N)
45	Energy	Rearrangement Energy (J)
46		Compression Energy (J)
47		Flow Energy (J)
48		Elastic Energy (J)
49		Plastic Energy (J)
50		Ejection Energy (J)