

This folder contains data used in the reported article (Ahmed et al., 2018). Should you use this data set for your work, please kindly cite the article (Ahmed et al., 2018).

The folder contains subfolders: '1. FBRM counts', '2. CLD inversion', '3. Particle size and shape', 'PVM images' and 'Surface energy distributions'.

1. FBRM counts

In this subfolder, data collected from the Mettler Toledo focused beam reflectance measurement probe (G400 series) is shown. The raw inline total count profiles (macro view mode) are shown for each of the different wet milling configurations tested (A to F) on acetaminophen (Ahmed et al., 2018). The total count profiles without normalisation have been exported from start to end for each of the experiments. Data for each experiment has been extracted into Microsoft Excel files for ease of access.

2. CLD inversion

The CLD-inversion app (Agimelen et al., 2015) was used on selected experiments consisting of with and without wet milling (Ahmed et al., 2018). The output data estimated particle size (PSD) at specified intervals during each of the wet milling experiments. Each folder (2.1 to 2.4) contains raw CLD counts obtained from the Mettler Toledo focused beam reflectance measurement probe (G400 series) and inverted CLDs using the software app (Agimelen et al., 2015) during the seed hold period to end wet milling period. All data is reported in excel files.

3. Particle size & shape

This subfolder contains offline particle size and shape distributions obtained from the Malvern Morphologi G3 instrument. For particle size, all data was extracted from the instrument and into excel files (A to G) for each of the wet milling configurations tested. Likewise for shape, all data was extracted from the instrument into excel files (A and B) where only circularity and aspect ratio distributions were shown for shape. The distributions are shown for the end particle sizes and shapes.

4. PVM images

This subfolder 'PVM images', contains images collected with the inline Mettler Toledo particle vision and measurement (PVM) V819 probe (Ahmed et al., 2018). Raw images are shown for a multiple-stage configuration from start to end and for a cooling crystallisation without wet milling experiment from start to end. PVM images for other wet milling configurations are shown in the article (Ahmed et al., 2018).

5. Surface energy distributions

In this subfolder, all data measured through the inverse gas chromatography instrument was extracted to excel files. These files contain the surface area, surface energy, surface heterogeneity and area increment distributions for the different wet milling configurations tested (A to B). Method details used for obtaining surface property information is reported in the article (Ahmed et al., 2018).

Agimelen, O.S., Hamilton, P., Haley, I., Nordon, A., Vasile, M., Sefcik, J., Mulholland, A.J., 2015. Estimation of particle size distribution and aspect ratio of non-spherical particles from chord length distribution. *Chemical Engineering Science* 123, 629-640. <https://doi.org/10.106/j.ces.2014.11.014>

Ahmed, B., Brown, C.J., McGlone, T., Bowering, D.L., Sefcik, J., Florence, A.J., 2018. Engineering of Acetaminophen Particle Attributes Using a Wet Milling Crystallisation Platform. *Int J Pharmaceut* 554, 201-211