

Gamlen® D1000

Powder characterization to check the functionality of formulations and excipients against USP <1062> compaction and lubrication properties

See the effect of tablet formulation and process variations prior to manufacturing

Use compaction curve analysis for high sensitivity differentiation using machine learning system

Measure full tablet detachment and ejection profiles as a function of punch displacement

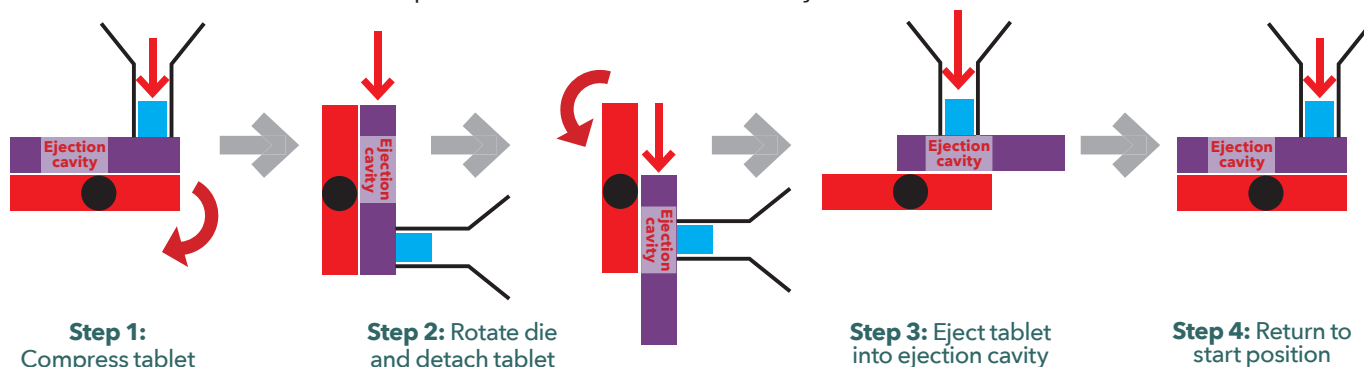
Complete data processing package when used in conjunction with Gamlen® Dashboard software



Gamlen® 
Instruments
Helping you make better tablets

INTEGRATED DETACHMENT FORCE MEASUREMENT

The new rotatable die system simplifies operation and generates important new data at the same time. The operational sequence is completed entirely on the instrument using the load cell to detach the tablet from the lower punch as well as eject it. The result is detailed measurement of tablet compaction, detachment and ejection behaviour.



Optional extras THE GAMLEN® DASHBOARD

The Gamlen® Dashboard offers a complete analytical system for measuring all tablet Critical Quality Attributes including the tests set out in USP<1062> Tablet Compaction Characterization.

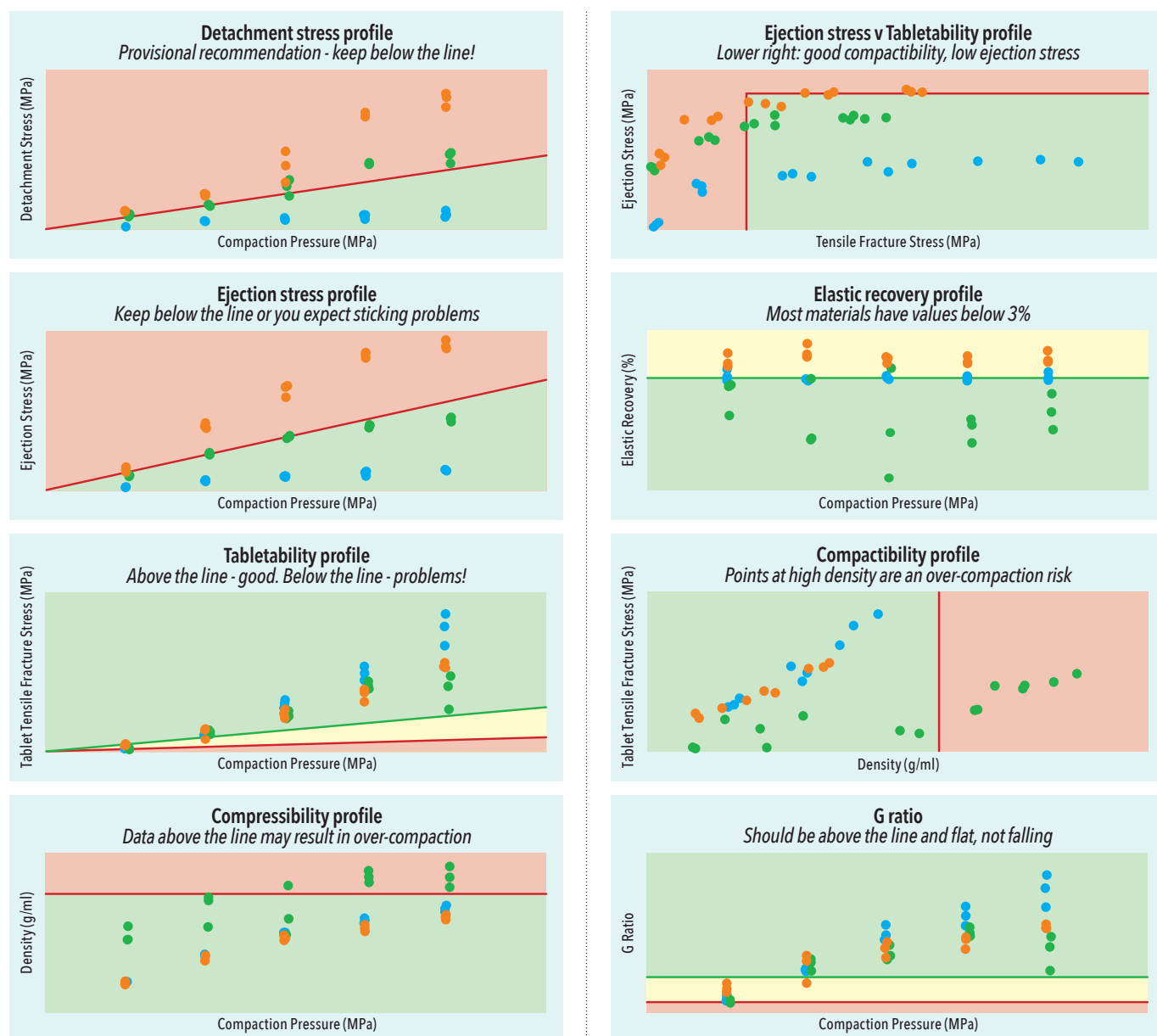


Figure 2 KEY • Sample 1 • Sample 2 • Sample 3

Good Borderline Poor

DATA ANALYSIS

The data are shown in Figure 2 opposite

Clear differences are seen between the different USP <1062> properties of tabletability, compressibility and compactibility of the three samples. The tabletability of Sample 1 (blue) is substantially higher than the tabletability of the other samples. In addition, the tensile fracture stress rises disproportionately with the increasing compaction behaviour.

The compressibility plots showed that the density of sample 2 was consistently higher than the density of samples 1 and 3 at all pressures.

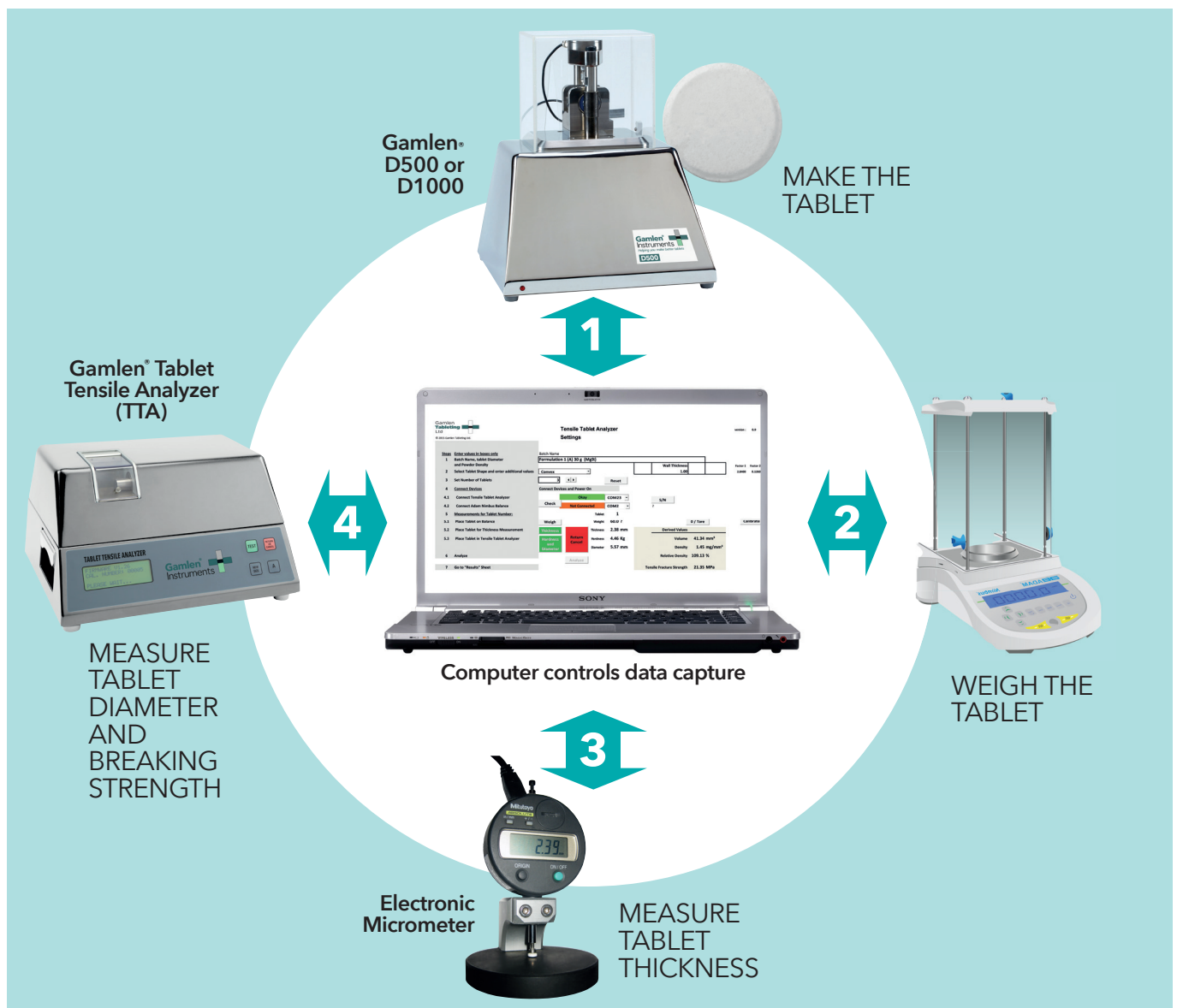
The compactibility plots showed that materials 1 and 3 lie on the same tensile

fracture stress/density line which indicates great similarities between them. In fact the manufacturer indicated that the main difference between them is the particle size.

Material 1 showed low detachment and ejection stresses at all pressures, with very little effect of compaction pressure. Material 2 was borderline for acceptability of ejection and detachment stresses, and Material 3 showed excessive values of both ejection and detachment.

The elastic recovery of materials 1 and 3 were normal, in the range 0-3%. However material 2 showed negative elastic recovery which means that the tablet contracts after ejection.

THE GAMLEN® DASHBOARD MEASUREMENT SYSTEM



TABLET TENSILE ANALYZER AND MICROMETER

The Tablet Tensile Analyzer (TTA) has been specially developed to simplify the evaluation of tablet samples made on the Gamlen® D1000. It is supplied with an optional electronic micrometer.

Tablet fracture is performed at slow speed to generate true tensile fracture stress measurements.

The computer captures tablet diameter and fracture load and transfers it to a spreadsheet for automatic analysis.



TABLET TENSILE ANALYZER



ELECTRONIC MICROMETER

TABLET MEASUREMENTS

Weight
Thickness
Diameter
Breaking strength

CALCULATED VALUES

Tablet density
Tablet tensile fracture stress
Solid fraction
G-ratio

GAMLEN® D1000 SPECIFICATION

Tablet punch size	2 - 15 mm diameter
Material capacity of the die	10 - 1000 mg
Compaction rate	0.01 - 3 mm/s
Data capture rate	10-1000 Hz
Maximum load	1000 kg
Load cell travel	40 mm
Test height	Maximum extension of 300 mm
Detachment System punch size range	3 - 10 mm
Load selection	User selected by computer interface
Load cell resolution	1:5000
Calibration	Dead weights in kg or proving ring
Power requirements	80-260 VAC 3.15A
Instrument dimensions	320 x 285 x 388 mm
Instrument weight	24kg
Shipping size	390 x 350 x 390 or 460 x 430 x 480 mm
Shipping weight approx	28kg

Have a question? Like a quotation? Want to see a demonstration?

Then email michael.gamlen@gamlentableting.com or call us now on **+44 115 912 4271**

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