**EFFECT OF COMPRESSION FORCE ON TABLET HARDNESS AND DISINTEGRATION TIME**

**AIM**

To determine the effect of compression force on tablet hardness and disintegration time.

**PRINCIPLE**

**Hardness**

Physical strength of the tablet.

**Disintegration time**

Disintegration time determines the weather dosage forms such as tablets, capsules, and suppositories disintegrate with in a prescribed time when placed in a liquid medium under the prescribed experimental conditions.

The disintegrate of the tablets to capping, abrasion under conditions of storage, transportation and handling before usage depends upon its hardness.

As the hardness of the tablet increases, then the force applied to break the tablet also increases, as disintegration time is longer.

**PROCEDURE**

* Prepare three batches of paracetamol tablets using wet granulation method.
* Further those tablets are compressed at three different compression forces.
* Then the hardness of the tablets estimate by using MONSANTO hardness tester.
* We observe that the tablets that are compressed at less compression force breaks quickly when compared to the tablet compressed at more compression forces.
* Then these three batches of prepared tablets are then allowed to test for its disintegration time by using disintegration time apparatus.
* Finally, we observe that the tablets compressed at low compression forces disintegration fast and those tablets prepared at high compression force, disintegration slowly. And hence the disintegration time is longer.

**REPORT:**

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| --- | --- | --- | --- |
| **Batch** | **Compression force** | **Hardness kg/cm2**  **(Avg of 3 tablets)** | **Disintegration time in mins (Avg of 3 tablets)** |
| I | Low (3000 lbs) |  |  |
| II | Moderate (10000 lbs) |  |  |
| III | High (20000 lbs) |  |  |