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Aim:

To determine the percentage loss of weight of the tablet after being tested with friability tester.

Reference:

Khan and Vyas "Industrial Pharmacy" CBS publication and distributions, 4th edition.

Requirement:

(i) Tablet
(ii) Weighing balance
(iii) Friability tester

Theory:

Tablet is not an absolute indicator of strength since some formulations, when compressed into very hard tablets, tend to "cap" on attrition, losing their crown portion. Therefore another measure of a tablet's strength, its friability is often measured. Tablet that tend to powder, chip and fragment when handed lack elegance and consumer acceptance, and can create excessively dirty process in such area of manufacturing

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as coating and packaging. They can also add to a tablet weight variation or content ~~uniforming~~ uniformly problems.

The Friability test is official in USP but not in B.P. and I.P. The laboratory friability tester is known as the Roche Friabilator.

Subject a number of tablets to the combined effect of abrasion and shock by utilizing a transparent synthetic polymer chamber with an internal diameter between 283 and 291 mm and a depth between 36 to 40 mm that revolves at 25 ± 1 rpm. The tablet are tumbled from a distance of six inches at each turn of the drum by a curved projection. Normally a preweighed tablet sample is placed in the friabilator (W), which is then operated for 100 revolutions.

Generally, the test is run once. If obviously, cracked, cleaved, or broken tablets are present in the tablet sample after tumbling, the sample fails the test. If the results are difficult to interpret or if the weight loss is greater than the targeted value, the test should be repeated twice and the mean of three tests determined. A maximum means weight loss from the three samples of not more than 1.0% is generally considered acceptable for conventional compressed tablets.

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some chewable tablets are most effervescent tablets undergo high friability weight losses, which accounts for the special stack packaging that may be required for ~~three~~ these types of tablets. When capping is observed on friability testing, the tablet should not be considered for commercial use, regardless of the percentage of loss seen.

When concave is especially deep concave punches are used in tabletting, and especially when the punches are in poor condition or worn at their surface edges, the tablets produced result in "whiskering" at the tablet edge. such tablet have higher than normal friability values because the "whiskers" are removed in testing. Tablet friability may also be influenced by the moisture content of the tablet granualation and finished tablets. A low but acceptable moisture level frequently acts as a binder. Very dry granulation that contain ~~any~~ only fractional percentage of moisture often produce more friable tablet than do granulations containing 2 to 4 % moisture. For this reason, the manufacture of chemically stable tablets that contain some hydrolyzable drugs that are mechanically sound to difficult.

Procedure:

(i) 10 tablet are selected and weigh.

(ii) All tablet were put into the drum of the tablet abrasion or Friability tester. The rate of rotation was set to 100 rpm for 10 minutes and operation was started.

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(iii) All tablets were removed at the end of the operation and ensure to be free from dust or powder by using the brush. The tablet were reweight. The percentage loss of weight was determined.

(iv) Compress tablet should not less more than 1% of its weight.

Discussion:

- In friability test the tablet are thrown to abrasion hence enabling us to check for the tablet strength under application of force in different manner.
- It can be pause by number of factor including poor tablet design (too sharp edges), low moisture content and insufficient bindre.
- Efferbescene tablet and chewable tablet may have different specification as far as friability is concern.
- Tablet should be hard enough so that they don't break up in the bottle. However still friable enough so that they can disintegrate in the gastrointestinal track.
- Tablet prone to capping during the best are considered unfit for commercial use.
- Friability test is influenced by internal factors like that moisture content of tablet granule and finished tablets.

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Result:

The percentage loss of weight of the tablet after being tested with friability tester was successfully performed in the laboratory.

Sowmya
01/06/22

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