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# Orodispersible Tablets: A Popular Growing Technology

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**ABSTRACT**

The orodispersible drug delivery technology is now widely employed to increase patient compliance and bioavailability**.** ODTs are solid dose forms for medications that, when placed on the tongue, dissolve quickly, typically in a matter of seconds. Orodispersible tablets are designed primarily for children, seniors, and bedridden patients as well as for people who have Dysphagia (swallowing problems) and are unable to drink water. Orodispersible tablets are known as rapid dissolving tablets because they are made to dissolve in the saliva within a short period of time (less than 60 seconds).The benefits of ODTs include better bioavailability, patient compliance, precise dosing, simple transport and manufacture, and superior physical and chemical stability. The current article focuses on ideal qualities, benefits, drawbacks, various formulation technologies created for ODTs, evaluation techniques, and prospects in the future.

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## INTRODUCTION:

Due to its straightforward nature, ability to alleviate pain, adaptability (to accept a variety of medication candidates), and most significantly, patient compliance, oral administration is the most often used route. Solid oral delivery devices are also less expensive to create because they don't need to be made in sterile conditions. In order to address the physicochemical and pharmacokinetic attributes of medications and enhance patient compliance, several innovative technologies for oral delivery have recently become available.[1] Today's healthcare organizations have focused on reliable oral drug delivery technologies that guarantee higher patient compliance and efficient dosing.[2] Novel drug delivery technologies have made significant strides towards boosting drug safety while retaining therapeutic efficacy. The therapeutic advantage provided by fast-dissolving dosage forms results from the fact that they dissolve and release the pharmaceutically active chemicals immediately when they come into touch with saliva, all without any demand for water.[3]FDTs are perfect for busy persons but are not designed for individuals who have problems swallowing. Another name for fast-dissolving tablets is "mouth dissolving tablets," "melt-in-mouth tablets," "rapid melts," "porous tablets," and "quick dissolving tablets."[4]

Many researchers are interested in the mouth-dissolving tablets. Tablets, pills, and powders can be challenging to swallow for many older individuals. These tablets are designed to dissolve or disintegrate in the mouth without the need for water to remedy this issue. Saliva aids in the disintegrating mass's smooth descent via the esophagus, enabling even those who have trouble chewing or swallowing to ingest it minimal issue.[5] A fast-dissolving tablet (FDT) has been defined by the US Food and Drug Administration (USFDA) as "a solid dosage form comprising a therapeutic drug or active component which disintegrates rapidly, generally within seconds when placed upon the tongue." The medications are designed to break down or disintegrate quickly in the mouth, frequently in less than 60 seconds. Additionally, as instead of traditional tablets, there is less medication accessible to first pass metabolism.[6]

### Objectives[7]

- ✓ Improvement of bioavailability
- ✓ To increase patient compliance
- ✓ Avoiding the first-pass metabolism

✓ To promote stability

**Ideal properties of Orodispersible tablets** [8, 9]

➢ Generally rapidly dispersing tablets require very little water for oral delivery; the formulation should easily dissolve in water in a matter of seconds to minutes.

➢ Simple to transport

➢ Easy manufacturing technique

➢ ODTs are less responsive to external factors like pressure and temperature.

➢ Tablets used for dispersion ought to have a large medication loading capacity.

**Advantages of Orodispersible tablets** [10, 11]

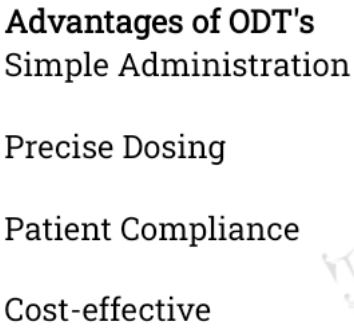


**Fig. No. 1 Advantages of Orodispersible tablets**

✓ Patient compliance

✓ No water is needed.

✓ Can be made to leave little to no aftertaste in the mouth and offer you a pleasant mouth sensation.

✓ Precise dosing.

✓ Able to give the features of liquid medicine in the form of a solid formulation.

✓ Cost-effective due to lower expenses for production, wrapping, and delivery.

✓ Taste masking results in better taste.

✓ Administration made simple for people who have trouble swallowing.

**Disadvantages of Orodispersible tablets**[12]

✓ Typically, these tablets are lacking sufficient mechanical strength. So, handling must be done with caution.

✓ Fast dissolving tablets require a certain kind of packaging in order to maintain the stability as well as the security of the product at the highest level.

✓ They are more susceptible to damage from humidity and temperature. ODTs need to be preserved in a dry atmosphere because they are naturally hygroscopic**.**

**The Need for Development of ODT's** [13-15]

Patient factors
Effectiveness factor
Manufacturing and marketing factors

**Fig. No.2 Need for Development of ODT's**

**A) Patient factors**

- Patients in pediatrics and the elderly who have trouble chewing or swallowing solid dose forms.
- A person with chronic nausea who might be travelling or has limited or no access to water.
- Patients who are very old and may not be able to swallow an antidepressant daily.
- Patients who are afraid of choking and will not take a solid medication.

**B) Effectiveness factor**

These formulations make a lot of claims about increased bioavailability and quicker onset of effect. Whenever a medication dissolves fast, pregastric absorption from some formulations ions occurs as an outcome of the salivary dispersion. Any pre-gastric absorption eliminates first pass metabolism, which can be very helpful for medications that are subject to hepatic metabolism.

**C) Manufacturing and marketing factors**

A newly developed dosage form gives a producer the opportunity to increase market exclusivity, distinctive differentiation of goods, value-added product line enlargement, and patent protection while providing a more practical dosage form to its patient the latter group. In addition to strengthening patient populations who are underserved and undertreated, it boosts revenue.

**Mechanism of Action of Superdisintegrants** [16-19]

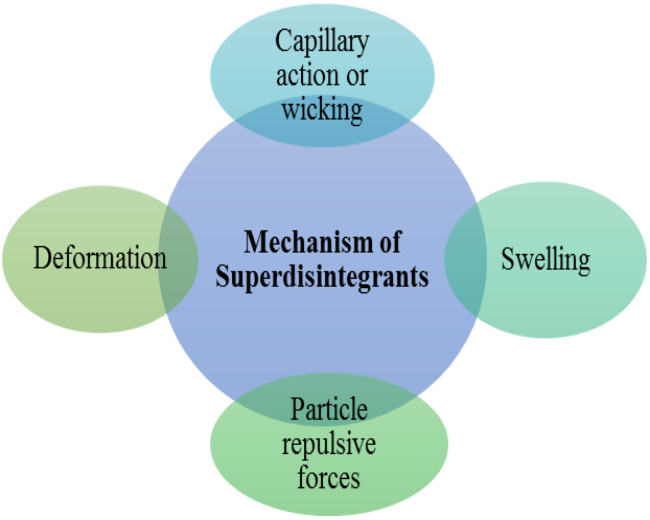


**Fig.No.3 Mechanism of Superdisintegrants**

**1. Capillary Action**

The initial stage is always disintegration by capillary action. When the tablet is submerged in the correct water-based solution, the medium permeates the tablet and substitutes the air adsorbed on the particles, breaking the intermolecular link and leading the tablet to break into small pieces.

**2. Swelling**

Due to insufficient swelling force, tablets that have extensive porosity disintegrate poorly. The low porosity tablet, on the reverse hand, experiences enough swelling force.

**3. Particle repulsive forces**

Guyot-Hermann's concept of particle repulsion is based on his discovery that non-swelling particles also contribute to tablet disintegration. Water needs to exist for the mechanism of disintegration, which is based on the electric repulsive interactions between particles.

**4. Deformation**

Granules had major deformation during compression, which increased the starch's ability to expand. The tablet breaks into pieces as a result of the enlarged distorted particles.

**Difficulties to ODTs' development and desired traits** [20-23]

- **Mechanical strength and duration of disintegration**

Many ODTs are brittle, and there is an excellent chance that a broken tablet will occur during packaging, transport, or patient handling. It is only obvious that higher mechanical strength is going to extend the time required to disintegration.

- **Tastes masking**

The flavor concealing constitutes one of the most crucial elements when it comes to orally dispersible pills. Consequently, they should be formulated with a suitable taste-masking substance. The taste masking of medications becomes essential to patient compliance when delivery systems crumble or dissolve in patients' oral cavities, releasing the active chemicals that come into interaction with the taste buds.

- **Mouth feel**

The FDTs should disintegrate into the tiniest possible particles after that. Furthermore, adding tastes and cooling substances like menthol improves the mouth feel.

- **Drug Properties**

The effectiveness of ODTs may be impacted by a variety of pharmacological characteristics. For instance, the features of the final tablet, such as tablet strength and disintegration, can be greatly influenced by the solubility, crystal morphology, particle dimension, hygroscopicity, compressibility, and bulk density of a medicine.

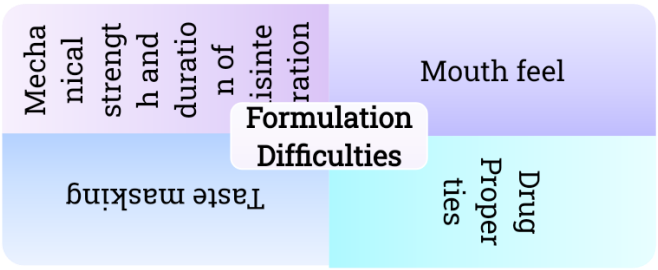


**Fig.No.4 Formulation Difficulties in ODT Development**

**Criteria for the selection of Drug Candidate**[24]

- Has a passable capacity to conceal flavor.

- Should be more durable.
- Show little susceptibility to environmental factors like humidity and temperature.
- Drugs should be palatable.
- The drug should be partially united at the pH surrounding the oral cavity.
- After administration, very little mouth residue should be left behind.

**Drugs to be incorporated in Orodispersible Drug Delivery System** [25-26]

**Table No.1: List of drugs used in Orodispersible tablets**

| Sr.No. | Activity | Examples of Drugs |
|---|---|---|
| 1. | **Analgesics and Anti-inflammatory Agents** | Meclofenamic acid, mefenamic acid, Nabumetone, Naproxen, Oxaprozin, Phenylbutazone, Piroxicam, Sulindac, Benorylate, Diflunisal, Etodolac, Fenbufen, FenoprofenCalcim, Ibuprofen, Indomethacin, Ketoprofen. |
| 2. | **Anti-Arrhythmic Agents** | Disopyramide, Flecainide Acetate, Amiodarone, and Quinidine Sulphate. |
| 3. | **Anticoagulants** | Nicomalone, phenindione, dicoumarol, and dipyrimidine. |
| 4. | **Anti-Diabetics** | Acetohexamide, chlorpropamide, glibenclamide, gliclzide, glipizide, and tolbutamide. |
| 5. | **Antiepileptic's** | Benzodiazepines,beclomid, carbamazepine, clonazepam, methoin, methsuximide, methylphenobarbitone, oxycarbazepine, paramethadione, phenacemide, phenobarbitone, and phenytoin, Valproic Acid. |
| 6. | **Anti-gout** | Allopurinol, Probenecid, and Sulphinpyrazone. |
| 7. | **Anti-hypertensive** | Amlodipine, Carvedilol, Benidipine, Dilitazem, Diazoxide, Felodipine, Guanabenz Acetate, Isradipine, Minoxidil, Nicardipine, Nifedipine, Nimodipine, Phenoxybenzamine, Prazosin, and Terazosin. |
| 8. | **Anti-malarial** | Chloroproguanil HCL, pyramethamine, chloroquine, mefloquine, amodiaquine, |
| 9. | **Immunosuppressant's and Anti-cancer** | aminoglutethimide, amsacrine, azathioprine, busulphan, chlorambucil, cyclosporin, dacarbazine, and estramustine.Etoposide, Lomustine, Melphalan, Mercaptopurine, Mitomycin, Mitozantrone, Procarbazine, Tamoxifen Citrate, and Testolactone. |
| 10. | **Anti-thyroid** | Carbimazole and propylthiouracil. |
| 11. | **Sedatives, Hypnotics, Neuroleptics, and Anxiety-relieving** | Alprazolam, Amyiobarbitone, Barbitone, Bentazeparn, Bromazepam, Bromperidol, Brotizoiam, Butobarbitone Clobazam, Clotiazepam, Clozapine, Diazepam, Ethinamate, Flunanisone, Carbromal, Chlordiazepoxide, Chlormethiazole,Haloperidol, Flurazepam, Fluopromazine, Flupenuiixol Decanoate, Fluphenazine Decanoate, Midazolam, Nitrazepam, Oxazepam, |

| | | |
|---|---|---|
| | | Pentobarbitone, Prochlorperazine, Suipiride, Temazepam, Thioridazine, Triazolam, and Zopiclone. |
| 12. | **Sex hormones** | clomiphene citrate, danazol, methyltestosterone, medroxyprogesterone acetate, mestranol, norgestrel, conjugated oestrogens, progesterone, stanozolol, stiboestrol, testosterone, and tibolone. |
| 13. | **Proteins, Peptides, and Recombinant drugs** | Glucagon, Growth Hormone (Somatotropin), Insulin (Hexameric/Dimeric/Monomeric Forms), Polypeptides or Their Derivatives, Calcitonins and Synthetic Modifications Thereof, Enkephalins, and Interferons. |
| 14. | **Opioid Analgesics** | Codeine, Dextropropoxyphene, Diamorphine, Dihydrocodeine, Meptazinol, Morphine, Nalbuphine, and Pentazocine. |
| 15. | **Diuretics** | Acetazolarnide, Amiloride, Bendrofluazide, Bumetanide, Chlorothiazide, Chlorthalidone, Ethacrynic Acid, Frusemide, Metolazone, Spironolactone, and Triamterene. |

**Criteria for the selection of Superdisintegrants**[27]

Super disintegrants must meet the following criteria:

✓ They must cause the tablet to dissolve quickly when it comes into touch using saliva in the mouth or oral cavity.

✓ Being compact will enable you to create less fragile tablets.

✓ Make patients' mouths feel good. Small particle size is preferred to ensure patient compliance.

✓ Have good flow since it improves the flow characteristics of the whole mix.

**List of Superdisintegrants used in the manufacturing of the ODT's** [28, 29]

**Table No.2 List of Synthetic Superdisintegrants**

| Superdisintegrants | Example of Superdisintegrants | Mechanism of Action | Special Remarks |
|---|---|---|---|
| **Cross-linked Cellulose** | Primellose®, Crosscarmellose®, Ac-Di-Sol®, L-HPC, Solutab®, Vivasol®, and Nymce ZSX® | In about 10 seconds, it swells 4 to 8 folds. Wicking in addition to swelling. | Has a two-dimensional swelling. either granulation or direct compression Starch free |
| **Cross-linked starch** | Primogel®,Explotab ® | Within 30 seconds, swells of 7–12 folds. | Swells at high levels and in three dimensions serve as a matrix for sustained release. |
| **Cross-linked PVP** | Crosspovidon M® Polyplasdone® Kollidon® | Swells relatively little and shrinks down to its original size following compression; yet, it works by capillary action. | Get a porous pill because it is not water soluble and spongy by nature. |
| **Soy polysaccharides** | Emcosoy® | | Contains neither sugar nor starch. Utilized in food products. |
| **Cross-linked alginic Acid** | Alginic acid NF | Aqueous medium swelling that occurs quickly or wicking action | Encourage granulation, whether dry or moist, to disintegrate. |
| **Calcium silicate** | | Wicking action | Extremely porous, Light weight |

**Selection of Excipients for ODT's** [30-31]

**1. Croscarmellose Sodium**

Croscarmellose sodium, when utilized for wet granulation, is added both during the wet and dry phases of the process, enabling the exploitation of both their wicking and swelling capabilities.

**2. Sodium Starch Glycolate**

In tablets created through either wet granulation or direct compression methods, it is often used. The normal concentration range of a formulation is 2 to 8%.

**3. PVP k-30**

Povidone is used as a solubilizer in oral and parenteral formulations because research has shown that it helps drugs that are poorly soluble from solid dosage forms dissolve more readily.

**4. Sodium Bicarbonate (NaHCO3)**

Water-producing chemicals like sodium hydrogen carbonate, also known as NaHCO3, cause the stomach fluid to enlarge when they come into contact with water. The polymeric gel's ability to capture carbon dioxide after it forms causes the dosage form to inflate, lowering its bulk density below 1.

**5. Microcrystalline Cellulose (Avicel 102)**

It serves a purpose in the direct compression process, wet granulation, and tablet disintegration, respectively. Effects of binding and disintegration are both present.

**6. Lactose**

Tablets and capsules typically contain lactose as a filler or diluent. Lactose is used to a lesser extent in lyophilized products and newborn formula.

**7. Mannitol**

As a tablet diluent, it is employed. Mannitol is widely employed as an excipient in the creation of chewable tablets and mouth-dissolving formulation due to its negative solution temperature, sugar content, and oral feel.

**8. Talc**

Moreover, talc is employed as a lubricant in tablet formulations, an adsorbent, and a novel coating made of powder for tablets with extended release.

**9. Magnesium Stearate**

It is mostly employed as a lubricant in the manufacture of capsules and tablets, with concentrations ranging from 0.25% to 5.0% w/w.

**Name and weight % of various excipients used in Orodispersible Tablets**[32]

**Table No.3: List of various Excipients used in ODT**

| Excipient's name | % Used |
|---|---|
| Antistatic Agent | 0 to 10% |
| Binder | 5 to 10% |
| Disintegrants | 1 to 15% |
| Diluent | 0 to 85% |

**Approaches for taste masking of Orodispersible tablets** [33-34]

There are several medications that taste bad. Since orodispersible pills dissolve in the tongue, adequate taste masking is quite important, particularly in the instance of bitter-tasting medications, such as metronidazole. The bitter or any other unappealing flavor of pharmaceuticals has been attempted to be concealed using a variety of methods, such as the addition of sweeteners and flavors, encapsulation of the unpalatable drugs into micro particles, and pH tampering.

There are a number of ways of taste masking as follows;

**a. Taste masking with flavors and sweetener**

The excipient most frequently employed in the manufacturing of OFDT is mannitol. To provide a pleasing taste and mouth feel, aspartame and citric acid are most frequently employed, sometimes in combination with other flavorings which includes mint, orange, strawberry, and peppermint?

**b. Polymer coating**

Certain unpleasant prescriptions can't be covered up with sweeteners and flavors; in these cases, coating the medicine is another method of hiding the taste.

**c. Ion-exchange resins for taste masking.**

High molecular weight polymers with cationic and anionic functional groups are ion-exchange resins. The most often used polymeric network is a styrene and divinyl benzene copolymer. Ion-exchange resins serve a purpose in medicine formulations to stabilize delicate components, prolong drug release, breaking down tablets, and cover up the taste**.**

**d. Taste masking by cyclodextrines inclusion complex formation.**

By either reducing the drug's oral solubility after administration or restricting the amount of drug particles exposed to taste buds, the complexing agent is able to disguise the bitter taste of the medicine and lessen the perception of bitter taste.

**e. Other Taste-masking techniques**

- ✓ By effervescent agent
- ✓ Salt preparation
- ✓ Solid dispersion systems

**Taste masking agents (Flavouring and Sweetening agents)** [35]

**Table No.4 List of Taste masking agents**

| **Sr.No.** | **Name of the agent** |
|---|---|
| **1.** | Starch, mannitol, and lactose |
| **2.** | D-sorbitol, , sodium glutamate, vanilla essence, and sodium saccharin |
| **3.** | Sodium bicarbonate, cherry flavour and citric acid |
| **4.** | refined sugar, Sodium citrate dehydrate and sodium saccharin, |
| **5.** | Sodium bicarbonate, orange/cream flavour, citric acid |
| **6.** | Sodium phenolate |
| **7.** | Sodium Bicarbonate, lemon flavour and citric acid |

**Traditional Techniques for Manufacturing Orodispersible Tablets** [36-45]

**1. Freeze drying or Lyophilization**

The tablets acquire a very porous structure during the low-temperature sublimation drying process. For sensitive to heat medications, it is also beneficial.

**2. Disintegrant addition method**

Includes adding superdisintegrants to the formulation at the right concentration to achieve fast disintegration/dissolution. In this case, sodium starch glycolate and MCC are utilized in the formulation.

**3. Spray Drying**

**4.** Spray-dried powder that was crushed into tablets showed improved dissolving and fast breakdown. In this method, mannitol can be utilized as a bulking agent combined with superdisintegrants, and gelatin can be employed as both a matrix and a supporting agent.

**5. Direct compression**

The most straightforward and economical method of producing tablets is direct compression. Making tablets this way is the simplest method.

**6. Molding**

Both the solvent method and the heat method are types of molding processes. A hydro-alcoholic solvent is used to moisten the powder mixture in the solvent method, which is followed by compression molding a low-pressure process to create a wetted mass. A suspension including a substance to be used as a drugs, agar, and sugar (like lactose or mannitol), is created during the heat molding process.

**7. Cotton candy process**

The concurrent action of flash melting and spinning is used in the cotton candy process to produce a matrix of polysaccharides or saccharides. To improve the matrix's fluid characteristics and compressibility, it is partially recrystallized.

**8. Mass Extrusion**

This method softens the active blend by using a solvent mixture of methanol and water-soluble polyethylene glycol.

**9. Sublimation**

This method involves sublimating a subliming component, such as (Ammonium bicarbonate, Ammonium carbonate, Urea, Benzoic acid, Naphthalene, camphor), from compressed tablets. High porosity is attained as a consequence of the development of many pores. Where camphor particles had been discovered in the compressed tablets before the camphor was sublimated.

**10. Fast Dissolving Films**

When the solvent gets eliminated from the solutions, a layer that is water soluble appears. The film is blended with substances like resin adsorbate or other micro particles that cover any drug's unpleasant taste, which causes the film to dissolve quickly in the mouth**.**

**11. Nanonization**

The drug's Nano crystals are protected from agglomeration by surface adsorption on certain stabilizers, which are then added to MDTs. Inadequately water soluble medicines benefit the most from this method.

**Patented Technologies for Orodispersible Tablets** [46-54]

**1. Zydis Technology**

The Zydis formulation is a special freeze-dried tablet whereby the medication is physically confined or dissolved within the matrix of a rapid-dissolving carrier substance**.**

**2. Quicksolv**

Similar to Zydis tablets, the solid dose formulation created by Quicksolv technology can be identified by a porous network. Quicksolv medications can disperse in water in less than 10 seconds.

### 3. Wowtab

Wow tab's acronym for "Without Water" (WOW) designates how the tablet should be administered. It just recently made its debut in the United States. Sugar and sugar-like excipients (which include mannitol) are used in Wowtab technology.

### 4. Orasolv

Orasolv Technology is an initiative of CIMA labs. In this technique, the taste of the active medication is concealed. In addition, it has the effervescent disintegrating agent.

### 5. Flash dose

Fuisz has obtained a patent for flash dosage technology. Flash dosage tablets are composed of "floss," a self-binding shear form matrix. Through the use of flash heat processing, shear form matrices are created.

### 6. Durasolv

Because high compaction pressures were used during the tablet's formulation, Durasolv has a significantly higher mechanical strength that its predecessor. The Durasolv product can be produced quicker and less expensively.

### 7. Shearform

Manufacturing floss is the fundamental component of this method. The technique of flash heating feed stock that contains a sugar carrier produces floss. Surfactant is added with either dextrose or mannitol and well blended. The main floss mixture is this.

### 8. OraQuick

A distinctive taste-masking technique is used in the OraQuick rapid-dissolving/disintegrating tablet formulation. According to KV Pharmaceutical, its Micro Mask microsphere technology has a better mouth feel than competing taste-masking goods. Because there are no solvents used in the flavor masking process, production is quicker and more effective.

### 9. Flashtab

Another quick-dissolving tablet composition is the Flashtab technology. Flashtab technology is shielded by a patent held by Prographarm laboratories.

**Evaluations of Orodispersible Tablets**

**A) Pre Compression Parameters**[55-57]

**a) Bulk Density**

It is a proportion of the powder's overall mass to its volume in its bulk. Given by and measured in grams per milliliter,

$$\text{Bulk Density} = M/V0$$

Where, M = Mass of powder

V0 = Bulk volume of the powder

**b) Tapped Density**

It is determined by dividing the powder's total mass by its tapped volume.

Given by and determined by grams / milliliter,

$$\text{Tapped Density} = M/Vt.$$

Where, M = Mass of powder

Vt. = Tapped volume of the powder

**c) Compressibility Index**

The percentage of compressibility (Carr's index) was determined as 100 times the ratio of the variation between the tapped density and bulk density to the particular tapped density.

$$\text{Carr's index} = \text{Tapped density} - \text{Bulk density} / \text{Tapped density} * 100$$

**d) Hausner's ratio**

The ratio of tapped density to bulk density is known as the Hausner's ratio. The granule Hausner's ratio has been determined using the following formula.

$$\text{Tapped density} / \text{Bulk density}$$

**e) Angle of Repose (Ɵ)**

It is described as the largest angle that can be formed between a powder pile's surface and the horizontal.

$$Ɵ = \tan^{-1}(h/r)$$

**B) Post Compression Parameters**[58-67]

**a) General Appearance**

Mentioned are the size, shape, colour, smell, and taste, texture of the tablet's surface, physical imperfections, consistency, and legibility of any distinguishing markings.

**b) Size, Shape, Thickness and diameter**

Dimensional descriptions, monitoring, and control are possible for tablet size and shape. Tablet thickness is a crucial aspect for both look and enumeration when utilizing filling machinery.

**c) Weight Variation**

To assess for weight variation, 20 tablets were chosen at random from the batch and weighed individually. Table shows the weight variation specification as per I.P.

**Table No.5 Limit Of weight variation**

| Weight of the tablet | % Weight variation |
|---|---|
| Less than 80 mg | ±10% |
| 80 mg to 250 mg | ±7.5% |
| More than 250 mg | ±5% |

**d) Hardness**

The force was required to break a tablet when it is struck in two opposite directions is known as the tablet's hardness. Employing a Monsanto hardness tester, it is assessed by taking in six tablets from each formulation.

**e) Friability**

Employing the Roche friabilator, the tablets' friability was assessed. This gadget drops the tablets from a height of 6 inches during each revolution while simultaneously exposing them to the effects of shock and abrasion in a plastic chamber rotating at 25 rpm. A preweighed sample of tablets was put in the friabilator and rotated 100 times. After being de-dusted with a gentle muslin towel, the tablets were reweighed. The formula gives the friability (F %).

Friability = Initial weight – Final Weight / Initial weight * 100

**f) Disintegration Time**

Employing the disintegration apparatus, the experiment is run. The time required for the tablet to completely disintegrate with no noticeable mass left in the instrument is monitored using phosphate buffer (pH 6.8) held at 37°C±2°C as the disintegration medium.

**g) Dissolution Test**

Fast-dissolving tablet in vitro dissolution investigations can be carried out using the recommended equipment at 50 rpm and Sorenson's buffer (900 ml) as the dissolution medium at 37°C±0.5°C. At a particular point in time, the dissolving media sample is removed and filtered. By using UV spectroscopy, the adsorption of the filtered solution is investigated, and the drug content can be estimated using a standard calibration curve.

**h) Water absorption ratio**

Into a small petridish with 6 ml of water, a little piece of tissue paper that was originally folded twice is placed. You may measure how long it takes for the paper to be completely wet by placing a tablet on it. The wet tablet is then weighed again. The formula beneath is used to calculate the water absorption ratio, R.

$$R = 100\ (Wa-Wb)/Wb$$

Where Wa = Weight of tablet after wetting

Wb =Weight of tablet before wetting

**i) Fitness of Dispersion**

Two tablets ought to have been dissolved fully in 100ml of water before doing this test. The end result is a uniform dispersion. This moves through a sieve screen that has a nominal mesh size of 710 mm.

**j) Accelerated Stability Studies**

According to ICH recommendations for expedited research, the rapid-dissolving tablets can be kept under the following circumstances for a period of time and are packaged in appropriate packaging.

- ✓ Approximate relative humidity is up to 75%±5%.
- ✓ Temperature Ranges are given below;

37±1℃

40±1℃

50±1℃

## CONCLUSION

The Orodispersible drug delivery system is one of the major developments in the fields of novel drug delivery systems. In concern with patient compliance, bioavailability, and quick onset of action, ODT's are superior to other conventional dosage forms. ODT's can be effectively used by those who having dysphagia (swallowing difficulties), such as children's, older adults and mentally retarded individuals. Now day's dispersible tablets are being used more frequently as alternative for the treatment of cold, flu and various allergies. With the aim to accomplish faster tablet disintegration in the oral cavity, along with better taste masking abilities and mechanical strength, the porous nature of disintegrating tablet requires to probably improving by extensive research studies.

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